./WEB-INF/src/org/icrisat/lims/sampletracking/uploads/RetrievePlateIdAction.java

```
/*
 * Created on Dec 7, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.uploads;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
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 */
public class RetrievePlateIdAction extends Action {

        Connection con=null;
        ResultSet rs=null;
        Statement stmt=null;
        ResultSet rs1=null;
        Statement stmt1=null;
        public ArrayList userslist(Connection con){
                ArrayList userlist=new ArrayList();
                try{
                        stmt=con.createStatement();
                        rs=stmt.executeQuery("SELECT  distinct user_id FROM user_psc");
```

```
                        while(rs.next()) {
                                userlist.add(rs.getString(1));
                        }
                }catch(Exception e){
                        e.printStackTrace();
        System.out.println("Exception in RetrievePlateIdAction’s userslist method : "+e);
        }
                return userlist;
        }
         public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
 res)throws Exception
                {
                        HttpSession session = req.getSession(true);
  //                    user identification

                        if(session.getAttribute("user")==null){
                                 String msg="logout";
                                return am.findForward(msg);
                        }
                        String username=session.getAttribute("user").toString();
                        String msg="";


                        //database connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                    String arg=req.getQueryString();
                        stmt = con.createStatement();
                        stmt1 = con.createStatement();
                        String user="";
                        try{
                        if(arg.equals("user")&&(username.equals("ABI Operator"))){
                                ArrayList userlist=new ArrayList();
                                user=session.getAttribute("user").toString();
                                RetrievePlateIdAction plateid=new RetrievePlateIdAction();
                                userlist=plateid.userslist(con);
                                msg="opfupl1";
                                session.setAttribute("plist", userlist);
                        }else{
                                ArrayList pllist=new ArrayList();
                                String userid="";
                                if(arg.equals("operator")){
                                        if(session!=null){
                                                session.removeAttribute("ABIusername");
                                        }
                                        DynaActionForm frm = (DynaActionForm)af;
```

```
                                        userid=((String)frm.get("username"));
                                        user=((String)frm.get("username"));
                                        req.getSession().setAttribute("ABIusername", userid);
                                        rs=stmt.executeQuery("SELECT  distinct DNA_Electrophoresis.PCR_Plate_Id FR
OM Experiment_Master INNER JOIN DNA_Electrophoresis ON Experiment_Master.upsc_id = DNA_Electrophoresis.upsc_id LEFT OUTER
JOIN LIMS_Output_Files ON DNA_Electrophoresis.PCR_Plate_Id = LIMS_Output_Files.PCR_Plate_Id WHERE (DNA_Electrophoresis.ups
c_id ~ '"+userid+"') GROUP BY DNA_Electrophoresis.PCR_Plate_Id HAVING (COUNT(LIMS_Output_Files.PCR_Plate_Id) < 3)");

                                }else{
                                        user=session.getAttribute("user").toString();
                                        userid=(String)req.getSession().getAttribute("upsc");

                                        if(session.getAttribute("user").equals("ABI Operator")){
                                                rs=stmt.executeQuery("SELECT distinct DNA_Electrophoresis.PCR_Plat
e_Id FROM Experiment_Master INNER JOIN DNA_Electrophoresis ON Experiment_Master.upsc_id = DNA_Electrophoresis.upsc_id LEFT
 OUTER JOIN LIMS_Output_Files ON DNA_Electrophoresis.PCR_Plate_Id = LIMS_Output_Files.PCR_Plate_Id WHERE (DNA_Electrophore
sis.upsc_id ~ '"+session.getAttribute("ABIusername")+"') GROUP BY DNA_Electrophoresis.PCR_Plate_Id");
                                        }else{
                                                rs=stmt.executeQuery("SELECT distinct DNA_Electrophoresis.PCR_Plat
e_Id FROM Experiment_Master INNER JOIN DNA_Electrophoresis ON Experiment_Master.upsc_id = DNA_Electrophoresis.upsc_id LEFT
 OUTER JOIN LIMS_Output_Files ON DNA_Electrophoresis.PCR_Plate_Id = LIMS_Output_Files.PCR_Plate_Id WHERE (DNA_Electrophore
sis.upsc_id = '"+userid+"') GROUP BY DNA_Electrophoresis.PCR_Plate_Id");
                                        }
                                }
                                while(rs.next()) {
                                        if(req.getParameter("chkplate")==null && (!session.getAttribute("user").eq
uals("ABI Operator"))){
                                                pllist.add(rs.getString(1));
                                        }else{
                                                if(session.getAttribute("user").equals("ABI Operator"))
                                                {
                                                        rs1= stmt1.executeQuery("SELECT  distinct PCR_Plate_Id  FR
OM LIMS_Output_Files WHERE upsc_id ~ '"+session.getAttribute("ABIusername")+"' and description='ABI Raw File' and pcr_plat
e_id~'"+rs.getString(1)+"'");
                                                }else{
                                                        rs1= stmt1.executeQuery("SELECT  distinct PCR_Plate_Id  FR
OM LIMS_Output_Files WHERE upsc_id = '"+userid+"' and description='"+req.getParameter("chkplate")+"' and pcr_plate_id~'"+r
s.getString(1)+"'");
                                                }
                                        if(rs1.next()){
                                        }else{
                                                pllist.add(rs.getString(1));
                                        }
                                  }
                                }
                                msg="opfupl";
                                session.setAttribute("plist", pllist);
                        }
```

```
                        session.setAttribute("username", user);

                         }catch(Exception e){
                                 e.printStackTrace();
                           System.out.println("Exception in RetrievePlateIdAction : "+e);
                          }
                         finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println("Exception in finally block of RetrievePla
teIdAction : "+e);}
                                }

                    return am.findForward(msg);
                }



 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/uploads/UploadFilesAction.java

```
/*
 * Created on Jan 20, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.uploads;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.FileReader;
import java.io.InputStream;
import java.io.PrintStream;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.text.DateFormat;
import java.util.ArrayList;
import java.util.Iterator;
import java.util.List;
import java.util.Properties;
import java.util.StringTokenizer;

```

```
import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.commons.fileupload.DiskFileUpload;
import org.apache.commons.fileupload.FileItem;
import org.apache.commons.fileupload.FileUpload;
import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.SendMail;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
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 */
public class UploadFilesAction extends Action {

        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub

                HttpSession session = req.getSession(true);
//              user identification

                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                        return am.findForward(msg);
                }
                //
                String userid=(String)req.getSession().getAttribute("upsc");
                Connection con = null;
                Statement st=null;
                ResultSet rs = null;
                Statement st1=null;
                ResultSet rs1 = null;
                Statement stmt = null;
                InputStream stream=null;
                String from =null;
                String to=null;
                String subject=null;
                String text=null;
```

```
                String server=null;
                String cc=null;

                try{
                    //retreiving System Date
                        java.util.Date theDate = new java.util.Date();
                java.text.DateFormat df1 = DateFormat.getDateTimeInstance(DateFormat.SHORT, DateFormat.SHORT);
                        String qdate = df1.format(theDate);
                        java.util.Date date=new java.util.Date();
                        java.text.DateFormat dateFormatter = DateFormat.getDateTimeInstance(DateFormat.SHORT, Date
Format.SHORT);
                        String stdate = dateFormatter.format(date);

                        //database connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                        stmt = con.createStatement();
                        st = con.createStatement();
                String plateid=session.getAttribute("outputfiles_pltid").toString();
                String filetype=session.getAttribute("outputfiles_typeoffile").toString();
                String user="";
                String studyname="";
                String project="";
                String crop="";
                String email="";

                rs=st.executeQuery("select distinct upsc_id from dna_electrophoresis where pcr_plate_id='"+plateid
+"'");
                while(rs.next()){
                        userid=rs.getString(1);
                        st1=con.createStatement();
                        rs1=st1.executeQuery("select user_psc.user_id,user_psc.project_name,user_psc.study_name,us
er_psc.crop_name,user_info.email from user_psc inner join user_info on user_psc.user_id=user_info.user_id where upsc_id='"
+rs.getString(1)+"'");
                        while(rs1.next()){
                                user=rs1.getString(1);
                        studyname=rs1.getString(3);
                        project=rs1.getString(2);
                        crop=rs1.getString(4);
                        email=rs1.getString(5);
                        }
                }
                SendMail sendMail=new SendMail();

                //String studyname="newstudylims";
                int nofiles = Integer.parseInt(session.getAttribute("outputfiles_nooffiles").toString());
```

```
                    //String[] filenames=new String[nofiles];
                    String destinationfile="";
                    int i=0;
                    int p=0;
                    String foldertype="";
                    String folderpath="";
                    String rootfolder="UploadFolder";
                    String rootpath=session.getServletContext().getRealPath("//")+"/"+rootfolder;
                    if(!new File(rootpath).exists())
                            new File(rootpath).mkdir();
                    if (filetype.equalsIgnoreCase("ABI Raw File")){

                            foldertype="ABIRawFiles";
                            folderpath=rootpath+"/"+foldertype;
                            if(!new File(folderpath).exists())
                                    new File(folderpath).mkdir();
                            FileUpload fup=new FileUpload();
                                    boolean isMultipart = FileUpload.isMultipartContent(req);
  //                                Create a new file upload handler
                                    DiskFileUpload upload = new DiskFileUpload();
  //                                Parse the request
                                    List items = upload.parseRequest(req); // give u the list of items in the form
                                    Iterator iter = items.iterator();
                                    while (iter.hasNext()) {
                                            //System.out.println("its a field:");
                                            FileItem item = (FileItem) iter.next();
                                    if (item.isFormField()) {
                                            System.out.println(item+" is a field");//it is a simple field
                                    } else
                                    {
                                    //System.out.println("its a file");
                                    File cfile=new File(item.getName());
                                    // this will give u the path upto ROOT folder..if u want to put inside ur own forl
der u can give the location inside the quotes
                                    String folderName=studyname+"_"+crop+"_"+user;
                                    String fpath=folderpath+"/"+folderName;
                                    if(!new File(fpath).exists())
                                    new File(fpath).mkdir();

                                    String strGetFileName=cfile.getName();
                                    String strGetFileNameSub=strGetFileName.substring(strGetFileName.lastIndexOf("\\")
+1);

                                    File tosave=new File(fpath+"//"+strGetFileNameSub);
                                    item.write(tosave);

                                    int k=i+1;
                                    String str="insert into Lims_Output_Files values('" + plateid +"_"+k+"','"+studyna
```

```
me+"','" + cfile.getPath() + "','" + cfile.getName() + "','"+filetype+"','"+cfile.length()+"','" +qdate+ "','" + userid +
"')";
                                p=stmt.executeUpdate(str);
                        i++;
                        //filenames[i-1]=fpath+"//"+strGetFileNameSub;
                                }
                                }

                }else if(filetype.equalsIgnoreCase("Genotyper File")){

                        foldertype="GenotyperFiles";
                        folderpath=rootpath+"/"+foldertype;
                        if(!new File(folderpath).exists())
                                new File(folderpath).mkdir();
                        FileUpload fup=new FileUpload();
                        boolean isMultipart = FileUpload.isMultipartContent(req);
//                              Create a new file upload handler
                                //System.out.println(isMultipart);
                                DiskFileUpload upload = new DiskFileUpload();
//                              Parse the request
                                List items = upload.parseRequest(req); // give u the list of items in the form
                                Iterator iter = items.iterator();
                                while (iter.hasNext()) {

                                FileItem item = (FileItem) iter.next();

                                if (item.isFormField()) {
                                //System.out.println("its a field");//it is a simple field
                                } else
                                {
                                //System.out.println("its a file");
                                File cfile=new File(item.getName());
                                String folderName=studyname+"_"+crop+"_"+user;
//                               this will give u the path upto ROOT folder..if u want to put inside ur own forlde
r u can give the location inside the quotes
                                String fpath1=folderpath+"/"+folderName;
                                if(!new File(fpath1).exists())
                                new File(fpath1).mkdir();


                                String strGetFileNameG=cfile.getName();
                                String strGetFileNameSubG=strGetFileNameG.substring(strGetFileNameG.lastIndexOf("\
\")+1);

                                File tosave=new File(fpath1+"//"+strGetFileNameSubG);
                                item.write(tosave);
                                int k=i+1;
                                String str="insert into Lims_Output_Files values('" + plateid +"_"+ k +"','"+study
```

```
name+"','" + cfile.getPath() + "','" + cfile.getName() + "','"+filetype+"','" +cfile.length()+"','" +qdate+ "','" + userid
 + "')";
                                //System.out.println(str);
                        p=stmt.executeUpdate(str);
                        i++;
                        //filenames[i-1]=fpath1+"//"+strGetFileNameSubG;
                                }
                                }

                        }else if(filetype.equalsIgnoreCase("Allelobin Input File")){

                                String str;  StringTokenizer filedata = null;
                                String str1=null;String fname;
                                ArrayList data=new ArrayList();
                                int recCount = 0;
                                int cnt=0;
                                int q=0;
                                FileUpload fup=new FileUpload();
                                boolean isMultipart = FileUpload.isMultipartContent(req);
                                        //Create a new file upload handler
                                DiskFileUpload upload = new DiskFileUpload();
                                        //Parse the request
                                List items = upload.parseRequest(req); // give u the list of items in the form
                                Iterator iter = items.iterator();
                                String delstr="delete from Lims_output_files where pcr_plate_id like '" + plateid
+"%' and upsc_id ='" + userid + "'  and description like 'AnalysisFile%'";
                                stmt.execute(delstr);
                                stmt.execute("delete from lims_allelobin_output_status where study_name='"+studyna
me+"'");
                                foldertype="AnalysisFiles";
                                folderpath=rootpath+"/"+foldertype;
                                if(!new File(folderpath).exists()){
                                        new File(folderpath).mkdir();}
                                String path=session.getServletContext().getRealPath("//")+"UploadFolder/AnalysisFi
les/";
                                session.setAttribute("conpath",path);
                                DirContents dir=new DirContents();
                                dir.FileDelete(path,plateid);
                                while (iter.hasNext()) {
                                        //FormFile item=(FormFile) iter.next();
                                        FileItem item = (FileItem) iter.next();
                                        if (item.isFormField()) {
                                                //it is a simple field
                                        } else{
                                                //System.out.println("its a file");
                                                File cfile=new File(item.getName());
                                                //File cfile=new File(item.getFileName());
                                                fname=(cfile.getName());
```

```
   249                                                     //fname=fname.concat(cfile.getName());
   250                                                     File tosave=new File(folderpath+"/"+cfile.getName());
   251                                                     //InputStream stream1=item.getInputStream();
   252                                                     item.write(tosave);
   253                                                             BufferedReader in = new BufferedReader(new FileReader(tosa
ve));
   254                                                             recCount=0;
   255                                                             while ((str = in.readLine()) != null){
   256                                                                     if(cnt != 0){
   257                                                                             filedata=new StringTokenizer(str,"\t");
   258                                                                             //System.out.println(filedata.countTokens(
));
   259                                                                             int mcount=filedata.countTokens();
   260                                                                             String reqformat[]=new String[filedata.cou
ntTokens()];
   261                                                                             data.add(new ArrayList());
   262                                                                             while(filedata.hasMoreTokens()){
   263                                                                                     reqformat[q]=filedata.nextToken().
toString();
   264                                                                                     q++;
   265                                                                             }
   266                                                                             q=0;
   267                                                                             if(reqformat[0].indexOf("_") >= 0){
   268                                                                                     ((ArrayList)data.get(recCount)).ad
d(reqformat[8]);}
   269                                                                             for(int m=0;m<reqformat.length;m++){
   270
   271                                                                                     if(m==0){

   272                                                                                             if(reqformat[m].indexOf("_
") >= 0){
   273                                                                                                     //((ArrayList)data
.get(recCount)).add(reqformat[8]);
   274                                                                                                     String mid=reqform
at[m].substring(reqformat[m].indexOf("_")+1);
   275                                                                                                     if(mid.lastIndexOf
("_")>0)
   276                                                                                                             mid=mid.su
bstring(0,mid.indexOf("_"));
   277                                                                                                     //((ArrayList)data
.get(recCount)).add(mid);
   278                                                                                                     String gid=reqform
at[m].substring(0,reqformat[m].indexOf("_"));
   279                                                                                                     ((ArrayList)data.g
et(recCount)).add(gid);
   280                                                                                             }
   281                                                                                     }else if(((m==1) || (m==4)) && ((r
eqformat[0].indexOf("_") >= 0))){
```

```
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
```

```
                                                        bout.close();
                                                        fout.close();
                                                        in.close();
                                                        data.clear();
                                                        tosave.delete();
                                                        //filenames[i]=folderpath+"/"+fname;
                                                }
                                                i++;

                                        }

                                }//end if allelobin input files
                        if(p>0 &&( session.getAttribute("user").equals("ABI Operator"))){
                                Statement mailst=con.createStatement();
                                ResultSet mailrs=st.executeQuery("select email from user_info where user_id='"+ session.ge
tAttribute("user")+"'");
                                String operatormailid=null;
                                while(mailrs.next()){
                                        operatormailid=mailrs.getString(1);
                                }
                                Properties prop=new Properties();
                                        //String server="";

                                prop.load(new FileInputStream(session.getServletContext().getRealPath("//")+"//WEB-INF//co
nfig//"+"ConfigureMailling.properties"));
                                        server=prop.getProperty("smtpServer");

                                        //server="10.3.1.15";
                                //server="10.3.1.14";
                                from="LIMS";
                                if(email==null||email.equals("")){
                                        to=operatormailid;
                                        text="Dear  "+session.getAttribute("user")+",  \n \n \t The "+filetype+" of "+user
+" for plate '"+plateid+"' have been uploaded by the operator into LIMS System.Please pass the message to the user as we d
ont have his/her Email Address.";
                                    }else{
                                        to = email;
                                        //cc="K.ESHWAR@CGIAR.ORG";
                                        cc=prop.getProperty("ABI_Operator_to");
                                        text="Dear "+user+", \n\n \t The "+filetype+" for plate '"+plateid+"' have been up
loaded by the operator into LIMS System.\n \n"+session.getAttribute("user");

                                }
                                subject="Uploaded "+filetype;
                                sendMail.sendMailNoAttachment(server,from,to,cc,subject,text);
                                }
                                //con.close();
                                }catch(Exception e){
```

```
                                System.out.println("Exception in UploadFilesAction : "+e.toString());

                        }
                        finally{
                                try{
                                        if(con!=null) con.close();
                                }catch(Exception e){System.out.println("Exception in finally block of UploadFilesA
ction : "+e);}
                                }
                        return am.findForward("ofupload");
                }
        }
        ./WEB-INF/src/org/icrisat/lims/sampletracking/uploads/MergeAction.java


package org.icrisat.lims.sampletracking.uploads;

import java.io.BufferedReader;
import java.io.File;
import java.io.FileOutputStream;
import java.io.FileReader;
import java.io.PrintStream;
import java.util.ArrayList;
import java.util.Collections;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;


/*
 * Created on Jan 30, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
```

```
 */

/**
 * @author RRajalakshmi
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class MergeAction extends Action {
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                        return am.findForward(msg);
                }

                //String studyname=(String)session.getAttribute("study");
                String upscid=(String)session.getAttribute("upsc");
                String username=session.getAttribute("user").toString();
                if(username.equals("Eashwar")||username.equals("Punna Ramu")){
                        upscid=session.getAttribute("upsc_id").toString();
                        session.setAttribute("upsc_id", upscid);
                }
                DynaActionForm mrgfrm = (DynaActionForm)af;
                String[]plist=((String[])mrgfrm.get("pltlist"));
                String foldertype="";
        String rootfolder="UploadFolder";
        foldertype="AnalysisFiles";
        String rootpath=session.getServletContext().getRealPath("//")+"/"+rootfolder;
        String path=rootpath+"/"+foldertype;
                String newpath=path;
                newpath=newpath.concat("/Inputs");
                if(!new File(newpath).exists())
                        new File(newpath).mkdir();
                newpath=newpath.concat("/"+upscid+"_Data.txt");
                FileOutputStream fout=null;
                PrintStream bout;
                String record=null;
                ArrayList contents=new ArrayList();
                ArrayList markers=new ArrayList();
                ArrayList duplicate=new ArrayList();
                int cnt=0;
                int a=0;
                String[] mark=new String[6];
                ArrayList control=new ArrayList();
```

```
                String str="";
                Connection con=null;
                Statement stmt=null;
                ResultSet rs=null;

                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        for(int i=0;i<plist.length;i++){
                                File read=new File(path+"//"+plist[i]+"_Data.txt");
                                String plist1=plist[i].substring(0,plist[i].lastIndexOf("_"));
                                FileReader fr=new FileReader(read);
                                BufferedReader br = new BufferedReader(fr);
                                stmt=con.createStatement();
                        rs=stmt.executeQuery("select distinct pcr_plate_id,genotype_id from PCR_Tracking_Well_Cont
rols where pcr_plate_controls is not null and pcr_plate_id like '"+plist1+"' and upsc_id like '"+upscid+"'");
                        int k=0;
                        while(rs.next()){
                                control.add(rs.getString(2).toString());
                                k++;
                        }
                        while ((record = br.readLine()) != null) {
                                mark=record.split("\t");
                                if((!str.equals(mark[0])) && (!(markers.contains(mark[0])))){
                                        markers.add(mark[0]);
                                }
                                str=mark[0];
                                contents.add(record);
                        }
                        }
                        for(int l=0;l<contents.size()-2;l++){
                                String gval=contents.get(l).toString();
                                for(int j=l+1;j<contents.size()-2;j++){
                                        String gval1=contents.get(j).toString();
                                        String[] mval=new String[6];
                                        String[] mval1=new String[6];
                                        mval=gval.split("\t");
                                        mval1=gval1.split("\t");
                                        if(control.size() ==2){
                                                if(((!mval[1].equals(control.get(0))) && (!mval1[1].equals(control
.get(1))))){
                                                        if((mval[0].equals(mval1[0])) && (mval[1].equals(mval1[1])
)){
                                                                a++;
                                                                duplicate.add(gval);
                                                                duplicate.add(gval1);
                                                        }
```

```
                                                }
                                        }else if(control.size()==1){
                                                if(((!mval[1].equals(control.get(0))))){
                                                        if((mval[0].equals(mval1[0])) && (mval[1].equals(mval1[1]))){
                                                                a++;
                                                                duplicate.add(gval);
                                                                duplicate.add(gval1);
                                                        }
                                                }
                                        }else{
                                                if((mval[0].equals(mval1[0])) && (mval[1].equals(mval1[1]))){
                                                        a++;
                                                        duplicate.add(gval);
                                                        duplicate.add(gval1);
                                                }
                                        }
                                        control.clear();
                                }
                        }
                        Collections.sort(contents);
                        File fname=new File(newpath);
                        fout=new FileOutputStream(fname);
                        bout=new PrintStream(fout);
                        for(int k=0;k<contents.size();k++){
                                bout.println(contents.get(k));
                        }
                        bout.close();
                        fout.close();
                        String dupval=null;
                        if(a > 0){
                                dupval="true";
                        }else{
                                dupval="false";
                        }
                        /*for(int i=0;i<duplicate.size();i++)
                        System.out.println(duplicate.get(i));*/
                        req.getSession().setAttribute("duplicate",dupval);
                        req.getSession().setAttribute("info",markers);
                        //req.getSession().setAttribute("study",studyname);
                        req.getSession().setAttribute("dupval",duplicate);
                }catch(Exception e){
                System.out.println("Exception in MergeAction : "+e);
            }finally{
                    try{
                            if(con!=null) con.close();
                        }catch(Exception e){System.out.println("Exception in finally block of MergeAction : "+e);
}
```

```
                        }
                return am.findForward("merge");
        }
}./WEB-INF/src/org/icrisat/lims/sampletracking/uploads/DetailsAction.java


/*
 * Created on Dec 7, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.uploads;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class DetailsAction extends Action {
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {
        HttpSession session = req.getSession(true);
//      user identification

        if((String)session.getAttribute("user")==null){

                 String msg="logout";
                return am.findForward(msg);
        }
        //

        String realpath=(String)session.getAttribute("realpath");


        DynaActionForm allelobinfrm = (DynaActionForm)af;
```

```

        String pltid=((String)allelobinfrm.get("plateid"));
        String ftype="";
        String nooffiles=((String)allelobinfrm.get("nooffiles"));
        if(session.getAttribute("user").equals("ABI Operator"))
        {
                ftype="ABI Raw File";
        }else{
                ftype=((String)allelobinfrm.get("typeoffile"));
        }


        req.getSession().setAttribute("outputfiles_pltid",pltid);
        req.getSession().setAttribute("outputfiles_typeoffile",ftype);
        req.getSession().setAttribute("outputfiles_nooffiles",nooffiles);
        return am.findForward("opfupl1");
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/uploads/OutputFilesUploadForm.java

```
/*
 * Created on Jan 19, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.uploads;


import org.apache.struts.upload.FormFile;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class OutputFilesUploadForm {

        private FormFile aBIRawFile;
        private FormFile genotyperFile;
        private FormFile analysisFile;
        private String diptetra;



        /**
```

```
 * @return Returns the genotyperFile.
 */
public FormFile getGenotyperFile() {
        System.out.println(genotyperFile);
        return genotyperFile;
}
/**
 * @param genotyperFile The genotyperFile to set.
 */
public void setGenotyperFile(FormFile genotyperFile) {
        this.genotyperFile = genotyperFile;
        System.out.println("Set method");
}
/**
 * @return Returns the aBIRawFile.
 */
public FormFile getABIRawFile() {
        return aBIRawFile;
}
/**
 * @param rawFile The aBIRawFile to set.
 */
public void setABIRawFile(FormFile rawFile) {
        aBIRawFile = rawFile;
}
/**
 * @return Returns the analysisFile.
 */
public FormFile getAnalysisFile() {
        return analysisFile;
}
/**
 * @param analysisFile The analysisFile to set.
 */
public void setAnalysisFile(FormFile analysisFile) {
        this.analysisFile = analysisFile;
}

/**
 * @return Returns the diptetra.
 */
public String getDiptetra() {
        return diptetra;
}
/**
 * @param diptetra The diptetra to set.
 */
public void setDiptetra(String diptetra) {
```

```
                    this.diptetra = diptetra;
            }
    }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/uploads/AllelobinAction.java

```
/*
 * Created on Jan 4, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */

/**
 * @author RRajalakshmi
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.uploads;

import java.io.BufferedInputStream;
import java.io.BufferedOutputStream;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.FileReader;
import java.io.IOException;
import java.io.PrintStream;
import java.math.BigDecimal;
import java.sql.Connection;
import java.sql.Statement;
import java.text.DateFormat;
import java.util.ArrayList;
import java.util.Collections;
import java.util.StringTokenizer;
import java.util.zip.ZipEntry;
import java.util.zip.ZipOutputStream;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;
import java.sql.ResultSet;


```

```

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

public class AllelobinAction extends Action{
        Connection con=null;
        Statement stmt=null;
                 String record = null;
                 String replen=null;
                 String allelsize=null;
                 int recCount = 0,i=0,j=0,number=0,num=35000,fcnt=0;
                 String des="_Summary.xls";
                 StringTokenizer allel = null;
                 int rpcnt=0;
                 int mcnt=0;
                 ArrayList allels=new ArrayList();
                 ArrayList Bin=new ArrayList();
                 ArrayList Markers=new ArrayList();
                 ArrayList repLength=new ArrayList();
                 ArrayList marker=new ArrayList();
                 ArrayList temp=new ArrayList();
                 BigDecimal lbDec=new BigDecimal(0);
                 BigDecimal ubDec=new BigDecimal(0);
                 BigDecimal mdDec=new BigDecimal(0);
                 BigDecimal sjDec=new BigDecimal(0);
                 BigDecimal mnDec=new BigDecimal(0);
                 BigDecimal sdDec=new BigDecimal(0);
                 BigDecimal medDec=new BigDecimal(0);
                 BigDecimal madDec=new BigDecimal(0);
                 BigDecimal dec7=new BigDecimal(0);
                 double minVar=0;
                 float OptLen=0;
                 int T;
                 String fileprnt,fpath,outpath,fpath1;

        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                //user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }

                try{
```

```
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        AllelobinAction t=new AllelobinAction();
                        String strUpscid=(String)session.getAttribute("upsc_id");
                        Statement studyst=con.createStatement();
                        ResultSet studyrs=studyst.executeQuery("select study_name from user_psc where upsc_id='"+s
trUpscid+"'");
                        String str="";
                        while(studyrs.next()){
                                str=studyrs.getString(1);
                        }
                        req.getSession().setAttribute("studyname",str);
                        String file=session.getServletContext().getRealPath("//");
                        //t.readMyFile(str,file,req);
                        t.readMyFile(strUpscid,file,req,con);
                        t.createZip(str,file,req,con,strUpscid);
                        //con.close();
                }catch(Exception e)
                {
                        //System.out.println("Uh oh, got an IOException error!"+e.toString());
                        System.out.println(e);
                }finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                        return am.findForward("done");

        }
        //-------------------------------------------< readMyFile >--------//

        public String readMyFile(String fName,String path,HttpServletRequest req, Connection con) {

                HttpSession session=req.getSession(true);
                String s;
                String studyname=req.getSession().getAttribute("studyname").toString();
                String crop ="";
                String user ="";
                try{
                        Statement st=con.createStatement();
                        ResultSet rs=st.executeQuery("select user_id,crop_name from user_psc where upsc_id='"+fNam
e+"'");
                        while(rs.next()){
                                crop=rs.getString(2);
                                user=rs.getString(1);
                        }
                }catch(Exception e){
```

```
                        System.out.println("Exception in readMYFile method of AllelobinAction : "+e);
                }

                String folderName=studyname+"_"+crop+"_"+user;
                String rootpath="/UploadFolder//AnalysisFiles//";
                String outfolder="Outputs//";
                File fname=new File(fName);
                fpath=path.concat(rootpath+outfolder);
                if(!new File(fpath).exists())
                new File(fpath).mkdir();
                path=fpath.concat(folderName);
                if(!new File(path).exists())
                        new File(path).mkdir();
                //outpath=fpath.concat("Outputs//"+fName);

                outpath=path.concat("//"+fName);
                fpath="";
                fpath=fpath.concat(session.getServletContext().getRealPath("//")+rootpath+"Inputs//"+fName);
                fpath1=fpath;
                fpath=fpath.concat("_Data.txt");
                session.setAttribute("dpath",fpath);
                session.setAttribute("foldname",folderName);
                fpath1=fpath1.concat("_Info.txt");
                try {
                                FileReader fr=new FileReader(fpath);
                            BufferedReader br = new BufferedReader(fr);
                            String str="";
                            while ((record = br.readLine()) != null) {
                                        allel=new StringTokenizer(record,"\t");
                                        String markerstr=allel.nextToken();
                                        if (!(str.equals(markerstr)))
                                        {
                                                Markers.add(markerstr);
                                                str=markerstr;
                                        }
                                        recCount++;
                                }
                            br.close();
                            fr.close();
                            FileReader fread=new FileReader(fpath1);
                            BufferedReader brep=new BufferedReader(fread);
                            replen=new String();
                            while ((replen = brep.readLine()) != null) {
                                repLength.add(replen);
                            }
                            brep.close();
                            fread.close();
                            if(Markers.size() == repLength.size())
```

```
                                {

                                        /*String realpath=(String)req.getSession().getAttribute("realpath");
                                        con=new SQLDAOFactory().createCon(realpath);*/
                                        try{
                                                java.util.Date date=new java.util.Date();
                                                java.text.DateFormat dateFormatter = DateFormat.getDateTimeInstanc
e(DateFormat.SHORT, DateFormat.SHORT);
                                                String stdate = dateFormatter.format(date);
                                                stmt=con.createStatement();
                                                String updstr="update lims_allelobin_output_status set run_status=
'Running',date_of_run='"+stdate+"' where upsc_id='"+fName+"'";
                                                stmt.executeUpdate(updstr);
                                        }catch(Exception e){
                                                session.setAttribute("run",e.toString());
                                        }
                                        DirContents dir=new DirContents();
                                dir.FileDelete(path,fName);
                                FileOutputStream fout2=null;
                                        PrintStream bout2;
                                        String out1=outpath;
                                        fout2=new FileOutputStream(out1.concat("_Summary.xls"));

                                        bout2=new PrintStream(fout2);
                                        if(allel.countTokens()==3){
                                                bout2.println("Marker\tGenotype\tAllele I\tAllele II\tCall I\tCall
 II");
                                        }else if(allel.countTokens()==5)
                                                bout2.println("Marker\tGenotype\tAllele I\tAllele II\tAllele III\t
Allele IV\tCall I\tCall II\tCall III\tCall IV");
                                                bout2.close();
                                                fout2.close();
                                                FileOutputStream fout3=null;
                                                PrintStream bout3;
                                                String out2=outpath;
                                                fout3=new FileOutputStream(out2.concat("_Out.txt"));
                                                bout3=new PrintStream(fout3);
                                                bout3.close();
                                                fout3.close();
                                                FileOutputStream fout4=null;
                                                PrintStream bout4;
                                                String out4=outpath;
                                                fout4=new FileOutputStream(out4.concat("_Histogram.txt"));
                                                bout4=new PrintStream(fout4);
                                                bout4.close();
                                                fout4.close();
                                                FileOutputStream fout5=null;
                                                PrintStream bout5;
```

```
                                                        String out5=outpath;
                                                        fout5=new FileOutputStream(out5.concat("_Bin.txt"));
                                                        bout5=new PrintStream(fout5);
                                                        bout5.close();
                                                        fout5.close();
                                                        sortAllels(fName);
                                                        try{
                                                                stmt=con.createStatement();
                                                                java.util.Date date=new java.util.Date();
                                                                java.text.DateFormat dateFormatter = DateFormat.getDateTim
eInstance(DateFormat.SHORT, DateFormat.SHORT);
                                                                String stdate = dateFormatter.format(date);
                                                                String updstr="update lims_allelobin_output_status set run
_status='Completed',date_of_run='"+stdate+"' where upsc_id='"+fName+"'";
                                                                stmt.executeUpdate(updstr);
                                                        }catch(Exception e){
                                                                session.setAttribute("complete",e.toString());
                                                        }
                                                }else{

                                                }
                                                s=new String("File read successfully");
                                               // String retpath=outpath;
                                               // session.setAttribute("aretpath",retpath);
                                        } catch (IOException e) {
                                      // catch possible io errors from readLine()
                                      e.printStackTrace();
                                      s=new String("File Reading error");
                                      session.setAttribute("err",e.toString());
                                    }
                                        return s;
                                  } // end of readMyFile()
                                         //--------------------Sorting for marker----------//
                                public String sortAllels(String fName)
                                        {
                                         FileOutputStream fout=null;
                                         PrintStream bout;
                                         File fname=new File(fName);
                                         String alstr1="";
                                         String st=null;
                                         try{
                                                     int k=0;
                                                     int count=1;
                                                     alstr1=(String)Markers.get(0);
                                                     int replength=Integer.parseInt((String)repLength.get(k));
                                                     int i2=0;
                                                     FileReader fr=new FileReader(fpath);
                                                     BufferedReader br = new BufferedReader(fr);
```

```
274                                     record = new String();
275                                     int cnt=0;
276                                     while((record = br.readLine()) != null)
277                                             {
278                                                     allel=new StringTokenizer(record,"\t");
279                                                     int numar=allel.countTokens();
280                                                     String mark[]=new String[numar];
281                                                     int q=0;
282                                                     while(allel.hasMoreTokens()){
283                                                             mark[q]=allel.nextToken().toString();
284                                                             q++;
285                                                     }
286                                                     if((alstr1.equals(mark[0]))){
287                                                             marker.add(new ArrayList());
288                                                             ((ArrayList)marker.get(cnt)).add(alstr1);
289                                                             ((ArrayList)marker.get(cnt)).add(mark[1]);
290                                                             for(int m=2;m<numar;m++){
291                                                                     Float str=new Float(mark[m]);
292                                                                     if(str.intValue()!= 0){
293                                                                             allels.add(str);
294                                                                             ((ArrayList)marker.get(cnt)).add((str.toSt
ring()));
295                                                                             count++;
296                                                                     }else{
297                                                                             ((ArrayList)marker.get(cnt)).add(str.toStr
ing());
298                                                                     }
299                                                             }
300                                                             cnt++;
301                                                     }else if((!(alstr1.equals(mark[0])))){
302                                                             binCalc(alstr1,replength);
303                                                             i2++;
304                                                             alstr1=(String)Markers.get(i2);
305                                                             allels.clear();
306                                                             marker.clear();
307                                                             cnt=0;
308                                                             marker.add(new ArrayList());
309                                                             q=0;
310                                                             while(allel.hasMoreTokens()){
311                                                                     mark[q]=allel.nextToken().toString();
312                                                                     q++;
313                                                             }
314                                                             ((ArrayList)marker.get(cnt)).add(alstr1);
315                                                             ((ArrayList)marker.get(cnt)).add(mark[1]);
316                                                             replength=Integer.parseInt((String)repLength.get(i2));
317                                                             for(int m=2;m<numar;m++){
318                                                                     Float str=new Float(mark[m]);
319                                                                     if(str.intValue()!= 0){
```

```
                                                                                allels.add(str);
                                                                                ((ArrayList)marker.get(cnt)).add((str.toSt
ring()));
                                                                                count++;
                                                                        }else
                                                                                ((ArrayList)marker.get(cnt)).add((str.toSt
ring()));
                                                                }
                                                                cnt++;
                                                                }
                                                        }
                                                br.close();
                                                fr.close();
                                                binCalc(alstr1,replength);
                                                }catch(Exception e) {
                                                        st=new String("Error in creation" + e);
                                                        }
                                                return st;
                                        }
                                public void binCalc(String markerName,int replength)
                                        {
                                         try{
                                                int k;
                                                int p;
                                                int repLength = replength;
                                                float s2=0;
                                                int q1=0;
                                                float mean=0,Med=0,Mad=0;
                                                double sd1=0;
                                                float sd=0;
                                                float s3=0,s4=0;
                                                float abmed;
                                                int size;
                                                Float f,fnew, A2;
                                                int div;
                                                float LB,UB,MD,Ai,pn;
                                                double Si=0.0;  double Sj=0.0; double Sz=0.0,Vw,Vw1=0;
                                                StringBuffer A3=new StringBuffer();
                                                StringBuffer S3=new StringBuffer();
                                                Float Tn,A1;
                                                Collections.sort(allels);
                                                Tn=(Float)allels.get(allels.size()-1);
                                                A1=(Float) allels.get(0);
                                                T =(Math.round(1+(Tn.floatValue() - A1.floatValue())/replength));

                                                for(p=0;p<=(repLength/0.01);p++)
                                                {
                                                        LB=(A1.floatValue()) - repLength;
```

```
                                        temp.add(new ArrayList());
                                        if(p>=1)
                                                LB=LB+(0.01f*p);
                                        for(j=1; j<=T+1;j++)
                                        {
                                                f=new Float(repLength);
                                                fnew=new Float(f.floatValue()/2);
                                                UB=LB + repLength;
                                                MD=LB + fnew.floatValue();
                                                for(i=0;i<allels.size();i++)
                                                {
                                                        A2=(Float)allels.get(i);
                                                        Ai=A2.floatValue();

                                                        if(Ai >= LB && Ai < UB)
                                                        {
                                                                if((A3.length() == 0))
                                                                        A3=A3.append(Double.toString(Ai));
                                                                else
                                                                {
                                                                        A3=A3.append(",");
                                                                        A3=A3.append(Double.toString(Ai));
                                                                }
                                                                Si=Ai-MD;
                                                                s2=s2+Ai;
                                                                q1++;
                                                                Si=Math.pow(Si,2);
                                                                if((S3.length() == 0))
                                                                        S3=S3.append(Double.toString(Si));
                                                                else
                                                                {
                                                                        S3=S3.append(",");
                                                                        S3=S3.append(Double.toString(Si));
                                                                }
                                                            Sj=Sj+Si;
                                                                }
                                                }
                                                ((ArrayList)temp.get(0)).add("Bin number:"+j);
                                                ((ArrayList)temp.get(0)).add("LB ="+LB);
                                                ((ArrayList)temp.get(0)).add("UB ="+UB);
                                                ((ArrayList)temp.get(0)).add("MD ="+MD);
                                                ((ArrayList)temp.get(0)).add(A3.toString());
                                                ((ArrayList)temp.get(0)).add(S3.toString());

                                                if((A3.length() != 0))
                                                {
                                                // Calculating mean
                                                mean=s2/q1;
```

```
s2=0;
q1=0;
//Calculating SD
String aStr[]=(A3.toString()).split(",");
for(int q=0;q<aStr.length;q++)
{
        s3=Float.parseFloat(aStr[q]);
        s3=s3-mean;
        s3=s3*s3;
        s4=s4+s3;
        }
if((aStr.length > 1) && (s4 != 0.0))
{
        div=aStr.length - 1;
        sd=s4/(div);
}
if(sd != 0)
        sd1=Math.sqrt(sd);
int r=(aStr.length/2);
Med=Float.parseFloat(aStr[r]);
float s5[]=new float[aStr.length];
for(int q=0;q<aStr.length;q++)
{
        abmed=Float.parseFloat(aStr[q]);
        abmed=abmed-Med;
        s5[q]=Math.abs(abmed);
}
java.util.Arrays.sort(s5);
if(s5.length > 1)
{
int r1=((aStr.length )%2);
if(r1 == 0)
{
        div=(aStr.length/2)-1;
        Mad=s5[div];
        div=(aStr.length+1)/2;
        Mad=Mad+s5[div];
    Mad=Mad/2;
}
else if(r1 == 1)
        Mad=(s5[(aStr.length/2)]);
}
}
((ArrayList)temp.get(0)).add("Mean="+mean);
((ArrayList)temp.get(0)).add("Sj="+Sj);
((ArrayList)temp.get(0)).add("Sd="+sd1);
((ArrayList)temp.get(0)).add("Med="+Med);
((ArrayList)temp.get(0)).add("Med="+Mad);
```

```
                                                A3.delete(0,A3.length());
                                                S3.delete(0,S3.length());
                                                sd1=0;
                                                sd=0;
                                                Med=0;
                                                Mad=0;
                                                s3=0;
                                                s4=0;
                                                mean=0;
                                                LB=UB;
                                                Sz=Sj+Sz;
                                                Sj=0.0;
                                                }
                                                k=allels.size()-1;
                                                Vw=Sz/k;
                                                ((ArrayList)temp.get(0)).add("Vw="+Double.toString(Vw));
                                                if((p==0))
                                                {
                                                        Bin=(ArrayList)temp.clone();
                                                        }
                                                else if(p==1)
                                                {
                                                        size=((ArrayList)(Bin.get(0))).size()-1;
                                                        String Vwq=(String)((ArrayList)(Bin.get(0))).get(size);
                                                        Vw1=Double.parseDouble(Vwq.substring(3));
                                                        Bin.addAll(temp);
                                                        Vwq=(String)((ArrayList)(Bin.get(1))).get(((ArrayList)(Bin
.get(1))).size()-1);
                                                        }
                                                else if(p>1)
                                                {
                                                        size=((ArrayList)(Bin.get(0))).size()-1;
                                                        String Vwq=(String)((ArrayList)(Bin.get(1))).get(size);
                                                        Vw1=Double.parseDouble(Vwq.substring(3));
                                                        if(Vw < Vw1)
                                                        {
                                                                Bin.remove(1);
                                                                Bin.addAll(temp);
                                                        }
                                                }
                                                temp.clear();
                                                int k3=1;
                                                int q=0;
                                                Sz=0.0;
                                        }
                                String Vwq=(String)((ArrayList)(Bin.get(1))).get(((ArrayList)(Bin.get(1))).size()-
1);
                                Display(markerName,repLength);
```

```
                                Bin.clear();
                                }catch (Exception e){
                                }
                        }
                public void Display(String markerName,int repLength)
                {
                        try
                        {
                                number=number+marker.size();
                                //File for Bin data
                                FileOutputStream fout=null;
                                PrintStream bout;
                                String out1=outpath;
                                fout=new FileOutputStream(out1.concat("_Bin.txt"),true);
                                bout=new PrintStream(fout);
                                //File for Summary data
                                if(number > num)
                                {
                                        fcnt=fcnt+1;
                                        des="_Summary"+fcnt+".xls";
                                        FileOutputStream fout5=null;
                                        PrintStream bout5;
                                        String out5=outpath;
                                        fout5=new FileOutputStream(out5.concat(des));
                                        bout5=new PrintStream(fout5);
                                        bout5.println("Marker\tGenotype\tAllele I\tAllele II\tCall I\tCall II");
                                        num=num*2;
                                        }
                                FileOutputStream fout2=null;
                                PrintStream bout2;
                                String out2=outpath;
                                fout2=new FileOutputStream(out2.concat(des),true);
                                bout2=new PrintStream(fout2);
                                FileOutputStream fout1=null;
                                PrintStream bout1;
                                String out3=outpath;
                                fout1=new FileOutputStream(out3.concat("_Out.txt"),true);
                                bout1=new PrintStream(fout1);
                                FileOutputStream fout3=null;
                                PrintStream bout3;
                                String out4=outpath;
                                fout3=new FileOutputStream(out4.concat("_Histogram.txt"),true);
                                bout3=new PrintStream(fout3);
                                int k3,freq=0;
                                String Hst="",Hst1="";
                                String freqstr="",sjstr="",lbstr="",ubstr="",mdstr="",mnstr="",sdstr="",medstr="",madstr="
",num="";
                                String binNum="",Lb="",Ub="";
```

```
                        for(int i=0; i<Bin.size();i++)
                        {
                                k3=1;
                                if(i==0)
                                {
                                        bout.println("\t\t\t\tObserved Data");
                                        bout.println("Marker name: "+markerName);
                                        bout.println("Repeat Length: "+repLength);
                                        bout3.println();
                                        bout3.println("\t\t\t\tObserved Data");
                                        bout3.println();
                                        bout3.println("Marker name: "+markerName);
                                        bout3.println("Repeat Length: "+repLength);
                                        bout3.println();
                                }
                                if(i==1)
                                {
                                        bout.println();
                                        bout.println("\t\t\tOptimal number of bins using");
                                        bout.println("\t\t    Least-squares minimization procedure");
                                        bout.println();
                                        bout1.println();
                                        bout1.println();
                                        bout1.println("\t\t\tMarker : "+markerName);
                                        bout1.println("\t\t      ***********************");
                                        bout1.println();
                                        bout1.println("Min. Allele Size Observed    = "+allels.get(0));
                                        bout1.println("Max. Allele Size Observed    = "+allels.get(allels.size()-1
));
                                        bout1.println("No. of individuals           = "+allels.size()/2);
                                        bout1.println("Repeat Length                = "+repLength);
                                        bout1.println();
                                        bout1.println("\t\t\tOptimal number of bins using");
                                        bout1.println("\t\t\t----------------------------");
                                        bout1.println("\t\t    Least-squares minimization procedure");
                                        bout1.println("\t\t    -----------------------------------");
                                        bout1.println();
                                        bout1.println("Bin \t Within SS \t LB \t UB \t Bin Median \tFreq \t Mean \
t SD \t Median    MAD");
                                        bout3.println();
                                        bout3.println("\t\t\tOptimal number of bins using");
                                        bout3.println("\t\t    Least-squares minimization procedure");
                                        bout3.println("\t\t    -----------------------------------");
                                        bout3.println();
                                }
                                for(int j = 0; j < ((ArrayList)Bin.get(i)).size(); j++)
                                {
                                String str=(String)((ArrayList)Bin.get(i)).get(j);
```

```
                                if(str.indexOf("Bin number")==0)
                                {
                                        binNum="\t\t\t Bin "+k3;
                                        Hst="B-"+k3+"\t:   ";
                                        if(i==1)
                                                bout1.print(k3);
                                        k3=k3+1;
                                        }
                                else if(str.indexOf("LB")==0)
                                {
                                        Lb=(String)((ArrayList)Bin.get(i)).get(j);
                                        float Lbf=Float.parseFloat(Lb.substring(4));
                                        lbDec = new BigDecimal(Lbf);
                                        lbDec = lbDec.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                                        Hst=Hst+lbDec+"|";
                                }
                                else if((str.indexOf("UB")==0))
                                {
                                        Ub=(String)((ArrayList)Bin.get(i)).get(j);
                                        if(i==1)
                                        {
                                                float Ubf=Float.parseFloat(Ub.substring(4));
                                                ubDec = new BigDecimal(Ubf);
                                                ubDec = ubDec.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                                        }
                                }
                                else if(str.indexOf("MD")==0)
                                {
                                        if(i==1)
                                        {
                                        String Md=(String)((ArrayList)Bin.get(i)).get(j);
                                        float Mdf=Float.parseFloat(Md.substring(4));
                                        mdDec = new BigDecimal(Mdf);
                                        mdDec = mdDec.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                                        }
                                        str=(String)((ArrayList)Bin.get(i)).get(j+1);
                                        if(str.length() == 0)
                                        {
                                                bout3.println(Hst);
                                                Hst="";
                                        }
                                        if(str.length()>1)
                                        {
                                        String aStr[]=str.split(",");
                                        freq=aStr.length;
                                        str=(String)((ArrayList)Bin.get(i)).get(j+2);
                                        String sStr[]=str.split(",");
                                        bout.println(binNum);
```

```
                                        bout.println(Lb);
                                        bout.println(Ub);
                                        if(i==0)
                                                bout.println("Ai \t\t (Ai-M)^2");
                                        if(i==1)
                                                bout.println("Ai \t\t Min SS");
                                        for(int q=0;q<aStr.length;q++)
                                        {
                                                float Af=Float.parseFloat(aStr[q]);
                                                BigDecimal dec1 = new BigDecimal(Af);
                                                dec1 = dec1.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                                                if(sStr[q].length() !=0 )
                                                {
                                                float Sf=Float.parseFloat(sStr[q]);
                                                BigDecimal dec2 = new BigDecimal(Sf);
                                                dec2 = dec2.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                                                bout.println(dec1+"\t\t"+dec2);
                                                }
                                                if(Float.parseFloat(Lb.substring(4)) == dec1.floatValue())
                                                {
                                                        if(!Hst.equals(""))
                                                                Hst=Hst+"*";
                                                        }
                                                else
                                                {
                                                        if(!Hst.equals("") && (dec7.compareTo(dec1) != 0))
                                                                        bout3.println(Hst);
                                                        if(dec7.compareTo(dec1) == 0 && !Hst.equals(""))
                                                                Hst=Hst+"*";
                                                        else if(dec7.compareTo(dec1) != 0)
                                                        {
                                                                Hst="\t    "+dec1+"|*";
                                                                Hst1=Hst;
                                                                }
                                                        dec7=dec1;
                                                        }
                                        }
                                        }
                                }
                                else if(str.indexOf("Sj")==0)
                                {
                                        if(i==1)
                                        {
                                        String Sj=(String)((ArrayList)Bin.get(1)).get(j);
                                        float Sjf=Float.parseFloat(Sj.substring(3));
                                        sjDec = new BigDecimal(Sjf);
                                        sjDec = sjDec.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                                        String mean=(String)((ArrayList)Bin.get(1)).get(j-1);
```

```
                                        float meanf=Float.parseFloat(mean.substring(5));
                                        mnDec = new BigDecimal(meanf);
                                        mnDec = mnDec.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                                        String sd=(String)((ArrayList)Bin.get(1)).get(j+1);
                                        float sdf=Float.parseFloat(sd.substring(3));
                                        sdDec = new BigDecimal(sdf);
                                        sdDec = sdDec.setScale(4, BigDecimal.ROUND_HALF_DOWN);
                                        String med=(String)((ArrayList)Bin.get(1)).get(j+2);
                                        float medf=Float.parseFloat(med.substring(4));
                                        medDec = new BigDecimal(medf);
                                        medDec = medDec.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                                        String mad=(String)((ArrayList)Bin.get(1)).get(j+3);
                                        float madf=Float.parseFloat(mad.substring(4));
                                        madDec = new BigDecimal(madf);
                                        madDec = madDec.setScale(4, BigDecimal.ROUND_HALF_DOWN);
                                        if(freq != 0)
                                        {
                                                        freqstr=freqstr+","+(k3-1);
                                                        sjstr=sjstr+","+sjDec;
                                                        lbstr=lbstr+","+lbDec;
                                                        ubstr=ubstr+","+ubDec;
                                                        mdstr=mdstr+","+Math.round(mdDec.doubleValue());
                                                        num=num+","+freq;
                                                        mnstr=mnstr+","+mnDec;
                                                        sdstr=sdstr+","+sdDec;
                                                        medstr=medstr+","+medDec;
                                                        madstr=madstr+","+madDec;
                                                        }
                                        bout1.println("\t"+sjDec+"\t\t"+lbDec+"\t"+ubDec+"\t"+mdDec+"\t\t"+freq+"\
t"+mnDec+"\t"+sdDec+"\t"+medDec+"\t"+madDec);
                                        freq=0;
                                        }
                                }
                                else if((str.indexOf("Vw")==0))
                                {
                                        String Vwf=(String)((ArrayList)Bin.get(i)).get(j);
                                        float Vf=Float.parseFloat(Vwf.substring(3,Vwf.length()));
                                        BigDecimal dec3 = new BigDecimal(Vf);
                                        dec3 = dec3.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                                        bout.println();
                                        bout.println("Avg Min Var="+dec3);
                                        if(i==1)
                                        {
                                                bout1.println();
                                                bout1.println("\t\tTotal number of Bins      "+(k3-1));
                                                bout1.println();
                                                bout1.println("Avg Min Var="+dec3);
                                                double qd=Math.sqrt(Vf);
```

```
float rep=repLength;
rep=rep/2;
qd=qd/rep;
BigDecimal qdDec = new BigDecimal(qd);
qdDec = qdDec.setScale(4, BigDecimal.ROUND_HALF_DOWN);
bout.println();
bout1.println("Quality Index \t"+qdDec);
bout1.println();
bout1.println("\t\t\tSummary Report of Non-Empty Bins");
bout1.println("\t\t\t--------------------------------");
bout1.println();
bout1.println("Bin \t Within SS \t LB \t UB \t Bin Median \tFreq \t Mean \t SD \t Median    MAD");
String afre[]=freqstr.split(",");
String bfre[]=sjstr.split(",");
String cfre[]=lbstr.split(",");
String dfre[]=ubstr.split(",");
String efre[]=mdstr.split(",");
String ffre[]=mnstr.split(",");
String gfre[]=sdstr.split(",");
String hfre[]=medstr.split(",");
String ifre[]=madstr.split(",");
String jfre[]=num.split(",");
int s;
for(s=0;s<afre.length;s++)
        bout1.println(afre[s]+"\t\t"+bfre[s]+"\t"+cfre[s]+"\t"+dfre[s]+"\t\t"+efre[s]+"\t"+jfre[s]+"\t"+ffre[s]+"\t"+gfre[s]+"\t"+hfre[s]+"\t"+ifre[s]);
bout1.println();
bout1.println("\t\tTotal number of Non - Empty Bins :\t"+(afre.length - 1));
bout3.println();
bout3.println("\t\tTotal number of Non - Empty Bins :\t"+(afre.length - 1));
bout3.println();
bout3.println("\t\tFrequency Table");
bout3.println();
bout3.println("Bin \t LB \t UB \t Frequency");
for(s=0;s<afre.length;s++)
        bout3.println(afre[s]+"\t"+cfre[s]+"\t"+dfre[s]+"\t"+jfre[s]);
bout3.println();
bout3.println("\t\tHistogran");
bout3.println();
bout3.println("\t|");
for(s=1;s<afre.length;s++)
{
        String k4="*";
        int q1=Integer.parseInt(jfre[s]);
```

```
                        for(int k1=0;k1 < q1;k1++)
                                k4=k4+"*";
                                bout3.println("  "+cfre[s]+"|");
                                bout3.println("\t|"+k4);
                }
                bout3.println("  "+dfre[s-1]+"|");
                driftCalc(repLength);
                bout1.println();
                bout1.println("\t\tAllelic Drift");
                bout1.println("\t\t*************");
                bout1.println();
                BigDecimal minV = new BigDecimal(minVar);
                minV = minV.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                BigDecimal optlen = new BigDecimal(OptLen);
                optlen = optlen.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                bout1.println("Optm. Repeat Length ="+optlen);
                bout1.println("Avg. Min. Var. \t="+minV);
                if(repLength == optlen.floatValue())
                        bout1.println("Delta (Allelic Drift)=0");
                else
                {
                        BigDecimal opt=new BigDecimal((optlen.floatValue()) - repLength);

                        opt = opt.setScale(2, BigDecimal.ROUND_HALF_DOWN);
                        bout1.println("Delta (Allelic Drift)="+opt);
                }
                float snew=0;
                String ndata="";
                for(s=0;s<marker.size();s++){
                        for(int w=0;w<((ArrayList)marker.get(s)).size();w++){
                                bout2.print((String)((ArrayList)marker.get(s)).get(w)+"\t");

                                if((w==2) || (w==3)|| (w==4) || (w==5))
                                {
                                snew=Float.parseFloat((String)((ArrayList)marker.get(s)).get(w));

                                for(int q=1;q<afre.length;q++)
                                {
                                        if(snew !=0)
                                        {
                                        if((snew >= Float.parseFloat(cfre[q])) && (snew < Float.parseFloat(dfre[q])))

                                        {
                                                if(ndata.equals(""))
                                                        ndata=efre[q];
                                                else
                                                {
                                                        ndata=ndata+"\t"+efre[q];
```

```
                                                                                    break;
                                                                                }
                                                                            }
                                                                        }
                                                                        else
                                                                        {
                                                                            if(ndata.equals(""))
                                                                                ndata="0";
                                                                            else
                                                                                ndata=ndata+"\t0";
                                                                            break;
                                                                        }
                                                                    }
                                                                }
                                                            }
                                                        bout2.print(ndata);
                                                        ndata="";
                                                        bout2.println();
                                                    }
                                                }
                                            }
                                        }
                                    }
                                    bout2.close();
                                    fout2.close();
                                    bout1.close();
                                    fout1.close();
                                    bout3.close();
                                    fout3.close();
                                    bout.close();
                                    fout.close();
                                }catch(Exception e)
                                {
                                    //System.out.println(e.toString());
                                }
                        }
                        public void driftCalc(int replength)
                        {
                                try{
                                    String Lb=(String)((ArrayList)Bin.get(1)).get(1);
                                    float lb=Float.parseFloat(Lb.substring(4));
                                    int N=allels.size();
                                    float Lt=((Float)allels.get(allels.size()-1)).floatValue()+replength;
                                    float replen=replength+0.15f;
                                    float X,Ub,Md;
                                    double S,Var=0,newVar=0;
                                    lb=lb-0.15f;
                                    float templb=lb;
```

```
                        for(int flag=1;flag<=30;flag++)
                        {
                                Md=lb+replen/2;
                                Ub=lb+replen;
                                //bout.print(Ub+"\t");
                                for(int l=1;l<=T;l++)
                                {
                                        for(int s=0;s<allels.size();s++)
                                        {
                                                X=((Float)allels.get(s)).floatValue();
                                                if((X >= lb) && (X < Ub))
                                                {
                                                        //bout.print(X+"\t"+Md+"\t");
                                                        S=Math.pow((X-Md),2);
                                                        Var=Var+S;
                                                }
                                        }
                                        newVar=newVar+Var;
                                        Var=0;S=0;
                                        lb=Ub;
                                        Ub=Ub+replen;
                                        Md=lb+replen/2;
                                        }
                                newVar=newVar/N;
                                if(flag==1)
                                {
                                        minVar=newVar;
                                        OptLen=replen;
                                }
                                else if(minVar > newVar)
                                {
                                        minVar=newVar;
                                        OptLen=replen;
                                }
                                replen=replen-0.01f;
                                lb=templb+0.01f;
                                templb=lb;
                                newVar=0;Var=0;S=0;
                        }
                }catch(Exception e){
        }
        }
        public void createZip(String fName,String path,HttpServletRequest req,Connection con,String str)
        {
                int BUFFER = 2048;
                String studyname=req.getSession().getAttribute("studyname").toString();
                String crop ="";
                String user ="";
```

```
                String strUpsc=str;
                try{Statement st=con.createStatement();
                ResultSet rs=st.executeQuery("Select crop_name,user_id from user_psc where upsc_id='"+str+"'");
                while(rs.next()){
                        crop=rs.getString(1);
                        user=rs.getString(2);
                }
                }catch(Exception e){
                        System.out.println("Exception in createZip of AllelobinAction : "+e);
                }
                String rpath="/UploadFolder//AnalysisFiles//Outputs//";
                String folderName=studyname+"_"+crop+"_"+user;
                BufferedInputStream origin = null;
                String target = path.concat(rpath+folderName);

                 FileOutputStream dest = null;
                 ZipOutputStream makeZip = null;
                 File f = null;
                try{
                        //if(!new File(target1).exists())
                     //         new File(target1).mkdir();
                   dest = new FileOutputStream(target+"//"+fName+".zip");
                   makeZip = new ZipOutputStream(new BufferedOutputStream(dest));
                   byte data[] = new byte[BUFFER];
                        // get a list of files from current directory
                        f = new File(target);
                        String files[]  = f.list();
                         for (int i=0; i<files.length; i++) {
                                //String strfileName=fName.concat("_");
                                String strfileName=strUpsc.concat("_");
                                if(files[i].startsWith(strfileName))
                                {
                                FileInputStream fi = new FileInputStream(target+"//"+files[i]);
                                origin = new BufferedInputStream(fi, BUFFER);
                                ZipEntry entry = new ZipEntry(files[i]);
                                makeZip.putNextEntry(entry);
                                int count;
                                while((count = origin.read(data, 0,BUFFER)) != -1) {
                                   makeZip.write(data, 0, count);
                                }
                                origin.close();
                                 }
                         }
                     makeZip.close();
                  }catch(Exception e) {
                         e.printStackTrace();
                  }
          }
```

975 }./WEB-INF/src/org/icrisat/lims/sampletracking/uploads/RetrieveAllelobinAction.java

```
/*
 * Created on Jan 19, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.uploads;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.DynaActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author RRajalakshmi
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class RetrieveAllelobinAction extends Action{
        Connection con=null;
        Statement stmt=null;
        ResultSet rs=null;
        public ArrayList Loadlist(String user,HttpServletRequest req)
        {
                ArrayList list=new ArrayList();
                //String list=null;
                //String user12=user;
                try{
                        stmt=con.createStatement();
                        rs=stmt.executeQuery("select distinct(a.study_name) from lims_output_files a,lims_allelobi
```

```
n_output_status b where run_status is null and a.study_name=b.study_name and a.upsc_id='"+user+"'");
                        while(rs.next()){
                                //list=rs.getString(1);
                                list.add(rs.getString(1));
                        }
                }catch(Exception e){System.out.println(e);}
                return list;
        }
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                //
                String msg="";
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        String upsc=req.getSession().getAttribute("upsc").toString();
                        String user = req.getSession().getAttribute("user").toString();
                        String arg=req.getQueryString();
                        if(arg.equals("user")&&(user.equals("Eashwar")||user.equals("Punna Ramu"))){
                                ArrayList userlist=new ArrayList();
                                ArrayList projectlist=new ArrayList();
                                ArrayList studylist=new ArrayList();
                                ArrayList croplist=new ArrayList();
                                Statement userst=con.createStatement();
                                Statement projectst=con.createStatement();
                                Statement studyst=con.createStatement();
                                Statement cropst=con.createStatement();
                                ResultSet userrs=userst.executeQuery("Select distinct user_id from user_psc");
                                while(userrs.next()){
                                        userlist.add(userrs.getString(1));
                                }
                                ResultSet projectrs=userst.executeQuery("Select distinct project_name from user_ps
c");
                                while(projectrs.next()){
                                        projectlist.add(projectrs.getString(1));
                                }
                                ResultSet studyrs=userst.executeQuery("Select distinct study_name from user_psc");
                                while(studyrs.next()){
                                        studylist.add(studyrs.getString(1));
                                }
                                ResultSet croprs=userst.executeQuery("Select distinct crop_name from user_psc");
```

```
                                while(croprs.next()){
                                        croplist.add(croprs.getString(1));
                                }
                                session.setAttribute("userslist", userlist);
                                session.setAttribute("projectlist", projectlist);
                                session.setAttribute("studylist", studylist);
                                session.setAttribute("croplist", croplist);
                                msg="success1";
                        }else{
                                ArrayList slist=new ArrayList();
                                if(arg.equals("operator")){
                                        DynaActionForm frm = (DynaActionForm)af;
                                        String username=(String)frm.get("username");
                                        String project=(String)frm.get("projectname");
                                        String study=(String)frm.get("studyname");
                                        String crop=(String)frm.get("cropname");
                                        upsc=project+study+crop+username;
                                        slist=Loadlist(upsc,req);
                                }else{
                                        slist=Loadlist(upsc,req);
                                }
                                req.getSession().setAttribute("list",slist);
                                msg="success";
                        }
                        //System.out.println("upsc id : "+upsc);
                        session.setAttribute("upsc_id", upsc);

                        //con.close();
                }catch(Exception e){
                        System.out.println("Exception in Retrieve Allelobin Action : "+e);
                        }
                finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println("Exception in finally block of Retrieve Al
lelobinAction : "+e);}
                                }
                return am.findForward(msg);
        }
 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/uploads/RetrieveFilesAction.java

```
/*
 * Created on Jan 30, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
```

```
 */
package org.icrisat.lims.sampletracking.uploads;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;


import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 * @author RRajalakshmi
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class RetrieveFilesAction extends Action {
        Connection con=null;
        Statement stmt=null;
        ResultSet rs=null;

        public ArrayList LoadPltlist(String user,String study,HttpServletRequest req, Connection con)
                {
                        ArrayList list=new ArrayList();
                        try{
                        stmt=con.createStatement();
                        rs=stmt.executeQuery("select PCR_Plate_Id from LIMS_Output_Files where Study_Name ='" +stu
dy+ "' and description='AnalysisFile' and upsc_id = '" +user+ "' order by Date_Of_Upload");
                        while(rs.next())
                        {
                                list.add(rs.getString(1));
                        }
                        }catch(Exception e)
                        {System.out.println(e);}
                        return list;
                }
```

```
                public ActionForward execute(ActionMapping am, ActionForm af,
                                HttpServletRequest req, HttpServletResponse res) throws Exception {
//                      user identification
                        HttpSession session=req.getSession(true);
                        if((String)session.getAttribute("user")==null){
                                 String msg="logout";
                                return am.findForward(msg);
                        }
                        String msg="";
                        String userid=session.getAttribute("user").toString();
                        String user="";
                        String study="";
                        //
                        try{
                                ServletContext context = servlet.getServletContext();
                                DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                                con=dataSource.getConnection();

                                String username=session.getAttribute("user").toString();
                                String arg=req.getQueryString();
                                if(arg.equals("user")&&(username.equals("Eashwar")||username.equals("Punna Ramu"))
){
                                        ArrayList pltl=new ArrayList();
                                        stmt=con.createStatement();
                                        rs=stmt.executeQuery("SELECT  distinct user_id FROM user_psc");
                                        while(rs.next()){
                                                pltl.add(rs.getString(1));
                                        }
                                        req.getSession().setAttribute("pltlist",pltl);
                                        msg="success1";
                                }else{
                                        if(arg.equals("operator")){
                                                ArrayList studylist=new ArrayList();
                                                ArrayList projectlist=new ArrayList();
                                                ArrayList croplist=new ArrayList();
                                                DynaActionForm frm = (DynaActionForm)af;

                                                userid=((String)frm.get("username"));
                                                user=((String)frm.get("username"));
                                                stmt=con.createStatement();
                                                rs=stmt.executeQuery("SELECT  distinct project_name from user_psc
where user_id='"+user+"'");
                                                while(rs.next())
                                                {
                                                        projectlist.add(rs.getString(1));
                                                }
                                                Statement stmt1=con.createStatement();
                                                ResultSet rs1=stmt1.executeQuery("SELECT  distinct study_name from
```

```
 user_psc where user_id='"+user+"'");
                                                        while(rs1.next())
                                                        {
                                                                studylist.add(rs1.getString(1));
                                                        }
                                                        Statement stmt2=con.createStatement();
                                                        ResultSet rs2=stmt2.executeQuery("SELECT  distinct crop_name from
user_psc where user_id='"+user+"'");
                                                        while(rs2.next())
                                                        {
                                                                croplist.add(rs2.getString(1));
                                                        }
                                                        req.getSession().setAttribute("studylist",studylist);
                                                        req.getSession().setAttribute("projectlist",projectlist);
                                                        req.getSession().setAttribute("croplist",croplist);
                                                        msg="success3";
                                                }else if(arg.equals("study")){
                                                        DynaActionForm frm = (DynaActionForm)af;
                                                        ArrayList platelist=new ArrayList();;
                                                        userid=session.getAttribute("username").toString();
                                                        study=((String)frm.get("studyname"));
                                                        String project=((String)frm.get("projectname"));
                                                        String crop=((String)frm.get("cropname"));
                                                        user=project+study+crop+userid;
                                                        platelist=LoadPltlist(user,study,req,con);
                                                        req.getSession().setAttribute("pltlist",platelist);
                                                        req.getSession().setAttribute("upsc_id",user);
                                                        msg="success2";
                                                }else{
                                                        ArrayList pltlist=new ArrayList();;
                                                        user=req.getSession().getAttribute("upsc").toString();
                                                        study=req.getSession().getAttribute("study").toString();
                                                        pltlist=LoadPltlist(user,study,req,con);
                                                        req.getSession().setAttribute("pltlist",pltlist);
                                                        msg="success2";
                                                }
                                        }
                                        session.setAttribute("username", userid);
                                }catch(Exception e){
                                        System.out.println("Exception in RetrieveFilesAction : "+e);
                                }finally{
                                      try{
                                                if(con!=null) con.close();
                                         }catch(Exception e){System.out.println("Exception in finally block of RetrieveFil
esAction : "+e);}
                                        }
                                return am.findForward(msg);
                        }
```

```
        }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/uploads/DirContents.java

```
package org.icrisat.lims.sampletracking.uploads;
import java.io.File;
import java.io.FilenameFilter;

public class DirContents
{
        public void FileDelete(String path,String study)
        {
                File myDir=new File(path);
                FilenameFilter select = new FileListFilter(study);

                //Get the contents of directory
                File[] contents=myDir.listFiles(select);

                //List the contents of directory
                if(contents != null)
                {
                        //System.out.println("Number of matching files found: "+contents.length);
                        for(int i=0;i<contents.length;i++)
                        {
                                //System.out.println(contents[i]+" Deleted");
                                contents[i].delete();
                        }
                }

        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/uploads/MergeFileInsertAction.java

```
package org.icrisat.lims.sampletracking.uploads;

import java.io.File;
import java.io.FileOutputStream;
import java.io.PrintStream;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;
```

```


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/*
 * Created on Feb 7, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */

/**
 * @author RRajalakshmi
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class MergeFileInsertAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                        return am.findForward(msg);
                }
                //

                DynaActionForm mrgfrm = (DynaActionForm)af;
                Connection con=null;
                Statement stmt=null;
                ResultSet rs=null;
                Statement stmt1=null;
                ResultSet rs1=null;

                String[]info=((String[])mrgfrm.get("repeat"));
                String studyname=req.getSession().getAttribute("study").toString();
                String user=req.getSession().getAttribute("upsc").toString();
                String username=session.getAttribute("user").toString();
                if(username.equals("Eashwar")||username.equals("Punna Ramu")){
                        user=session.getAttribute("upsc_id").toString();

                }
```

```
                String path=session.getServletContext().getRealPath("//");
                path=path.concat("/UploadFolder/AnalysisFiles/Inputs");
                path=path.concat("/"+user+"_Info.txt");
                FileOutputStream fout=null;
                PrintStream bout;
                File fname=new File(path);
                fout=new FileOutputStream(fname);
                bout=new PrintStream(fout);
                for(int i=0;i<info.length;i++)
                        bout.println(info[i]);
                bout.close();
                fout.close();

                //String user12=user;
                /*String realpath=(String)session.getAttribute("realpath");
                 con=new SQLDAOFactory().createCon(realpath);*/
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        stmt=con.createStatement();
                        if(username.equals("Eashwar")||username.equals("Punna Ramu")){
                                stmt1=con.createStatement();
                                rs1=stmt1.executeQuery("select study_name from user_psc where upsc_id='"+user+"')
;
                                while(rs1.next()){
                                        studyname=rs1.getString(1);
                                }
                        }

                        ///String user=req.getSession().getAttribute("user").toString();
                        //stmt.executeUpdate("insert into lims_allelobin_output_status(study_name,user_id) values(
'"+studyname+"','"+user+"')");
                        rs=stmt.executeQuery("select * from lims_allelobin_output_status where study_name='"+study
name+"' and upsc_id='"+user+"'");
                        if(rs.next()){
                                stmt.executeUpdate("delete from lims_allelobin_output_status where study_name='"+s
tudyname+"' and upsc_id='"+user+"'");
                                stmt.executeUpdate("insert into lims_allelobin_output_status(study_name,upsc_id) v
alues('"+studyname+"','"+user+"')");
                        }else{
                                stmt.executeUpdate("insert into lims_allelobin_output_status(study_name,upsc_id) v
alues('"+studyname+"','"+user+"')");
                        }
                        //con.close();
                }catch(Exception e){
                        System.out.println(e);
                }
```

```
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return am.findForward("info");
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/uploads/FileListFilter.java

```
package org.icrisat.lims.sampletracking.uploads;
import java.io.File;
import java.io.FilenameFilter;


class  FileListFilter implements FilenameFilter
{
        private String name;
        //private String extension;

        public FileListFilter(String name)
        {
                this.name=name;
                //this.extension=extension;
        }

        public boolean accept(File directory,String filename)
        {
                boolean fileOK = true;
                if (name != null)
                {
                        fileOK &= filename.startsWith(name);
                }

                return fileOK;
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/DNAPoolingInsertAction.java

```
/**
 *
 */
package org.icrisat.lims.sampletracking.dilution;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
```

```
import java.sql.Statement;
import java.sql.Timestamp;
import java.util.Calendar;
import java.util.GregorianCalendar;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.startup.details.GenotypesAction;

/**
 * @author psrikalyani
 *
 */
public class DNAPoolingInsertAction extends Action{

        @Override
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                // TODO Auto-generated method stub
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                       return am.findForward(msg);
                }

                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                String MaxId="";
                try{
                       ServletContext context = servlet.getServletContext();
                       DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                       con=dataSource.getConnection();
                       st=con.createStatement();
                       GenotypesAction ga=new GenotypesAction();
                       GregorianCalendar calendar = new GregorianCalendar();
                       int intYear=calendar.get(Calendar.YEAR);
                       String strYear=String.valueOf(intYear);
                       String pooledPlate_id=session.getAttribute("pplate").toString();
```

```
                        //System.out.println("samples="+req.getParameter("hstrSamples"));
                        String upsc_id=session.getAttribute("upsc").toString();
                        String[] strGenotypeids=req.getParameter("hstrSamples").split(",,");
                        String genotype_id="";String pooled_dna="";String limsId="";String row="";int col=0;
                        String Normalized_plates="";
                        String exp=session.getAttribute("exp").toString();
                        rs=st.executeQuery("select max(LIMS_Id)as lid from Genotype_Master");

                         while(rs.next()){
                                 MaxId=rs.getString(1);
                         }
                        // System.out.println("MAX _ ID="+MaxId);

                         if(MaxId==null || MaxId.equals("")){
                                 MaxId=strYear+"_000000";
                         }else if(Integer.parseInt(MaxId.substring(0,4))!=intYear){
                                 MaxId=strYear +"_000000";
                         }
                        String id=MaxId;
                        String normPlates=req.getParameter("hNormPlates");

                        for(int l=0;l<strGenotypeids.length;l++){
                                limsId=ga.getLimsid(Long.parseLong(id.substring(5)));
                                String[] strSamples=strGenotypeids[l].split("!~!");
                                row=strSamples[1];
                                col=Integer.parseInt(strSamples[2]);
                                pooled_dna=strSamples[0];
                                genotype_id=strSamples[3];
                                Normalized_plates=normPlates.substring(0,normPlates.lastIndexOf(","));

                                PreparedStatement pstmt1=con.prepareStatement("insert into dna_pooling values(?,?,?,?,?,?,?)");
                                pstmt1.setString(1,pooledPlate_id);
                                pstmt1.setString(2,limsId);
                                pstmt1.setInt(3,col);
                                pstmt1.setString(4,row);
                                pstmt1.setString(5,Normalized_plates);
                                pstmt1.setString(6,pooled_dna);
                                pstmt1.setString(7,upsc_id);
                                pstmt1.executeUpdate();

                                PreparedStatement pstmt=con.prepareStatement("insert into genotype_master values(?,?,?,?,?)");
                                pstmt.setString(1,limsId);
                                pstmt.setString(2,genotype_id);
                                pstmt.setString(3,exp);
                                pstmt.setString(4,upsc_id);
                                pstmt.setTimestamp(5,new Timestamp(System.currentTimeMillis()));
```

```
                                pstmt.executeUpdate();

                                id=ga.getLimsid(Long.parseLong(id.substring(5)));
                        }

                }catch(Exception e){System.out.println(e);}
                   finally{
                               try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }

                return am.findForward("insert");
        }


}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/UploadGwlAction.java

```
/*
 * Created on Aug 4, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.dilution;

import java.io.File;
import java.io.FileOutputStream;
import java.io.InputStream;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
import java.sql.Timestamp;
import java.text.SimpleDateFormat;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
```

```
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import org.apache.struts.upload.FormFile;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class UploadGwlAction extends Action {

        /* (non-Javadoc)
         * @see org.apache.struts.action.Action#execute(org.apache.struts.action.ActionMapping, org.apache.struts.action.ActionForm, javax.servlet.http.HttpServletRequest, javax.servlet.http.HttpServletResponse)
         */
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception
        {
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                        String msg="logout";
                        return am.findForward(msg);
                }
                //
                Connection con=null;
                PreparedStatement st=null;
                Statement stmt=null;
                ResultSet rs=null;
                String flag="";

                try{
                        //UploadGwlForm uf=(UploadGwlForm)af;
                        DynaActionForm uf=(DynaActionForm)af;
                        FormFile tfile=(FormFile)uf.get("tecanfile");
                        String rootfolder="GwlInputFiles";
                        String newGWlfolder=session.getAttribute("study")+"_"+session.getAttribute("crop")+"_"+(String)session.getAttribute("user");
                        String tecanfile=req.getSession().getServletContext().getRealPath("//")+"/"+rootfolder+"/"+newGWlfolder+"/"+tfile;

                        SimpleDateFormat formatter=new SimpleDateFormat("MM-dd-yyyy");
                        Timestamp ts=new Timestamp(formatter.parse(req.getParameter("nordate")).getTime());
                        /*String realpath=(String)session.getAttribute("realpath");
                        con=new SQLDAOFactory().createCon(realpath);*/
```

```
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        stmt=con.createStatement();
                        rs=stmt.executeQuery("select * from LIMS_GwlFiles where DNA_Plate_Id='"+req.getParameter("extid")+"'");
                        if(rs.next()) flag="true";
                        else
                        {
                                flag="false";
                            st=con.prepareStatement("insert into LIMS_GwlFiles values('"+req.getParameter("extid")+"','"+tecanfile+"","+req.getParameter("dilfactor")+",'"+ts+"','"+req.getSession().getAttribute("upsc")+"')");
                            st.execute();
                        }
                        //req.getSession().setAttribute("gwlflag",flag);
                        String path=req.getSession().getServletContext().getRealPath("//")+"/"+rootfolder;
                        if(!new File(path).exists()){
                                //System.out.println("The file doesnot exists so creating the folders"+path);
                                new File(path).mkdir();
                        }
                        String rootpath=path+"/"+newGWlfolder;
                        if(!new File(rootpath).exists()){
                                //System.out.println("The file doesnot exists so creating the folders"+rootpath);
                                new File(rootpath).mkdir();
                        }
                        //System.out.println(rootpath);
                        File gwlfile=new File(rootpath+"/"+tfile);
                        gwlfile.createNewFile();
                        InputStream stream=tfile.getInputStream();
                        byte[] buffer = new byte[8192];
                        int bytesRead = 0;
                        FileOutputStream fos = new FileOutputStream(gwlfile);
                        while ((bytesRead = stream.read(buffer, 0, 8192)) != -1)
                                {
                                                fos.write(buffer, 0, bytesRead);
                                }
                        fos.close();
                        stream.close();
                        //con.close();
                }catch(Exception e){System.out.println("Exception in UploadGwlAction : "+e);}
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println("Exception in finally block of UploadGwlAction : "+e);}
                        }
                return am.findForward("success");

```

```
        }
 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/DilutionAction.java

```
/*
 * Created on Sep 27, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.dilution;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class DilutionAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                //
```

```
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                Vector v=new Vector();
                try{
                        /*String realpath=(String)session.getAttribute("realpath");
                        con=new SQLDAOFactory().createCon(realpath);*/
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        //rs=st.executeQuery("SELECT DISTINCT Plate_Id, DNA_Quantification_Protocol FROM LIMS_EDP
WHERE(User_Id = '"+req.getSession().getAttribute("user")+"') AND (DNA_Quantification_Tracking_Id IS NOT NULL) AND (DNA_Dil
ution_Tracking_Id IS NULL)");
                        rs=st.executeQuery("SELECT DNA_Plate_Id,DNA_Quantification_Protocol FROM DNA_Quantificatio
n_Tracking WHERE(DNA_Plate_Id NOT IN(SELECT DNA_Plate_Id FROM DNA_Dilution)) AND upsc_id='"+req.getSession().getAttribute(
"upsc")+"'");

                        while(rs.next())
                        {
                                String plate_id=rs.getString(1)+ ':' + rs.getString(2);
                                v.add(plate_id);
                        }
                        //con.close();
                    }catch(Exception e){System.out.println(e);}
                    finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                 req.getSession().setAttribute("dilutionvector",v);
                 req.getSession().setAttribute("param","new");
                return am.findForward("newdilution");
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/UploadGwlForm.java

```
/*
 * Created on Aug 4, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.dilution;


import javax.servlet.http.HttpServletRequest;
```

```

import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.upload.FormFile;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class UploadGwlForm extends ActionForm{
        /* (non-Javadoc)
         * @see org.apache.struts.action.ActionForm#validate(org.apache.struts.action.ActionMapping, javax.servlet
.http.HttpServletRequest)
         */
        public ActionErrors validate(ActionMapping am, HttpServletRequest req) {
                // TODO Auto-generated method stub
                ActionErrors ae=new ActionErrors();
                FormFile file=getTecanfile();
                String sfile=String.valueOf(file);
                String ext=sfile.substring(sfile.lastIndexOf(".")+1);
                if(!ext.equalsIgnoreCase("gwl"))
                        ae.add("myerrors",new ActionError("prompt.select.gwl"));
                return ae;
        }
  String extid;
  double dilfactor;
  String nordate;
  FormFile tecanfile;
  String filename;
/**
 * @return Returns the filename.
 */
public String getFilename() {
        return filename;
}
/**
 * @param filename The filename to set.
 */
public void setFilename(String filename) {
        this.filename = filename;
}
/**
 * @return Returns the dilfactor.
 */
```

```
public double getDilfactor() {
        return dilfactor;
}
/**
 * @param dilfactor The dilfactor to set.
 */
public void setDilfactor(double dilfactor) {
        this.dilfactor = dilfactor;
}
/**
 * @return Returns the extid.
 */
public String getExtid() {
        return extid;
}
/**
 * @param extid The extid to set.
 */
public void setExtid(String extid) {
        this.extid = extid;
}
/**
 * @return Returns the nordate.
 */
public String getNordate() {
        return nordate;
}
/**
 * @param nordate The nordate to set.
 */
public void setNordate(String nordate) {
        this.nordate = nordate;
}
/**
 * @return Returns the tecanfile.
 */
public FormFile getTecanfile() {
        return tecanfile;
}
/**
 * @param tecanfile The tecanfile to set.
 */
public void setTecanfile(FormFile tecanfile) {
        this.tecanfile = tecanfile;
}


}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/DilutionParametersForm.java

```
/*
 * Created on Jul 18, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.dilution;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
import org.apache.struts.validator.ValidatorForm;
public class DilutionParametersForm extends ValidatorForm{
        private String pid;
        private double conc;
        private int totvol;
        private String reagent,remarks;



        /**
         * @return Returns the conc.
         */
        public double getConc() {
                return conc;
        }
        /**
         * @param conc The conc to set.
         */
        public void setConc(double conc) {
                this.conc = conc;
        }

        /**
         * @return Returns the reagent.
         */
        public String getReagent() {
                return reagent;
        }
        /**
         * @param reagent The reagent to set.
         */
```

```
        public void setReagent(String reagent) {
                this.reagent = reagent;
        }
        /**
         * @return Returns the remarks.
         */
        public String getRemarks() {
                return remarks;
        }
        /**
         * @param remarks The remarks to set.
         */
        public void setRemarks(String remarks) {
                this.remarks = remarks;
        }

        /**
         * @return Returns the totvol.
         */
        public int getTotvol() {
                return totvol;
        }
        /**
         * @param totvol The totvol to set.
         */
        public void setTotvol(int totvol) {
                this.totvol = totvol;
        }
        public void setPid(String pid)
        {
                 this.pid=pid;
        }
        public String getPid()
        {
                return pid;
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/CalcBean.java

```
/*
 * Created on Jul 28, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
```

```
package org.icrisat.lims.sampletracking.dilution;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
import java.util.Vector;
public class CalcBean {
        Vector vect;
    public void setVect(Vector v)
    {
        vect=v;
    }
    public Vector getVect()
    {
        return vect;
    }

}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/PlateIdRoboticsAction.java

```
/*
 * Created on Dec 13, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.dilution;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
```

```
import org.apache.struts.action.ActionMapping;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class PlateIdRoboticsAction extends Action{

        /* (non-Javadoc)
         * @see org.apache.struts.action.Action#execute(org.apache.struts.action.ActionMapping, org.apache.struts.action.ActionForm, javax.servlet.http.HttpServletRequest, javax.servlet.http.HttpServletResponse)
         */
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                //
                Connection con=null;
                Statement stmt=null;
                ResultSet rs=null;
                ArrayList list=new ArrayList();
                try{
                        /*String realpath=(String)session.getAttribute("realpath");
                        con=new SQLDAOFactory().createCon(realpath);*/
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        stmt=con.createStatement();
                        rs=stmt.executeQuery("SELECT DISTINCT DNA_Plate_Id FROM DNA_Extraction_Tracking WHERE(DNA_Plate_Id NOT IN(SELECT DNA_Plate_Id FROM DNA_Quantification_Tracking)) AND (DNA_Plate_Id NOT IN(SELECT DNA_Plate_Id FROM LIMS_GwlFiles))and upsc_id='"+req.getSession().getAttribute("upsc")+"'");
                        while(rs.next())
                                list.add(rs.getString(1));
                        req.getSession().setAttribute("GwlPlates",list);
                        //con.close();
                    }catch(Exception e){System.out.println(e);}
                    finally{
                                try{
                                        if(con!=null) con.close();
                                   }catch(Exception e){System.out.println(e);}
                                  }
```

```
                 return am.findForward("Gwlupload");
         }
 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/RetrieveNormalizedPlatesDataAction.java

```
/**
 *
 */
package org.icrisat.lims.sampletracking.dilution;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author psrikalyani
 *
 */
public class RetrieveNormalizedPlatesDataAction extends Action{

         @Override
         public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                 // TODO Auto-generated method stub
                 HttpSession session=req.getSession(true);
                 if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                 }

                 Connection con=null;
                 Statement st=null;
                 ResultSet rs=null;

```

```
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        String values="";
                        String pid="";
                        String plates="";
                        String exp_name="";
                        String test[] = req.getParameterValues("NormPlates");
                        String runplateid=req.getParameter("pooledPlateId");
                        for(int i=0;i<test.length;i++){
                                pid=pid+"'" +test[i]+"'" +",";
                                //plates=plates+test[i]+",";
                        }
                        String previousPlate="";
                        rs=st.executeQuery("select dna_extraction_well_controls.dna_plate_id,dna_extraction_well_c
ontrols.genotype_id,dna_extraction_well_controls.lims_id,dna_extraction_well_controls.row_id,dna_extraction_well_controls.
col_id,dna_extraction_well_controls.dna_plate_controls,dna_extraction_exptdetails.experiment_name,DNA_Dilution.normalized_
plate_id from DNA_Dilution inner join dna_extraction_exptdetails on dna_extraction_exptdetails.dna_plate_id=DNA_Dilution.D
NA_Plate_Id inner join dna_extraction_well_controls on dna_extraction_exptdetails.dna_plate_id=dna_extraction_well_control
s.dna_plate_id where DNA_Dilution.normalized_plate_id in ("+ pid.substring(0,pid.length()-1) +") order by dna_extraction_w
ell_controls.dna_plate_id,Row_Id,Col_Id");
                        while(rs.next()){
                                values = values + "~~!!"+rs.getString(1) + "~''!" +rs.getString(4) + "~''!" + rs.g
etInt(5) + "~''!" + rs.getString(2)+ "~''!" + rs.getString(3)+ "~''!" + rs.getString(6)+"''~!";
                                if(!(rs.getString(1).equals(previousPlate))){
                                        plates=plates+rs.getString(8)+",";

                                }
                                previousPlate=rs.getString(1);
                                exp_name=rs.getString(7);
                        }
                        //System.out.println(exp_name);
                        session.setAttribute("platesData", values);
                        session.setAttribute("platesCount", test.length+"");
                        session.setAttribute("plates", plates);
                        session.setAttribute("pplate", runplateid);
                        session.setAttribute("exp",exp_name);
                }catch(Exception e){System.out.println(e);}
                   finally{
                              try{
                                      if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                return am.findForward("platesData");
        }

```

```

}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/EditDilutionAction.java

```
/*
 * Created on Sep 26, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.dilution;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class EditDilutionAction extends Action {
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                //
```

```
                  Connection con=null;
                  Statement st=null;
                  ResultSet rs=null;
                  String plate_id="";
                  Vector v=new Vector();

                  try{
                          /*String realpath=(String)session.getAttribute("realpath");
                          con=new SQLDAOFactory().createCon(realpath);*/
                          ServletContext context = servlet.getServletContext();
                          DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                          con=dataSource.getConnection();
                          st=con.createStatement();
                          rs=st.executeQuery("SELECT DNA_Plate_Id,DNA_Quantification_Protocol FROM DNA_Quantificatio
n_Tracking where  upsc_id = '" +req.getSession().getAttribute("upsc")+ "' and DNA_Plate_Id in(select DNA_Plate_Id from DNA
_Dilution)");
                          while(rs.next())
                          {
                                  plate_id=rs.getString(1)+ ':' + rs.getString(2);
                           v.add(plate_id);
                          }
                          //con.close();
                  }catch(Exception e){System.out.println(e);}
                  finally{
                        try{
                                  if(con!=null) con.close();
                           }catch(Exception e){System.out.println(e);}
                          }
                  req.getSession().setAttribute("EditDilutionvector",v);
                  return am.findForward("EditDilution");
          }
  }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/LoadGwlFileValues.java

```
 1  /*
 2   * Created on Dec 13, 2005
 3   *
 4   * TODO To change the template for this generated file go to
 5   * Window - Preferences - Java - Code Style - Code Templates
 6   */
 7  package org.icrisat.lims.sampletracking.dilution;
 8
 9  import java.sql.Connection;
10  import java.sql.ResultSet;
11  import java.sql.Statement;
12  import java.util.ArrayList;
13
```

```
import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class LoadGwlFileValues extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                //
                Connection con=null;
                Statement stmt=null;
                ResultSet rs=null;
                ArrayList list=new ArrayList();
                try{
                        /*String realpath=(String)session.getAttribute("realpath");
                        con=new SQLDAOFactory().createCon(realpath);*/
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        stmt=con.createStatement();
                        rs=stmt.executeQuery("SELECT DISTINCT DNA_Plate_Id FROM DNA_Extraction_Tracking WHERE(DNA_
Plate_Id NOT IN(SELECT DNA_Plate_Id FROM DNA_Quantification_Tracking)) AND (DNA_Plate_Id NOT IN(SELECT DNA_Plate_Id FROM L
IMS_GwlFiles))and upsc_id='"+req.getSession().getAttribute("upsc")+"'");
                        while(rs.next())
                                list.add(rs.getString(1));
                        req.getSession().setAttribute("GwlPlates",list);
                        //con.close();
                    }catch(Exception e){System.out.println(e);}
```

```
                    finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                  return am.findForward("Gwlupload");
         }
 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/RetrieveNormalizedPlatesAction.java

```
/**
 * Retrieve Normallized DNA Plates to create DNA Pooled Plates
 */
package org.icrisat.lims.sampletracking.dilution;

import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author psrikalyani
 *
 */

public class RetrieveNormalizedPlatesAction extends Action{

         @Override
         public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                  // TODO Auto-generated method stub
                  HttpSession session=req.getSession(true);
                  if((String)session.getAttribute("user")==null){
                           String msg="logout";
```

```
37                          return am.findForward(msg);
38                  }
39
40                  Connection con=null;
41                  Statement st=null;
42                  ResultSet rs=null;
43                  Statement stmt=null;
44                  ResultSet rspool=null;
45                  ArrayList platesList = new ArrayList();
46                  String upsc="";
47                  String pooling="";
48                  try{
49                          ServletContext context = servlet.getServletContext();
50                          DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
51                          con=dataSource.getConnection();
52                          st=con.createStatement();
53                          stmt=con.createStatement();
54                          upsc=(String)session.getAttribute("upsc");
55                          rspool=stmt.executeQuery("select dna_pooling from user_psc where upsc_id='"+upsc+"'");
56                          while(rspool.next()){
57                                  pooling=rspool.getString(1);
58                          }
59                          session.setAttribute("sesPooling", pooling);
60                          //System.out.println("select dna_plate_id from dna_dilution where upsc_id='"+req.getSessio
n().getAttribute("upsc")+"'");
61                          //rs=st.executeQuery("select dna_plate_id from dna_dilution where upsc_id='"+req.getSessio
n().getAttribute("upsc")+"'");
62                          //System.out.println("select normalized_plate_id from dna_dilution where upsc_id='"+req.ge
tSession().getAttribute("upsc")+"'");
63                          rs=st.executeQuery("select normalized_plate_id from dna_dilution where upsc_id='"+upsc+"'"
);
64                          //platesList.add(o);
65                          while(rs.next()){
66                                  if(rs.getString(1)!=null){
67                                          platesList.add(rs.getString(1));
68                                  }
69                          }
70                          session.setAttribute("plates",platesList);
71
72                          if(req.getParameter("ChkPlateids")!=null){
73                                  //*********Ajax Plain Text Response ***********//
74                                  if(req.getParameter("feild")!=null){
75                                          PrintWriter writer=res.getWriter();
76                                          res.setContentType("text/xml");
77                                          res.setHeader("Cache-Control", "no-cache");
78                                          Statement stmt1=con.createStatement();
79                                          ResultSet rs1=null;
80                                          rs1=stmt1.executeQuery("select pooled_plate_id from dna_pooling where lowe
```

```
r(pooled_plate_id)='" + req.getParameter("ChkPlateids").toLowerCase() + "'");
                                        if(rs1.next()){
                                                writer.println("1");
                                                return null;
                                        }
                                }
                        }

                }catch(Exception e){System.out.println(e);}
                   finally{
                                try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                return am.findForward("plates");
        }


}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/NewDilutionActionForm2.java

```
/*
 * Created on Jul 18, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.dilution;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
import org.apache.struts.validator.ValidatorForm;

public class NewDilutionActionForm2 extends ValidatorForm{
        private double conc;
        private int totvol;
        private String reagent,pid,remarks,newrgnt,npname;
        public double getConc()
        {
                return conc;
        }
        public void setConc(double conc)
        {
```

```
                this.conc=conc;
        }
        public int getTotvol()
        {
                return totvol;
        }
        public void setTotvol(int totvol)
        {
                this.totvol=totvol;
        }
        public String getReagent()
        {
                return reagent;
        }
        public void setReagent(String reagent)
        {
                this.reagent=reagent;
        }
        public void setRemarks(String remarks)
        {
                this.remarks=remarks;
        }
        public String getRemarks()
        {
                return remarks;
        }


        /**
         * @return Returns the newrgnt.
         */
        public String getNewrgnt() {
                return newrgnt;
        }
        /**
         * @param newrgnt The newrgnt to set.
         */
        public void setNewrgnt(String newrgnt) {
                this.newrgnt = newrgnt;
        }
        /**
         * @return Returns the pid.
         */
        public String getPid() {
                return pid;
        }
        /**
         * @param pid The pid to set.
```

```
         */
        public void setPid(String pid) {
                this.pid = pid;
        }
        public String getNpname() {
                return npname;
        }
        public void setNpname(String npname) {
                this.npname = npname;
        }

}./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/DNACalcBean.java


/*
 * Created on Jul 27, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.dilution;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class DNACalcBean {
 double estdconc,dnavol,reagentvol,totvol,conc;
 String style,reagent,remarks,pltctrlstyle;
 String extid;
 String wellid;
 int qtid;
/**
 * @return Returns the qtid.
 */
public int getQtid() {
        return qtid;
}
/**
 * @param qtid The qtid to set.
 */
public void setQtid(int qtid) {
        this.qtid = qtid;
}
 public String getExtid()
 {
```

```
        return extid;
 }
 public void setExtid(String id)
 {
        extid=id;
 }

/**
 * @return Returns the style.
 */
public String getStyle() {
        return style;
}
/**
 * @param style The style to set.
 */
public void setStyle(String style) {
        this.style = style;
}
/**
 * @param conc The conc to set.
 */
public void setConc(double conc) {
        this.conc = conc;
}
/**
 * @param dnavol The dnavol to set.
 */
public void setDnavol(double dnavol) {
        this.dnavol = dnavol;
}
/**
 * @param estdconc The estdconc to set.
 */
public void setEstdconc(double estdconc) {
        this.estdconc = estdconc;
}
/**
 * @param reagentvol The reagentvol to set.
 */
public void setReagentvol(double reagentvol) {
        this.reagentvol = reagentvol;
}
/**
 * @param totvol The totvol to set.
 */
public void setTotvol(double totvol) {
        this.totvol = totvol;
```

```
 83  }
 84  public double getEstdconc()
 85  {
 86          return estdconc;
 87  }
 88  public double getDnavol()
 89  {
 90          return dnavol;
 91  }
 92  public double getReagentvol()
 93  {
 94          return reagentvol;
 95  }
 96  public double getTotvol()
 97  {
 98          return totvol;
 99  }
100  public double getConc()
101  {
102          return conc;
103  }
104
105  /**
106   * @return Returns the reagent.
107   */
108  public String getReagent() {
109          return reagent;
110  }
111  /**
112   * @param reagent The reagent to set.
113   */
114  public void setReagent(String reagent) {
115          this.reagent = reagent;
116  }
117  /**
118   * @return Returns the remarks.
119   */
120  public String getRemarks() {
121          return remarks;
122  }
123  /**
124   * @param remarks The remarks to set.
125   */
126  public void setRemarks(String remarks) {
127          this.remarks = remarks;
128  }
129  /**
130   * @return Returns the pltctrlstyle.
```

```
 */
public String getPltctrlstyle() {
        return pltctrlstyle;
}
/**
 * @param pltctrlstyle The pltctrlstyle to set.
 */
public void setPltctrlstyle(String pltctrlstyle) {
        this.pltctrlstyle = pltctrlstyle;
}
/**
 * @return Returns the wellid.
 */
public String getWellid() {
        return wellid;
}
/**
 * @param wellid The wellid to set.
 */
public void setWellid(String wellid) {
        this.wellid = wellid;
}
}

```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/DilutionInsertAction.java

```

package org.icrisat.lims.sampletracking.dilution;

import java.io.BufferedReader;
import java.io.BufferedWriter;
import java.io.File;
import java.io.FileReader;
import java.io.FileWriter;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.sql.Timestamp;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
```

```
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

import org.icrisat.lims.common.RoundFloatValuesAction;

/**
 * @author psrikalyani
 *      Sep 2, 2005
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class DilutionInsertAction extends Action{
        public ActionForward execute(ActionMapping am,ActionForm af,HttpServletRequest req,HttpServletResponse res
)
        {
                //              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                Statement stmt2=null;

                String user=(String)req.getSession().getAttribute("user");
                String study=req.getSession().getAttribute("study").toString();
                String crop=req.getSession().getAttribute("crop").toString();
                String proj = req.getSession().getAttribute("project").toString();
                String diltype=(String)req.getSession().getAttribute("diltype");

                double totvol=Double.parseDouble(session.getAttribute("totvol").toString());
                double conc=Double.parseDouble(session.getAttribute("conc").toString());


                DilutionBean db=(DilutionBean)session.getAttribute("dilutionbean");
                String plid=db.getPlid();
                String protocol=db.getProtocol();
            String reagent=(String)session.getAttribute("reagent");
            String param=(String)session.getAttribute("param");
            String normalized_plate_id="";
            String pooling=(String)session.getAttribute("pooling");
            //for tilling projects entering the normalized plate id
            if(pooling.equalsIgnoreCase("yes")){
                normalized_plate_id=(String)session.getAttribute("normalized_plate_id");
```

```
            }
                String remarks=req.getParameter("remarks");
                RoundFloatValuesAction round=new RoundFloatValuesAction();
            String querystr="";
                CalcBean cb=(CalcBean)session.getAttribute("calcbean");
                Vector v=cb.getVect();

                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        File tecanfile=null;
                        BufferedWriter bw=null;
                        BufferedReader br=null;
                        File csvfile=null;
                        String folderName="";
                        folderName=study+"_"+crop+"_"+user;
                        String filename="";
                        String fname=proj+"_"+plid+"_Tecaninput.gwl";
                        String fname1=session.getServletContext().getRealPath("//")+"/"+"GWLFiles";
                        if(!new File(fname1).exists())
                        new File(fname1).mkdir();
                        String fname2= fname1+"/"+folderName;

                if(!new File(fname2).exists())
                new File(fname2).mkdir();
                if(protocol.equalsIgnoreCase("Fluorescence")){
                        tecanfile=new File(fname2+"/"+fname);
                        tecanfile.createNewFile();
                        filename=fname2+"/"+fname;
                        session.setAttribute("tecanfilepath",folderName);
                        session.setAttribute("tecanfilename",fname);
                        bw=new BufferedWriter(new FileWriter(tecanfile));
                        String filepathcsv=session.getServletContext().getRealPath("//")+"/jsp/dilution/Fluorescen
ce_Template.csv";
                        csvfile=new File(filepathcsv);
                        br=new BufferedReader(new FileReader(csvfile));
                }
                for(int i=0;i<=v.indexOf(v.lastElement());i++){
                        DNACalcBean dcb=(DNACalcBean)v.elementAt(i);
                        double estdconc=dcb.getEstdconc();
                        double dnavol=dcb.getDnavol();
                        double reagentvol=dcb.getReagentvol();
                        String extid=dcb.getExtid();
                        stmt2=con.createStatement();

                  if(protocol.equalsIgnoreCase("Fluorescence"))
                        {
```

```
                                    try{
                                              String s;
                                              for(int j=1;j<=8;j++)
                                             {
                                                s=br.readLine();
                                                    s=s.replace(",",";");
                                                    if(dnavol<0||dnavol>totvol)
                                                {
                                                    if(s.indexOf("#")>0)
                                                            s=s.replace("#","0");
                                                    else if(s.indexOf("@")>0)
                                                            s=s.replace("@","0");
                                                    else if(s.indexOf("~")>0)
                                                            s=s.replace("~","0");
                                                }
                                                else
                                                {
                                                    if(s.indexOf("#")>0)
                                                            s=s.replace("#",String.valueOf(round.roundTwo(totvol-dnavo
l)));
                                                    else if(s.indexOf("@")>0)
                                                            s=s.replace("@",String.valueOf(dnavol));
                                                    else if(s.indexOf("~")>0)
                                                            s=s.replace("~",String.valueOf(totvol));
                                                }
                                                bw.write(s+";");
                                                bw.newLine();
                                          }
                                              s=br.readLine();
                                              bw.write(s.replace(",",";"));
                                              bw.newLine();
                                 }catch(Exception e){
                                    e.printStackTrace();
                                    System.out.println(e.toString());}
                            }

                 }
                String set="set1";
                        if(diltype.equalsIgnoreCase("new")){
                            st=con.createStatement();
                            rs=st.executeQuery("select DNA_Quantification_Set from DNA_Quantification_Tracking where D
NA_Plate_Id='"+plid+"'");
                            rs.next();
                            querystr="INSERT INTO DNA_Dilution(DNA_Plate_Id,DNA_Quantification_Set,Dilution_Concentrat
ion,Dilution_Reagent,Total_Volume,Remarks,upsc_id,Date_Of_Creation,normalized_plate_id) VALUES ('"+plid+"','"+rs.getString
(1)+"','"+conc+","'"+reagent+"','"+totvol+","'"+remarks+"','"+req.getSession().getAttribute("upsc")+"','"+new Timestamp(System
.currentTimeMillis())+"','"+normalized_plate_id+"')";

```

```
                }else if(diltype.equalsIgnoreCase("edit"))
                        querystr="UPDATE DNA_Dilution SET Dilution_Concentration="+conc+",Dilution_Reagent='"+reag
ent+"',Total_Volume="+totvol+",Remarks='"+remarks+"',Date_Of_Correction='"+new Timestamp(System.currentTimeMillis())+"',no
rmalized_plate_id ='"+normalized_plate_id+"' where DNA_Plate_Id='"+plid+"' and upsc_id='" +req.getSession().getAttribute("
upsc")+ "'";
                try{
                        int insert_count=stmt2.executeUpdate(querystr);
                        bw.close();
                        }catch(Exception e){System.out.println(e.toString());}
                        //con.close();
                }catch(Exception e){System.out.println(e);}
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }

            return am.findForward("fileupload");
         }
 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/DilutionBean.java

```
/*
 * Created on Jul 22, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.dilution;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class DilutionBean {
        String plid;
        String protocol;
        String locid;
        public void setPlid(String plid)
        {
                this.plid=plid;
        }
        public String getPlid()
        {
                return plid;
```

```
        }
        public void setProtocol(String protocol)
        {
                this.protocol=protocol;
        }
        public String getProtocol()
        {
                return protocol;
        }
    public void setLocid(String id)
    {
        locid=id;
    }
    public String getLocid()
    {
        return locid;
    }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/DilutionPlateAction.java

```
/*
 * Created on Jul 18, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.dilution;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
import java.io.File;
import java.io.FileOutputStream;
import java.io.OutputStream;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.Date;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
```

```
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

import org.icrisat.lims.common.RoundFloatValuesAction;

import com.Ostermiller.util.ExcelCSVPrinter;

public class DilutionPlateAction extends Action{
        public ActionForward execute(ActionMapping am,
                                             ActionForm af,
                                                                HttpServletRequest req,
                                                                HttpServletResponse res)
        throws Exception
        {
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null)
                {
                    String msg="logout";
                        return am.findForward(msg);
                }

                double totvol=Double.parseDouble(req.getParameter("totvol"));
                double conc=Double.parseDouble(req.getParameter("conc"));
                double dnavol=0,estdconc=0,reagentvol=0;
                String stylestr= "";
                Connection con=null;
            Statement stmt=null;

            ResultSet result=null;
            Vector v=new Vector();

                DilutionBean db=(DilutionBean)req.getSession().getAttribute("dilutionbean");
                CalcBean cb=new CalcBean();
                String pid=db.getPlid();
                //System.out.println("pid:  "+pid);
                String protocol=db.getProtocol();
                String reagent="";
                if(req.getParameter("reagent").equalsIgnoreCase("new"))
                        reagent=req.getParameter("newrgnt");
                else
                        reagent=req.getParameter("reagent");
```

```
                req.getSession().setAttribute("reagent",reagent);
                //for tilling projects
                String normalized_plate_id="";
                normalized_plate_id=req.getParameter("npname");
                req.getSession().setAttribute("normalized_plate_id",normalized_plate_id);

                String remarks=req.getParameter("remarks");
                RoundFloatValuesAction round=new RoundFloatValuesAction();
                String user=(String)session.getAttribute("upsc");
                session.setAttribute("dilpid",pid+"_"+req.getParameter("conc"));
                String pooling=req.getParameter("pooling");
                session.setAttribute("pooling", pooling);
        try{
                /*String realpath=(String)session.getAttribute("realpath");
                con=new SQLDAOFactory().createCon(realpath);*/
                ServletContext context = servlet.getServletContext();
                DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                con=dataSource.getConnection();
                stmt=con.createStatement();

                Statement concst=null;
                ResultSet conrs=null;
                Statement pltctrlst=null;
                ResultSet pltctrlrs=null;
                String filepath="";
                String wellId="";
                String filename=session.getAttribute("user")+"_"+pid+"_Dilution_Calculations.csv";
                //filepath=session.getServletContext().getRealPath("//")+"\\"+"Display Files/"+filename;
                String filepath1=session.getServletContext().getRealPath("//")+"//"+"DisplayFiles";
                if(!new File(filepath1).exists())
                new File(filepath1).mkdir();
                filepath=session.getServletContext().getRealPath("//")+"//"+"DisplayFiles/"+filename;
                session.setAttribute("filename","DisplayFiles/"+filename+"?"+new Date()+".csv");

                File file=new File(filepath);
            file.createNewFile();
        OutputStream o=new FileOutputStream(file);
                ExcelCSVPrinter p  = new ExcelCSVPrinter(o);

                p.writeln(new String[]{"GenotypeId","Well-Id","Estimated Concentration(ng/uL)","Total Volume(uL)",
"Concentration aiming for(ng/uL)","Volume of DNA to be added(uL)","Volume of Dilution Reagent to be added(uL)"});

                //result=stmt.executeQuery("SELECT Genotype_Id,LIMS_Id FROM Genotype_Master WHERE(LIMS_Id IN(SELEC
T LIMS_Id FROM DNA_Extraction_Well WHERE DNA_Plate_Id LIKE '"+pid+"'))");
                result=stmt.executeQuery("SELECT Genotype_Master.Genotype_Id,Genotype_Master.LIMS_Id,DNA_Extractio
n_Well.Row_Id, DNA_Extraction_Well.Col_Id FROM Genotype_Master INNER JOIN DNA_Extraction_Well ON DNA_Extraction_Well.LIMS_
Id = Genotype_Master.LIMS_Id WHERE (DNA_Extraction_Well.DNA_Plate_Id = '"+pid+"') order by DNA_Extraction_Well.Col_Id, DNA
_Extraction_Well.Row_Id");
```

```
                concst=con.createStatement();
                conrs=concst.executeQuery("select DNA_Concentration from DNA_Quantification_Trackingdetails where
DNA_Plate_Id = '"+pid+"' order by Col_Id,Row_Id");

                pltctrlst=con.createStatement();
                pltctrlrs=pltctrlst.executeQuery("SELECT Genotype_Id,LIMS_Id FROM DNA_Extraction_Well_Controls WHE
RE DNA_Plate_Id ='"+pid+"' and DNA_Plate_Controls is not null");

                String[] pltctrlarr=new String[20];
                String[] limsidarr=new String[20];
                int k=0;
                while(pltctrlrs.next())
                {
                        pltctrlarr[k]=pltctrlrs.getString(1);
                        limsidarr[k++]=pltctrlrs.getString(2);
                }
                //int i=0;
                while(result.next())
                {
                        conrs.next();
                        //System.out.println(conrs.getString(1));
                        DNACalcBean dcb=new DNACalcBean();
                        for(k=0;k<pltctrlarr.length;k++)
                                if(result.getString(1).equalsIgnoreCase(pltctrlarr[k])&& result.getString(2).equal
sIgnoreCase(limsidarr[k]))
                            {
                                        dcb.setPltctrlstyle("font-size:9px;font-weight:bold;color:white;background
-color:blue");
                                        break;
                                }
                                else
                                        dcb.setPltctrlstyle("font-size:9px;font-weight:bold;color:black;background
-color:white");
                        if(Integer.parseInt(result.getString(4))<10)
                                wellId=result.getString(3)+"0"+result.getString(4);
                        else
                                wellId=result.getString(3)+result.getString(4);


                        dnavol =round.roundTwo((conc*totvol)/conrs.getFloat(1));
                        estdconc=round.roundTwo(conrs.getFloat(1));
                        //reagentvol=round.roundTwo(100-dnavol);
                        reagentvol=round.roundTwo(totvol-dnavol);
                        session.setAttribute("totvol", new Double(totvol));
                        session.setAttribute("conc", new Double(conc));

                        dcb.setExtid(result.getString(1));
                        //dcb.setWellid(result.getString(3)+result.getString(4));
```

```
                        dcb.setWellid(wellId);
                        dcb.setEstdconc(estdconc);
                        dcb.setDnavol(dnavol);
                        dcb.setReagentvol(reagentvol);
                        dcb.setConc(conc);
                        dcb.setTotvol(totvol);
                        if(dnavol<0||dnavol>totvol)
                                stylestr = "font-size:9px;font-weight:bold;color:black;background-color:#FFFE9D;fo
nt-weight:bold;";
                                //stylestr = "font-size:9px;font-weight:bold;color:black;background-color:yellow;f
ont-weight:bold;";
                        else
                                stylestr = "font-size:9px;font-weight:bold;color:black;background-color:white;font
-weight:bold;";
                        dcb.setStyle(stylestr);
                        p.writeln(new String[]{result.getString(1),result.getString(3)+result.getString(4),String.
valueOf(estdconc),String.valueOf(totvol),String.valueOf(conc),String.valueOf(dnavol),String.valueOf(reagentvol)});
                        v.add(dcb);
                }
                  //con.close();
          }catch(Exception e){//System.out.println(e);
          session.setAttribute("cal",e);}
          finally{
                try{
                        if(con!=null) con.close();
                   }catch(Exception e){System.out.println(e);}
                  }
          cb.setVect(v);
          session.setAttribute("calcbean",cb);
          return am.findForward("DilutionCalc");
          }
  }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/dilution/DilutionParametersAction.java

```
/*
 * Created on Jul 18, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.dilution;

```

```
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */


import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.RoundFloatValuesAction;


public class DilutionParametersAction extends Action{
public ActionForward execute(ActionMapping am,ActionForm af,HttpServletRequest req,HttpServletResponse res)
{
//      user identification
        HttpSession session=req.getSession(true);
        if((String)session.getAttribute("user")==null){

                 String msg="logout";
                return am.findForward(msg);
        }
        //
           String plate_id="",plid="",protocol="",dilution_type="";
           Connection con=null;
           Statement st=null;
           ResultSet rs=null;
           try{
                   if(req.getParameter("ChkPlateids")!=null){
                                //*********Ajax Plain Text Response ***********//
                                if(req.getParameter("feild")!=null){
                                        ServletContext context = servlet.getServletContext();
```

```
                                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOUR
CE_KEY);
                                        con=dataSource.getConnection();
                                        st=con.createStatement();
                                        plate_id=(String)session.getAttribute("plate_id");
                                        rs=st.executeQuery("select normalized_plate_id from DNA_Dilution where low
er(normalized_plate_id) ='"+req.getParameter("ChkPlateids").toLowerCase()+"' and DNA_Plate_Id !='"+plate_id.substring(0,pl
ate_id.indexOf(':'))+"'");
                                        PrintWriter writer=res.getWriter();
                                        res.setContentType("text/xml");
                                        res.setHeader("Cache-Control", "no-cache");
                                        dilution_type=(String)session.getAttribute("dilution_type");
                                        if(rs.next()){
                                                writer.println("1");
                                                return null;
                                        }
                                }
                        }else{
                                plate_id=req.getParameter("pid");
                                dilution_type=req.getParameter("diltype");
                                session.setAttribute("dilution_type", dilution_type) ;
                                session.setAttribute("plate_id", plate_id) ;
                        }
            }catch(Exception e){
                    e.printStackTrace();
            } finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }

            plid=plate_id.substring(0,plate_id.indexOf(':'));
            protocol=plate_id.substring(plate_id.indexOf(':')+1);
            DilutionBean db=new DilutionBean();
            db.setPlid(plid);
            db.setProtocol(protocol);
            RoundFloatValuesAction round=new RoundFloatValuesAction();

          //  System.out.println("in outside edit type   ::"+plate_id);
          if(dilution_type.equalsIgnoreCase("edit")){
                 // System.out.println("in edit type");
            NewDilutionActionForm2 bean=new NewDilutionActionForm2();


                    try{
                          ServletContext context = servlet.getServletContext();
                          DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                          con=dataSource.getConnection();
```

```
                            st=con.createStatement();
                            rs=st.executeQuery("select Dilution_Concentration,Dilution_Reagent,Total_Volume,Remarks
,normalized_plate_id from DNA_Dilution where DNA_Plate_Id='"+plid+"' and upsc_id='"+req.getSession().getAttribute("upsc")+
"'");

                            if(rs.next()){
                                   //bean.setConc(round.roundTwo(rs.getFloat(1)));
                                   bean.setConc(rs.getDouble(1));

                                   if(!rs.getString(2).equalsIgnoreCase("TE") && !rs.getString(2).equalsIgnoreCase(
"TE0.01") && !rs.getString(2).equalsIgnoreCase("sterile distilled water"))
                                   {
                                         bean.setReagent("New Reagent");
                                         bean.setNewrgnt(rs.getString(2));
                                   }
                                   else{
                                    bean.setReagent(rs.getString(2));
                                    bean.setNewrgnt("");
                                       }

                                   bean.setTotvol(rs.getInt(3));
                               bean.setRemarks(rs.getString(4));
                               bean.setNpname(rs.getString(5));
                            }
                         // con.close();
                      }catch(Exception e){System.out.println(e.toString());}
                   finally{
                       try{
                                 if(con!=null) con.close();
                          }catch(Exception e){System.out.println(e);}
                         }
                   req.getSession().setAttribute("DBean",bean);
          }
            req.getSession().setAttribute("diltype",dilution_type);
            req.getSession().setAttribute("dilutionbean",db);

         return am.findForward("/NewDilution2");
 }
 }
         ./WEB-INF/src/org/icrisat/lims/sampletracking/pcr/PCRExcelUplForm.java


package org.icrisat.lims.sampletracking.pcr;


import org.apache.struts.upload.FormFile;
import java.util.HashMap;
import java.util.Map;
```

```
import org.apache.struts.action.ActionForm;
/**
 *
 *@author GMeenakshi
 *Dec 19, 2008
 **/
public class PCRExcelUplForm{

                private  FormFile excelName;
                private final Map values = new HashMap();
                private String ExptName;
            private String NoOfPlates;



            private String selPlates;
            private String plateTubeId;
            private String optQuantMeth;
            private String hPltType;
            private String uploadsheet;
            private String plate;
            private String ptype;



                public String getHPltType() {
                        return hPltType;
                }

                public void setHPltType(String pltType) {
                        hPltType = pltType;
                }

                public String getOptQuantMeth() {
                        return optQuantMeth;
                }

                public void setOptQuantMeth(String optQuantMeth) {
                        this.optQuantMeth = optQuantMeth;
                }

                public String getPlate() {
                        return plate;
                }

                public void setPlate(String plate) {
                        this.plate = plate;
                }
```

```
55
56                  public String getPlateTubeId() {
57                          return plateTubeId;
58                  }
59
60                  public void setPlateTubeId(String plateTubeId) {
61                          this.plateTubeId = plateTubeId;
62                  }
63
64                  public String getPtype() {
65                          return ptype;
66                  }
67
68                  public void setPtype(String ptype) {
69                          this.ptype = ptype;
70                  }
71
72                  public String getSelPlates() {
73                          return selPlates;
74                  }
75
76                  public void setSelPlates(String selPlates) {
77                          this.selPlates = selPlates;
78                  }
79
80                  public String getUploadsheet() {
81                          return uploadsheet;
82                  }
83
84                  public void setUploadsheet(String uploadsheet) {
85                          this.uploadsheet = uploadsheet;
86                  }
87
88                  public String getExptName() {
89                          return ExptName;
90                  }
91
92                  public void setExptName(String exptName) {
93                          ExptName = exptName;
94                  }
95
96                  public String getNoOfPlates() {
97                          return NoOfPlates;
98                  }
99
100                 public void setNoOfPlates(String noOfPlates) {
101                         NoOfPlates = noOfPlates;
102                 }
```

```

                //to retrieve PCR plate Id
            public void setValue(String key, Object value) {
                values.put(key, value);
            }

            public Object getValue(String key) {
                return values.get(key);
            }
            //to retrieve PCRPlate File path
                public FormFile getExcelName() {
                        return excelName;
                }

                public void setExcelName(FormFile excelName) {
                        this.excelName = excelName;
                }




 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/pcr/PCRInsertAction.java

```

/*
 * Created on Sep 6, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.pcr;


import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
import java.sql.Timestamp;
import java.util.ArrayList;
import java.util.Calendar;
import java.util.GregorianCalendar;
import javax.sql.DataSource;


import javax.servlet.http.HttpServletRequest;
```

```
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.servlet.ServletContext;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.DynaActionForm;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.startup.details.GenotypesAction;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class PCRInsertAction extends Action{
        public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse
res)throws Exception{

                HttpSession session = req.getSession(true);
//              user identification
                DynaActionForm lf=(DynaActionForm)form;
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return map.findForward(msg);
                }
                String MaxId="";
                int parts;
                String strPlatetype=(String)session.getAttribute("PltType");
                String Platetype=(String)session.getAttribute("optQ");
                Connection con=null;
                try{
                        ServletContext context = servlet.getServletContext();
                DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                        String message="";
                        int plateCount=0;
                        if(Platetype.equals("upload")){
                                if(Integer.parseInt(strPlatetype)==96)
                                        parts=96;
                                else
                                        parts=4;
                                //String genotypes=session.getAttribute("genotypes").toString();
                                String genotypes=session.getAttribute("genoRowCol").toString();
```

```
                                    String experimentName=req.getSession().getAttribute("ExptName").toString();
                                    String upsc=session.getAttribute("upsc").toString();
                                    ArrayList list=new ArrayList();
                                    //timestamp code
                                    java.util.Date utilDate=new java.util.Date(System.currentTimeMillis());
                                    Timestamp sqldate=new Timestamp(utilDate.getTime());
                                    Timestamp ts=new Timestamp(sqldate.getTime());

                                    if(genotypes.equals("")){
                                            message="GenotypesNotUploaded";
                                    }else{
                                            GenotypesAction ga=new GenotypesAction();
                                            Statement stmtMaxid=con.createStatement();
                                            Statement expt=con.createStatement();
                                            ResultSet rsMaxid=null;
                                            Statement ps2=con.createStatement();
                                            Statement ps=con.createStatement();
                                            //st=con.createStatement();
                                            Statement ps1=null;
                                            String checkId="";
                                            String IdExists="";
                                            int countOfGenotypes=0;
                                            GregorianCalendar calendar = new GregorianCalendar();
                                            int intYear=calendar.get(Calendar.YEAR);
                                            String strYear=String.valueOf(intYear);

                                            String ExperimentName=strYear+"_"+session.getAttribute("study")+"_"+experi
mentName+"~~~PCR";

                                            String data[]=genotypes.split("&;;&");

                                            ps1=con.createStatement();
                                            for(int m=0;m<data.length;m++){
                                                    plateCount=plateCount+1;
                                                     String[] vals=data[m].split("!~~~~~!");

                                                     String[] GenotypesDetails=vals[0].split("‘!~!‘");
                                                     ps1.executeUpdate("insert into PCR_Tracking values(‘"+vals[1]+"’,
’"+strPlatetype+"’,’"+session.getAttribute("upsc").toString()+"’,’"+new Timestamp(System.currentTimeMillis())+"’,"+null+",
"+parts+")");
                                                     for(int i=0;i<GenotypesDetails.length;i++){
                                                             IdExists="no";
                                                             String[] Geno=GenotypesDetails[i].split("‘~~‘");
                                                             rsMaxid=stmtMaxid.executeQuery("select max(LIMS_Id)as lid
 from Genotype_Master");
                                                             while(rsMaxid.next()){
                                                                     MaxId=rsMaxid.getString(1);
                                                             }
```

```
                                                                //if(MaxId.equals("")||MaxId.equals(null)){
                                                                if(MaxId==null || MaxId.equals("")){

                                                                        MaxId=strYear+"_000000";
                                                                }else if(Integer.parseInt(MaxId.substring(0,4))!=intYear)
{
                                                                        MaxId=strYear +"_000000";
                                                                }
                                                                String lims_id=ga.getLimsid(Long.parseLong(MaxId.substrin
g(5)));
                                                                //System.out.println("checkId="+checkId);
                                                                if(!(m==0 && i==0)){
                                                                        String[]countGenos=checkId.split("'~~'");
                                                                        for(int l=0;l<countGenos.length;l++){
                                                                                String[]CheckGeno=countGenos[l].split("~~
");
                                                                                if(Geno[0].equals(CheckGeno[0])){
                                                                                        lims_id=CheckGeno[1];
                                                                                        IdExists="yes";
                                                                                        break;
                                                                                }
                                                                        }

                                                                }
                                                                checkId=checkId+Geno[0]+"~~"+lims_id+"'~~'";
                                                                if(!(Geno[0].equals("blank"))){
                                                                        if (IdExists.equals("no")){
                                                                                countOfGenotypes=countOfGenotypes+1;
                                                                               //ps2.executeUpdate("insert into genotype_master v
alues('"+lims_id+"','"+Geno[0]+"','"+ strYear+"_"+session.getAttribute("study")+"_"+lf.get("ExptName").toString()+"','"+up
sc+"','"+ new Timestamp(System.currentTimeMillis())+"","+ null+")");
                                                                        ps2.executeUpdate("insert into genotype_master va
lues('"+lims_id+"','"+Geno[0]+"','"+ExperimentName+"','"+upsc+"','"+ new Timestamp(System.currentTimeMillis())+"","+ null+
")");
                                                                        }
                                                                        ps.executeUpdate("insert into pcr_tracking_well v
alues('"+vals[1]+"','"+lims_id+"","+Integer.parseInt(Geno[2])+","'+Geno[1]+"')");
                                                                }
                                                        }
                                                        list.add(vals[1]);
                                                        req.getSession().setAttribute("list",list);
                                                }
                                                //expt.executeUpdate("insert into experiment_master values('"+ExperimentNa
me+"','"+""+"','"+""+"','"+strYear+"','"+countOfGenotypes+"','"+upsc+"','"+ts+"","+null+",'no')");
                                                expt.executeUpdate("insert into experiment_master values('"+ExperimentName
+"','"+""+"','"+""+"','"+strYear+"','"+countOfGenotypes+"','"+upsc+"','"+ts+"","+null+")");
                                                session.setAttribute("NoOfPlates",new Integer(plateCount));
```

```
                                        }
                                }else{
                                        plateCount=1;
                                        String strPlateTubeName=session.getAttribute("pcrPlateName").toString();
                                        String[] strGenotypeids=req.getParameter("hstrGenoid").split("‘‘~!");
                                        int genotypecount=Integer.parseInt((String)req.getParameter("countgenotypes"));

                                        int nn;
                                        int mm;
                                        int mk;
                                        int no_of_plates;
                                        if (strPlatetype.equals("96")){
                                                nn=9;
                                                mm=13;
                                                mk=1;
                                                no_of_plates=96;
                                        }else{
                                                nn=17;
                                                mm=25;
                                                mk=1;
                                                //to count the number of partions in the plate
                                                for(int s=1;s<24;s++){
                                                        if((genotypecount<(16*s))||(genotypecount==(16*s))){
                                                                genotypecount=16*s;
                                                                break;
                                                        }
                                                }
                                                if(genotypecount==384)
                                                        no_of_plates=4;
                                                else
                                                        no_of_plates=Math.round(384/genotypecount);
                                        }
                                        int a=0;
                                        int cha=65;
                                        int countGenos=0;

                                        for (int j=1;j<nn;j++){
                                                for(int k=mk;k<mm;k++){
                                                        if (a<strGenotypeids.length){
                                                                String[] strGenos=strGenotypeids[a].split("~‘‘!");

                                                                //////change
                                                                 if (strGenos[0].equals("NULL")){
                                                                        a=a+1;
                                                                 }else{
                                                                        countGenos=countGenos+1;

                                                                        PreparedStatement pstmt1=con.prepareStatement("in
```

```
sert into PCR_Tracking_Well values(?,?,?,?)");
                                                                    pstmt1.setString(1,strPlateTubeName);
                                                                    pstmt1.setString(2,strGenos[1]);
                                                                    pstmt1.setInt(3,k);
                                                                    pstmt1.setString(4,new Character((char)cha).toStr
ing());

                                                                    pstmt1.executeUpdate();
                                                                    a=a+1;
                                                            }
                                                    }
                                            }
                                            cha=cha+1;
                                    }
                                    session.setAttribute("NoOfFiles",new Integer(plateCount));
                                    session.setAttribute("pcrPlate", strPlateTubeName);
                                    PreparedStatement pstmt2=con.prepareStatement("insert into PCR_Tracking values(?,
?,?,?,?,?)");
                                    pstmt2.setString(1,strPlateTubeName);
                                    pstmt2.setString(2,strPlatetype);
                                    pstmt2.setString(3,session.getAttribute("upsc").toString());
                                    pstmt2.setTimestamp(4, new Timestamp(System.currentTimeMillis()));
                                    pstmt2.setTimestamp(5, null);
                                    pstmt2.setInt(6, no_of_plates);
                                    pstmt2.executeUpdate();
                            }
                            session.setAttribute("PCRtype", Platetype);
                    }catch(Exception e){
                            e.printStackTrace();
                    }
                    finally{
                          try{
                                    if(con!=null) con.close();
                             }catch(Exception e){System.out.println(e);}
                            }

                    return map.findForward("ins");
            }
    }

./WEB-INF/src/org/icrisat/lims/sampletracking/pcr/PCRPlateAction.java


//Retrieving genotypes from database to populate the PCR plate
/*
 * Created on Sep 6, 2005
 *
 * TODO To change the template for this generated file go to
```

```
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.pcr;


import java.sql.Connection;
import java.io.File;

import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.Iterator;
import java.util.List;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import jxl.Sheet;
import jxl.Workbook;
import jxl.Cell;

import org.apache.commons.fileupload.DiskFileUpload;
import org.apache.commons.fileupload.FileItem;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class PCRPlateAction extends Action{
        public ActionForward execute(ActionMapping map, ActionForm form,HttpServletRequest req, HttpServletRespons
e res) throws Exception {
                // TODO Auto-generated method stub
                ActionErrors ae=new ActionErrors();
                HttpSession session = req.getSession(true);
                //user identification
```

```
                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                        return map.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("pcrPlateName");
                }

                String plate="";
                String message="";
                ArrayList al=new ArrayList();
                String msg="";
                String strPlateType="";
                String values="";String exptType="";
                String strGCount="";
                String pid="";
                //establishing connection
                Connection con=null;
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        String pname="";
                        if(session.getAttribute("optQ").equals("upload")){
                                int totalPlates=0;
                                //Create a new file upload handler
                                DiskFileUpload upload = new DiskFileUpload();
                                //Parse the request
                                List items = upload.parseRequest(req); // give u the list of items in the form
                                Iterator iter = items.iterator();
                                String content="";
                                String contents="";
                                String genotypes="";
                                while (iter.hasNext()) {
                                        FileItem item = (FileItem) iter.next();
                                        if (item.isFormField()) {
                                                if(item.getFieldName().equals("plate")){
                                                        String plateName=item.getString();
                                                        //System.out.println("The plate name is "+plateName);
                                                        session.setAttribute("platesVal", plateName);
                                                }
                                                if(item.getFieldName().equals("NoOfPlates")){
                                                        String NoOfPlates=item.getString();
                                                        session.setAttribute("NoOfFiles", NoOfPlates);
                                                }
                                                if(item.getFieldName().equals("ExptName")){
                                                        String experimentName=item.getString();
                                                        session.setAttribute("ExptName", experimentName);
```

```
                                                        }
                                                        if(item.getFieldName().contains("value")){
                                                                pname=item.getString();
                                                        }
                                                } else {
                                                        totalPlates=totalPlates+1;
                                                        File cfile=new File(item.getName());
                                                        // this will give u the path upto ROOT folder..if u want to put in side ur own forlder u can give the location inside the quotes
                                                        String foldername=session.getServletContext().getRealPath("//")+"/UploadFiles//";
                                                        if(!new File(foldername).exists())
                                                                new File(foldername).mkdir();

                                                        String strGetFileName=cfile.getName();
                                                        String strGetFileNameSub=strGetFileName.substring(strGetFileName.lastIndexOf("\\")+1);

                                                        File tosave=new File(foldername+"//"+strGetFileNameSub);
                                                        item.write(tosave);
                                                        String platetype=(String)session.getAttribute("PltType");
                                                        session.setAttribute("PltType", platetype);
                                                        Workbook workbook=Workbook.getWorkbook(tosave);
                                                        Sheet sheet=workbook.getSheet(0);
                                                        int row=sheet.getRows();
                                                        int columns=sheet.getColumns();
                                                        int cha=65;
                                                        int s=1;
                                                        message="";
                                                        String rowId="";
                                                        int rows=0;
                                                        int cols=0;
                                                        if(platetype.equals("96")){
                                                                rows=10;
                                                                cols=13;
                                                        }else if(platetype.equals("384")){
                                                                rows=18;
                                                                cols=25;

                                                        }
                                                        session.setAttribute("PName", pname);
                                                        if(row==0&&columns==0){
                                                                req.setAttribute("isPlatesAvailable", "upload");
                                                                ae.add("myerrors", new ActionError("prompt.worksheet"));
                                                                saveErrors(req, ae);
                                                                return (new ActionForward("/PCRPlate_Prep.do?ChkPlateids=1"));
                                                        }else{
```

```
   144                                                                int noOfRows=sheet.getRows();
   145                                                                int noOfCols=sheet.getColumns();
   146                                                                if(noOfCols<cols||noOfRows<rows){
   147                                                                        req.setAttribute("isPlatesAvailable", "upload");
   148                                                                        ae.add("myerrors", new ActionError("prompt.workshe
et.sheetError"));
   149                                                                        saveErrors(req, ae);
   150                                                                        return (new ActionForward("/PCRPlate_Prep.do?ChkPl
ateids=1"));
   151                                                                }

   152                                                                for(int i=1;i<cols;i++){
   153                                                                        Cell cell=sheet.getCell(i,1);
   154                                                                        content=cell.getContents();
   155                                                                        if(!(content.equals(String.valueOf(i)))){
   156                                                                                req.setAttribute("isPlatesAvailable", "upl
oad");
   157                                                                                ae.add("myerrors", new ActionError("prompt
.worksheet.sheetError"));
   158                                                                                saveErrors(req, ae);
   159                                                                                return (new ActionForward("/PCRPlate_Prep.
do?ChkPlateids=1"));
   160                                                                        }
   161                                                                }

   162                                                                for(int i=2;i<rows;i++){
   163                                                                        Cell cell=sheet.getCell(0,i);
   164                                                                        content=cell.getContents();
   165                                                                        rowId=new Character((char)cha).toString();
   166                                                                        if(!(content.equals(rowId))){
   167                                                                                req.setAttribute("isPlatesAvailable", "upl
oad");
   168                                                                                ae.add("myerrors", new ActionError("prompt
.worksheet.sheetError"));
   169                                                                                saveErrors(req, ae);
   170                                                                                return (new ActionForward("/PCRPlate_Prep.
do?ChkPlateids=1"));
   171                                                                        }
   172                                                                        cha++;
   173                                                                }

   174                                                                cha=65;
   175                                                                for(int i=2;i<rows;i++){

   176                                                                        for(int j=1;j<cols;j++){
   177                                                                                message="upload";
   178                                                                                Cell cell=sheet.getCell(j,i);
   179                                                                                content=cell.getContents();
```

```
                                                                                rowId=new Character((char)cha).toString();
                                                                                if(!(content.equals("")){
                                                                                        contents=contents+content+"'~~'"+rowId+"'~~'"+s+"'!~!'";
                                                                                        genotypes=genotypes+content+"'~~'"+rowId+"'~~'"+s+"'!~!'";
                                                                                }else{
                                                                                        contents=contents+"blank"+"'~~'"+rowId+"'~~'"+s+"'!~!'";
                                                                                }
                                                                                /*if(!(content.equals("")){
                                                                                        genotypes=genotypes+content+"'~~'"+rowId+"'~~'"+s+"'!~!'";
                                                                                }*/
                                                                                s++;
                                                                        }
                                                                        cha=cha+1;
                                                                        s=1;
                                                                }

                                                                String[] genotype=genotypes.split("'!~!'");
                                                                if(genotype.length<=1){
                                                                        req.setAttribute("isPlatesAvailable", "upload");
                                                                        ae.add("myerrors", new ActionError("prompt.worksheet.noGenotypes"));
                                                                        saveErrors(req, ae);
                                                                        return (new ActionForward("/PCRPlate_Prep.do?ChkPlateids=1"));
                                                                }
                                                        }
                                                        contents=contents+"!~~~~~!"+pname+"&;;&";
                                                        genotypes=genotypes+"!~~~~~!"+pname+"&;;&";
                                                }
                                        }
                                        //System.out.println("PCR PLATE Contents="+contents);
                                        String pcr1=(String)session.getAttribute("platesVal");
                                        String[] pcr=pcr1.split("!~~!");
                                        for(int p=0;p<pcr.length;p++){
                                                plate=plate+pcr[p]+"; ";
                                        }
                                        session.setAttribute("pcrPlateName", plate);
                                        session.setAttribute("NoOfFiles", new Integer(totalPlates));
                                        //session.setAttribute("genotypes" ,genotypes);
                                        session.setAttribute("genoRowCol", contents);
                                        //session.setAttribute("platesVal", plateNames);
                                        msg="ins1";
                                }else{
```

```
                                int rsPCount=0;
                                int x=0;
                                pname=req.getParameter("plateTubeId").trim();
                                Statement stmtPlateid=con.createStatement();
                                ResultSet rsPlateid=stmtPlateid.executeQuery("select PCR_Plate_Id from PCR_Trackin
g where lower(PCR_Plate_Id)='" + pname.toLowerCase() + "'");
                                while (rsPlateid.next()){
                                        rsPCount=rsPCount + 1;
                                }
                                if (rsPCount==0){
                                        String test[] = req.getParameterValues("selPlates");
                                        for(int i=0;i<test.length;i++){
                                                if (session.getAttribute("optQ").equals("manual")){
                                                        /*int x = test[i].indexOf("-");
                                                        pid=pid +"'" + test[i].substring(0,x) + "'" + ",";*/
                                                        //changes made for Pooled plates
                                                        if(session.getAttribute("pooling").toString().equals("no")
){
                                                                x = test[i].indexOf("-");
                                                                pid=pid +"'" + test[i].substring(0,x) + "'" + ",";
                                                        }else{
                                                                pid=pid +"'" + test[i] + "'" + ",";
                                                        }
                                                }else if(session.getAttribute("optQ").equals("robotics")){
                                                        pid=pid +"'" + test[i] + "'" + ",";
                                                }
                                        }
                                        Statement st = con.createStatement();
                                        Statement stPltType=con.createStatement();
                                        Statement stCount=con.createStatement();
                                        Statement stmtExpType=con.createStatement();

                                        if(session.getAttribute("pooling").toString().equals("no")){
                                                ResultSet rs = st.executeQuery("SELECT DNA_Plate_Id, Row_Id, Col_I
d, Genotype_Id,LIMS_Id,DNA_Plate_Controls FROM  DNA_Extraction_Well_Controls where DNA_Plate_Id in ("+ pid.substring(0,pid
.length()-1) +") ORDER BY DNA_Plate_Id, Row_Id, Col_Id");
                                                ResultSet rsPltType=stPltType.executeQuery("select DNA_Plate_Id,Pl
ate_Type from DNA_Extraction_Tracking where DNA_Plate_Id in ("+ pid.substring(0,pid.length()-1) +") and upsc_id='" + sessi
on.getAttribute("upsc") + "' ORDER BY DNA_Plate_Id");
                                                ResultSet rsPltTypeCount=stCount.executeQuery("select DNA_Plate_Id
,min(LIMS_Id),max(LIMS_Id),count(LIMS_Id) from DNA_Extraction_Well where DNA_Plate_Id in ("+ pid.substring(0,pid.length()-
1) +") GROUP BY DNA_Plate_Id");
                                                while(rs.next()){
                                                        values = values + rs.getString("DNA_Plate_Id") + "~''!" +
rs.getString("Row_Id") + "~''!" + rs.getInt("Col_Id") + "~''!" + rs.getString("Genotype_Id")+ "~''!" + rs.getString("LIMS_
Id")+ "~''!" + rs.getString("DNA_Plate_Controls")+"''~!";
                                                        al.add(rs.getString("Genotype_Id"));
                                                }
```

```
258                                                     while (rsPltType.next()){
259                                                             strPlateType=strPlateType + rsPltType.getString("DNA_Plate
_Id") +"~‘‘!"+ rsPltType.getString("Plate_Type") + "‘‘~!";
260                                                     }
261
262                                                     while (rsPltTypeCount.next()){
263                                                             strGCount=strGCount + rsPltTypeCount.getString("DNA_Plate_
Id") + "‘‘~!" + rsPltTypeCount.getString(4) + "~‘‘!";
264                                                     }

265                                             }else{
266                                                     String Plate_Type="96";
267                                                     ResultSet rs = st.executeQuery("select dna_pooling.pooled_plate_id
,dna_pooling.row_id, dna_pooling.col_id, Genotype_master.genotype_id,dna_pooling.lims_id,dna_pooling.pooled_dna from dna_p
ooling inner join genotype_master on genotype_master.lims_id=dna_pooling.lims_id where pooled_plate_id in ("+ pid.substrin
g(0,pid.length()-1) +") ORDER BY pooled_plate_id, Row_Id, Col_Id");
268                                                     ResultSet rsPltTypeCount=stCount.executeQuery("select pooled_plate
_id,min(LIMS_Id),max(LIMS_Id),count(LIMS_Id) from dna_pooling where pooled_plate_id in  ("+ pid.substring(0,pid.length()-1
) +") GROUP BY pooled_plate_id");
269                                                     while(rs.next()){
270                                                             values = values + rs.getString(1) + "~‘‘!" + rs.getString(
"Row_Id") + "~‘‘!" + rs.getInt("Col_Id") + "~‘‘!" + rs.getString("Genotype_Id")+ "~‘‘!" + rs.getString("LIMS_Id")+ "~‘‘!"
+null+ "~‘‘!" + rs.getString("pooled_dna")+"‘‘~!";
271                                                             al.add(rs.getString("Genotype_Id"));
272                                                     }
273
274                                                     while (rsPltTypeCount.next()){
275                                                             strGCount=strGCount + rsPltTypeCount.getString("pooled_pla
te_id") + "‘‘~!" + rsPltTypeCount.getString(4) + "~‘‘!";
276                                                             strPlateType=strPlateType + rsPltTypeCount.getString("pool
ed_plate_id") +"~‘‘!"+ Plate_Type + "‘‘~!";
277                                                     }
278                                             }
279
280                                             session.setAttribute("pcrPlateName", pname);
281                                             msg="ins";
282                                     }else{
283                                             req.setAttribute("isPlatesAvailable", "YES");
284                                             ae.add("myerrors", new ActionError("error.nameExists"));
285                                             saveErrors(req, ae);
286                                             return (new ActionForward("/jsp/pcr/PCRTracking2.jsp"));

287                                     }
288                                     session.setAttribute("plateNameType",strPlateType.trim());
289                                     session.setAttribute("pltList",values);
290                                     session.setAttribute("alList",al);
291                                     session.setAttribute("PltNameCount", strGCount);
292                                     //session.setAttribute("exptType", exptType);
```

```
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                }
                return map.findForward(msg);
        }
}

```

./WEB-INF/src/org/icrisat/lims/sampletracking/pcr/PCRAction.java

```
/*
 * Created on Sep 6, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.pcr;

import java.io.File;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.Calendar;
import java.util.GregorianCalendar;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import org.icrisat.lims.common.CreateTemplate;
import org.icrisat.lims.common.UploadExcel;
/**
 * @author lswarupa
```

```
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class PCRAction extends Action{
        public String optQuantMeth="";
        Connection con=null;
        ResultSet rs=null;
        ResultSet rsp=null;
        Statement stmt=null;

        public ArrayList plateidList(String un,HttpServletRequest req,ActionForm form, Connection con){
                ArrayList pidList=new ArrayList();
                try{
                        Statement st = con.createStatement();
                        //String pooling=(String)req.getSession().getAttribute("upsc");
                        String pooling=(String)req.getSession().getAttribute("pooling");
                        if (optQuantMeth.equals("robotics")){
                                rs = st.executeQuery("SELECT distinct(LIMS_GwlFiles.DNA_Plate_Id) FROM  LIMS_GwlFiles  WHERE (LIMS_GwlFiles.upsc_id = '"+ un +"')");
                        }
                        else if(optQuantMeth.equals("manual")){
                                //rs=st.executeQuery(" SELECT DISTINCT DNA_Dilution.DNA_Plate_Id, DNA_Quantification_Tracking.DNA_Quantification_Protocol FROM  DNA_Quantification_Tracking INNER JOIN DNA_Dilution ON DNA_Quantification_Tracking.DNA_Plate_Id = DNA_Dilution.DNA_Plate_Id where DNA_Dilution.upsc_id='"+ un +"'");
                                //if(pooling.toLowerCase().contains("tilling")){
                                if(pooling.equalsIgnoreCase("yes")){
                                        rs=st.executeQuery("select distinct pooled_plate_id from dna_pooling where upsc_id='"+un+"'");
                                }else{
                                        rs=st.executeQuery(" SELECT DISTINCT DNA_Dilution.DNA_Plate_Id, DNA_Quantification_Tracking.DNA_Quantification_Protocol FROM  DNA_Quantification_Tracking INNER JOIN DNA_Dilution ON DNA_Quantification_Tracking.DNA_Plate_Id = DNA_Dilution.DNA_Plate_Id where DNA_Dilution.upsc_id='"+ un +"'");
                                }
                        }
                        while(rs.next()){
                                if (optQuantMeth.equals("robotics")){
                                        pidList.add(rs.getString(1));
                                }else if(optQuantMeth.equals("manual")){
                                        //pidList.add(rs.getString("DNA_Plate_Id") + "-" + rs.getString("DNA_Quantification_Protocol"));
                                        //if(pooling.toLowerCase().contains("tilling"))
                                        if(pooling.equalsIgnoreCase("yes"))
                                                pidList.add(rs.getString(1));
                                        else
                                                pidList.add(rs.getString(1) + "-" + rs.getString(2));

                                }
```

```
                        }
                }
                catch(Exception e){
                        e.printStackTrace();
                }
                return pidList;
        }



        public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse resp)throws Exception{
                //              user identification
                HttpSession session=req.getSession(true);
                DynaActionForm lf=(DynaActionForm)form;
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return map.findForward(msg);
                }
                String strPltType="";
                if(req.getParameter("optQuantMeth")!=null){
                        optQuantMeth=req.getParameter("optQuantMeth");
                        strPltType=req.getParameter("hPltType");
                }
                String uname=(String)session.getAttribute("upsc");
                try{
                        //                      creating connection
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();
                        stmt=con.createStatement();
                        if(req.getParameter("ChkPlateids")!=null){
                                //*********Ajax Plain Text Response ***********//
                                if(req.getParameter("feild")!=null){
                                        PrintWriter writer=resp.getWriter();
                                        resp.setContentType("text/xml");
                                        resp.setHeader("Cache-Control", "no-cache");
                                        Statement stmt1=con.createStatement();
                                        ResultSet rs1=null;
                                        if (req.getParameter("feild").equals("ExptName")){
                                                GregorianCalendar calendar = new GregorianCalendar();
                                                int intYear=calendar.get(Calendar.YEAR);
                                                String strYear=String.valueOf(intYear);
                                                rs1=stmt1.executeQuery("Select experiment_name from experiment_master where experiment_name='"+strYear+"_"+session.getAttribute("study")+"_"+req.getParameter("ChkPlateids")+"~~~PCR'");
                                        }else{
                                                rs1=stmt1.executeQuery("select PCR_Plate_Id from PCR_Tracking where lower(PCR_Plate_Id)='" + req.getParameter("ChkPlateids").toLowerCase() + "'");
```

```
                                        }
                                                if(rs1.next()){
                                                        writer.println("1");

                                                        return null;
                                                }
                                        //}
                                }
                                String NoOfPlates=(String)req.getParameter("NoOfPlates");
                                if((req.getParameter("NoOfPlates")==null )&&(session.getAttribute("NoOfFiles")!=nu
ll)){
                                        NoOfPlates=String.valueOf(session.getAttribute("NoOfFiles"));
                                        String vals=(String)session.getAttribute("platesVal");
                                        session.setAttribute("plateNamePath",vals);
                                }else{
                                        session.removeAttribute("plateNamePath");
                                }

                                String ExptName=(String)req.getParameter("ExptName");
                                optQuantMeth="upload";
                                //strPltType=(String)session.getAttribute("optQ");
                                strPltType=(String)session.getAttribute("PltType");
                                req.setAttribute("isPlatesAvailable", "upload");
                                session.setAttribute("ExptName", ExptName);
                                session.setAttribute("NoOfPCR", NoOfPlates);
                        }else{
                                session.removeAttribute("plateNamePath");
                                session.removeAttribute("platesVal");
                                session.removeAttribute("NoOfPCR");
                                session.removeAttribute("NoOfFiles");
                                if(optQuantMeth.equals("upload")){
                                        req.setAttribute("isPlatesAvailable", "upload");
                                        UploadExcel Gxf=new UploadExcel();
                                        String platetype=lf.get("hPltType").toString();
                                        String fname=session.getServletContext().getRealPath("//");
                                        String sheetname=platetype+"_plate";
                                        String foldername=fname+"//"+"UploadFiles/";
                                        if(!new File(foldername).exists())
                                                new File(foldername).mkdir();
                                        String name="UploadFiles/"+platetype+"_Plate.xls";
                                        session.setAttribute("plateName", name);
                                        Gxf.deleteFile(name);
                                        String finalFName=fname+"/"+name;
                                        String format="";
                                        CreateTemplate pcr=new CreateTemplate();
                                        pcr.CreatePlateTemplate(platetype, sheetname, finalFName, format);

                                }else{
```

```
166                                         ArrayList pList = plateidList(uname,req,form,con);
167                                         if(!pList.isEmpty()){
168                                                 req.setAttribute("isPlatesAvailable","YES");
169                                                 session.setAttribute("pltList", pList);
170                                         }else{
171                                                 if(optQuantMeth=="manual" || optQuantMeth.equals("manual")){
172                                                         req.setAttribute("isPlatesAvailable","NoManual");
173                                                 }else{
174                                                         req.setAttribute("isPlatesAvailable","NoRobotic");
175                                                 }
176                                         }
177                                 }
178                         }
179                 }catch(Exception e){System.out.println(e);}
180                 finally{
181                       try{
182                                 if(con!=null) con.close();
183                          }catch(Exception e){System.out.println(e);}
184                         }
185                 session.setAttribute("PltType",strPltType);
186                 session.setAttribute("optQ",optQuantMeth);
187                 return map.findForward("ins");
188         }
189 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/runplate/RetrievePlatesDataAction.java

```
  1 package org.icrisat.lims.sampletracking.runplate;
  2
  3 import java.sql.Connection;
  4 import java.sql.ResultSet;
  5 import java.sql.Statement;
  6
  7 import javax.servlet.ServletContext;
  8 import javax.servlet.http.HttpServletRequest;
  9 import javax.servlet.http.HttpServletResponse;
 10 import javax.servlet.http.HttpSession;
 11 import javax.sql.DataSource;
 12
 13 import org.apache.struts.Globals;
 14 import org.apache.struts.action.Action;
 15 import org.apache.struts.action.ActionForm;
 16 import org.apache.struts.action.ActionForward;
 17 import org.apache.struts.action.ActionMapping;
 18
 19 /**
 20  *   created on Aug 22, 2008
 21  * @author psrikalyani
```

```
 */
public class RetrievePlatesDataAction extends Action{
        Connection con=null;

        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res) throws Exception {
                HttpSession session = req.getSession(true);
                if (session != null) {
                        session.removeAttribute("PltType");
                        session.removeAttribute("plateNameType");
                        session.removeAttribute("pltList");
                        session.removeAttribute("PltNameCount");
                        session.removeAttribute("markers");
                }
                String values="";
                String pid="";
                String pid1="";
                String strPlateType="";
                String msg="";
                String PlateNames="";
                String test[] = req.getParameterValues("pcrpid");
                String runplateid=req.getParameter("runplateid");
                String plateType=req.getParameter("plateType");
                for(int i=0;i<test.length;i++){
                        pid=pid+"'" +test[i]+"'" +",";
                        pid1=pid1+test[i]+",";
                }
                session.setAttribute("plateCount", test.length+"");
                Statement st=null; Statement stPltType=null;
                String markers="";
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st = con.createStatement();
                        stPltType=con.createStatement();
                        session.setAttribute("pid", pid1);
                        String pcr_plate_id="";
                        String base_plate_ids="";
                        //retrieving the markerAssigned Plated_ids and base_plate_ids
                        ResultSet rsPltName = st.executeQuery("select distinct(base_plate),pcr_plate_id FROM pcr_marker where pcr_Plate_Id in ("+pid.substring(0,pid.length()-1)+") ORDER BY pcr_Plate_Id");
                        while(rsPltName.next()){
                                PlateNames=PlateNames+rsPltName.getString(2)+"!~~!"+rsPltName.getString(1)+"~~!!";
                                if(!(base_plate_ids.contains("'"+rsPltName.getString(1)+"'"))){
                                        base_plate_ids=base_plate_ids+"'"+rsPltName.getString(1)+"',";
                                }
                        }
```

```
                        base_plate_ids=base_plate_ids.substring(0, base_plate_ids.length()-1);
                        PlateNames=PlateNames.substring(0, PlateNames.length()-4);
                        String[] AssociatedPltNms=PlateNames.split("~~!!");
                        String finalString="";
                        String plttype="";

                        ResultSet rs = st.executeQuery("select pcr_tracking_well.pcr_plate_id,pcr_tracking_well.ro
w_id,pcr_tracking_well.col_id,genotype_master.genotype_id ,pcr_tracking_well.lims_id,dna_extraction_plate_controls.lims_id
 as controls from pcr_tracking_well inner join genotype_master on pcr_tracking_well.lims_id=genotype_master.lims_id left j
oin dna_extraction_plate_controls on pcr_tracking_well.lims_id=dna_extraction_plate_controls.lims_id  where pcr_tracking_w
ell.pcr_plate_id in ("+base_plate_ids+")order by pcr_tracking_well.pcr_Plate_Id, pcr_tracking_well.row_id, pcr_tracking_we
ll.col_id");
                        ResultSet rsPltType=stPltType.executeQuery("select distinct pcr_plate_id,plate_type,no_of_
parts from pcr_tracking where pcr_plate_id in( "+base_plate_ids+") and upsc_id='" + session.getAttribute("upsc") + "'ORDER
 BY pcr_plate_id");
                        while(rs.next()){
                                if(pcr_plate_id.equals(rs.getString("pcr_plate_id"))){
                                        values = values +  rs.getString("Row_Id") + "~''!" + rs.getInt("Col_Id") +
 "~''!" + rs.getString("Genotype_Id")+ "~''!" + rs.getString("LIMS_Id")+ "~''!" + rs.getString("controls")+"''~!";
                                }else{
                                        values = values + "~~!!"+rs.getString("pcr_plate_id") + "~''!" +rs.getStri
ng("Row_Id") + "~''!" + rs.getInt("Col_Id") + "~''!" + rs.getString("Genotype_Id")+ "~''!" + rs.getString("LIMS_Id")+ "~''
!" + rs.getString("controls")+"''~!";
                                }
                                pcr_plate_id=rs.getString("pcr_plate_id");
                        }

                        while (rsPltType.next()){
                                plttype=plttype+ rsPltType.getString("pcr_plate_id") +"~''!"+ rsPltType.getString(
"Plate_Type") +"~''!"+ rsPltType.getString("no_of_parts")+ "''~!";
                        }

                        for(int i=0;i<AssociatedPltNms.length;i++){
                                String[]plates=AssociatedPltNms[i].split("!~~!");
                                String[]data=values.split("~~!!"+plates[1]+"~''!");
                                String val="";
                                if(data[1].contains("~~!!")){
                                        val=data[1].substring(0,data[1].indexOf("~~!!"));
                                }else{
                                        val=data[1];
                                }
                                String[]str=val.split("''~!");
                                for(int s=0;s<str.length;s++){
                                        finalString=finalString+plates[0]+"~''!"+str[s]+"''~!";

                                }
                                String[]splitplttype=plttype.split("''~!");
                                for(int d=0;d<splitplttype.length;d++){
```

```
                                        String[]ptype=splitplttype[d].split("~‘‘!");
                                        if(plates[1].equals(ptype[0])){
                                                strPlateType=strPlateType+plates[0]+"~‘‘!" +ptype[1]+"~‘‘!" +ptype[2]+"‘‘~!";
                                                break;
                                        }
                                }

                        }

                        Statement stmtm=con.createStatement();
                        ResultSet rsm=stmtm.executeQuery("SELECT distinct pcr_marker_well.marker_assigned, pcr_marker_well.Part_Of_Plate,pcr_marker_well.PCR_Plate_Id , LIMS_PCR_Markers.forward_primer_label, LIMS_PCR_Markers.reverse_primer_label FROM LIMS_PCR_Markers RIGHT OUTER JOIN pcr_marker_well ON LIMS_PCR_Markers.Marker_Name = pcr_marker_well.Marker_assigned WHERE pcr_marker_well.PCR_Plate_Id in ("+ pid.substring(0,pid.length()-1) +") ORDER BY pcr_marker_well.pcr_plate_id,pcr_marker_well.Part_Of_Plate");

                        //markers dye retrieval
                        while(rsm.next()){
                                String strName = rsm.getString(1).toString();
                                if(strName.equals("null")){
                                        markers=markers+strName+"~‘‘!"+rsm.getString(2)+"~‘‘!"+rsm.getString(3)+"~‘‘!"+ null+"‘‘~!";
                                }else{
                                        if(!(strName.startsWith("M13")||strName.startsWith("m13"))){

                                        //if(!strN[0].equals("m13")){
                                                if(!rsm.getString(4).equals("")){

                                                        markers=markers+rsm.getString(1)+"~‘‘!"+rsm.getString(2)+"~‘‘!"+rsm.getString(3)+"~‘‘!"+rsm.getString(4)+"‘‘~!";
                                                }else if(!rsm.getString(5).equals("")){

                                                        markers=markers+rsm.getString(1)+"~‘‘!"+rsm.getString(2)+"~‘‘!"+rsm.getString(3)+"~‘‘!"+rsm.getString(5)+"‘‘~!";
                                                }else if((rsm.getString(5).equals(""))&& (rsm.getString(5).equals("")){
                                                        markers=markers+rsm.getString(1)+"~‘‘!"+rsm.getString(2)+"~‘‘!"+rsm.getString(3)+"~‘‘!"+null+"‘‘~!";
                                                }
                                        }else{
                                                //String[] strN = strName.split("-");
                                                String[] strN = strName.split("-;-");
                                                markers=markers+strN[0]+"~‘‘!"+rsm.getString(2)+"~‘‘!"+rsm.getString(3)+"~‘‘!"+ strN[1]+"‘‘~!";
                                        }
                                }
                        }
```

```
                        session.setAttribute("plateNameType",strPlateType.trim());
                        session.setAttribute("pltList",finalString);
                        session.setAttribute("PltType", plateType);
                        session.setAttribute("markers", markers);
                        session.setAttribute("runplateid", runplateid);
        }catch(Exception e){
                e.printStackTrace();
        }
        finally{
              try{
                        if(con!=null) con.close();
                 }catch(Exception e){System.out.println(e);}
                }

                return am.findForward("data");
        }


}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/runplate/RunPlateVolumeAction.java

```
/**
 *
 */
package org.icrisat.lims.sampletracking.runplate;

import java.util.ArrayList;
import java.util.List;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author psrikalyani
 *
 */
public class RunPlateVolumeAction extends Action {

        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                // TODO Auto-generated method stub
```

```
                HttpSession session = req.getSession(true);

                session.setAttribute("hstrGenoid", req.getParameter("hstrGenoid"));
                String[] strGenotypeids=req.getParameter("hstrGenoid").split(",,");
                ArrayList mList=new ArrayList();
                String markers="";
                for(int l=0;l<strGenotypeids.length;l++){
                        if(!(strGenotypeids[l].equals("NULL"))){
                                String[] strSamples=strGenotypeids[l].split("!~!");
                                //System.out.println(strGenotypeids[l]);
                                String[] splitstrGenos=strSamples[0].split("!~'!");
                                for(int i=0;i<splitstrGenos.length;i++){
                                        String[] strGenos=splitstrGenos[i].split("&&");
                                        markers=strGenos[5];
                                        mList.add(markers);

                                }
                        }
                }
                List finalList = new ArrayList(1);
                String marker="";
                for(int z=0;z<mList.size();z++){
                        String sMarkers = (String) mList.get(z);
                        if (!finalList.contains(sMarkers)) {
                                finalList.add(sMarkers);
                                marker=marker+sMarkers+"@!@";
                        }
                }
                session.setAttribute("marker", marker);
                session.setAttribute("finalList", finalList);
                return am.findForward("next");
        }


}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/runplate/RetrievePlatesAction.java

```
package org.icrisat.lims.sampletracking.runplate;

import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
```

```
    11  import javax.servlet.http.HttpServletResponse;
    12  import javax.servlet.http.HttpSession;
    13  import javax.sql.DataSource;
    14
    15  import org.apache.struts.Globals;
    16  import org.apache.struts.action.Action;
    17  import org.apache.struts.action.ActionForm;
    18  import org.apache.struts.action.ActionForward;
    19  import org.apache.struts.action.ActionMapping;
    20
    21  /**
    22   *   created on Aug 21, 2008
    23   * @author psrikalyani
    24   */
    25  public class RetrievePlatesAction extends Action{
    26          Connection con=null;
    27          ResultSet rs=null;
    28          Statement stmt=null;
    29          public ArrayList runPlateidList(HttpServletRequest req, Connection con){
    30                  ArrayList runpidlist=new ArrayList();
    31                  String upscid=(String)req.getSession().getAttribute("upsc");
    32                  String electype="Capillary";
    33                  try{
    34                          stmt = con.createStatement();
    35                          rs=stmt.executeQuery("SELECT distinct pcr_plate_id FROM pcr_marker WHERE (upsc_id = '"+ups
cid+"') and electrophoresis_type='"+electype+"' AND (PCR_Plate_Id NOT IN (SELECT DISTINCT pcr_plate_id FROM dna_electropho
resis WHERE upsc_id = '"+upscid+"'))");
    36                  while(rs.next()){
    37                                  runpidlist.add(rs.getString(1).toString());
    38                  }
    39                  }catch(Exception e){
    40                        e.printStackTrace();
    41                         }
    42                    return runpidlist;
    43          }
    44
    45
    46
    47          public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
    48                  HttpSession session = req.getSession(true);
    49  //      user identification
    50                  if((String)session.getAttribute("user")==null){
    51                           String msg="logout";
    52                          return am.findForward(msg);
    53                  }
    54                  try{
    55                          ServletContext context = servlet.getServletContext();
```

```
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        RetrievePlatesAction runplates = new RetrievePlatesAction();
                        ArrayList runpltid = runplates.runPlateidList(req,con);
                        session.setAttribute("runpltid", runpltid);
                        if(req.getParameter("ChkPlateids")!=null){
                                //*********Ajax Plain Text Response ***********//
                                if(req.getParameter("feild")!=null){
                                        PrintWriter writer=res.getWriter();
                                        res.setContentType("text/xml");
                                        res.setHeader("Cache-Control", "no-cache");
                                        Statement stmt1=con.createStatement();
                                        ResultSet rs1=null;
                                        rs1=stmt1.executeQuery("select run_plate_id from run_tracking where lower(
run_Plate_Id)='" + req.getParameter("ChkPlateids").toLowerCase() + "'");
                                        if(rs1.next()){
                                                writer.println("1");
                                                return null;
                                        }
                                }
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }

                return am.findForward("runplates");
        }


 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/runplate/RunPlateInsertAction.java

```
/**
 *
 */
package org.icrisat.lims.sampletracking.runplate;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.Timestamp;
import java.util.HashMap;
import java.util.Iterator;
import java.util.Map;
```

```
    12  import java.util.Set;
    13
    14  import javax.servlet.ServletContext;
    15  import javax.servlet.http.HttpServletRequest;
    16  import javax.servlet.http.HttpServletResponse;
    17  import javax.servlet.http.HttpSession;
    18  import javax.sql.DataSource;
    19
    20  import org.apache.struts.Globals;
    21  import org.apache.struts.action.Action;
    22  import org.apache.struts.action.ActionForm;
    23  import org.apache.struts.action.ActionForward;
    24  import org.apache.struts.action.ActionMapping;
    25  import org.apache.struts.action.DynaActionForm;
    26
    27  /**
    28   * @author psrikalyani, created on 29 september 2008
    29   **/
    30  public class RunPlateInsertAction extends Action{
    31          public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
    32                  Connection con=null;
    33                  HttpSession session = req.getSession(true);
    34  //              user identification
    35                  DynaActionForm lf=(DynaActionForm)af;
    36                  if((String)session.getAttribute("user")==null){
    37                           String msg="logout";
    38                          return am.findForward(msg);
    39                  }
    40                  String pooling="";
    41                  try{
    42                          int platesCount=Integer.parseInt(req.getParameter("plateCount"));
    43                          String strPlatetype=(String)session.getAttribute("PltType");
    44                          String runplateid=(String)session.getAttribute("runplateid");
    45                          int no_of_plates=96;
    46
    47
    48                          pooling=req.getParameter("pooling");
    49                          ServletContext context = servlet.getServletContext();
    50                  DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
    51                          con=dataSource.getConnection();
    52
    53                          PreparedStatement pstmt2=con.prepareStatement("insert into run_tracking values(?,?,?,?,?,?
)");
    54                          pstmt2.setString(1,runplateid);
    55                          pstmt2.setString(2,strPlatetype);
    56                          pstmt2.setString(3,session.getAttribute("upsc").toString());
    57                          pstmt2.setInt(4, no_of_plates);
```

```
                        pstmt2.setTimestamp(5, new Timestamp(System.currentTimeMillis()));
                        pstmt2.setTimestamp(6, null);
                        pstmt2.executeUpdate();

                        String[] strGenotypeids=session.getAttribute("hstrGenoid").toString().split(",,");

                        String pcr="";String markers="";String limsId="";String row="";int col=0;
                        for(int l=0;l<strGenotypeids.length;l++){
                                String[] strSamples=strGenotypeids[l].split("!~!");
                                row=strSamples[1];
                                col=Integer.parseInt(strSamples[2]);
                                String[] splitstrGenos=strSamples[0].split("!~'!");
                                pcr="";
                                markers="";

                                for(int i=0;i<splitstrGenos.length;i++){
                                         String[] strGenos=splitstrGenos[i].split("&&");
                                         String pcr1=strGenos[2]+"-"+strGenos[3]+strGenos[4];
                                         pcr=pcr+pcr1+",";
                                         String mar=strGenos[5];
                                         String[] strVol=req.getParameter("strVol").split("&&");
                                         for(int v=0;v<strVol.length;v++){
                                                 String[] strVol1=strVol[v].split("~!~");
                                                 HashMap hm = new HashMap();

                                                 hm.put(strVol1[0], strVol1[1]);
                                                 Set set = hm.entrySet();
                                                 Iterator it = set.iterator();
                                                 while(it.hasNext()){
                                                         Map.Entry me = (Map.Entry)it.next();
                                                         if(mar.equals(me.getKey()))
                                                                 markers=markers+mar+":"+strVol1[1]+",";
                                                 }
                                         }
                                         limsId=strGenos[1];

                                }
                                PreparedStatement pstmt1=con.prepareStatement("insert into run_tracking_well values(?,?,?,?,?,?)");
                                pstmt1.setString(1,runplateid);
                                pstmt1.setString(2,limsId);
                                pstmt1.setInt(3,col);
                                pstmt1.setString(4,row);
                                pstmt1.setString(5,markers);
                                pstmt1.setString(6,pcr);
                                pstmt1.executeUpdate();
                        }
                }catch(Exception e){
```

```
                        e.printStackTrace();
                }
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }


        return am.findForward("submit");
        }


}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/storage/StorageIdAction.java

```
/*
 * Created on Sep 26, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.storage;
import java.util.*;

import javax.servlet.ServletContext;
import javax.servlet.http.*;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.*;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;


/**
 * @author pprasad
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class StorageIdAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {
```

```
31                          HttpSession session = req.getSession(true);
32                          String uname=(String) session.getAttribute("user");
33                  // user identification
34                  if((String)session.getAttribute("user")==null){
35                                  String msg="logout";
36                                  return am.findForward(msg);
37                          }
38      String str="storage";
39          Connection con=null;
40          Statement st=null;
41          ResultSet rs=null;
42          Vector v=new Vector();
43          try{
44                  ServletContext context = servlet.getServletContext();
45                  DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
46                  con=dataSource.getConnection();
47                  st=con.createStatement();
48              rs=st.executeQuery("SELECT DNA_Extraction_tracking.dna_plate_id FROM DNA_Extraction_tracking where dna
_extraction_tracking.upsc_id ='"+req.getSession().getAttribute("upsc")+"' and DNA_Extraction_tracking.dna_plate_id not in
(select dna_plate_id from dna_storage)");
49              while(rs.next())
50                          {
51                                  String plate_id=rs.getString(1);
52                                  v.add(plate_id);
53                          }
54              con.close();
55                  }catch(Exception e){
56                          System.out.println(e);
57                  }
58                   req.getSession().setAttribute("storagevector",v);
59                   return am.findForward(str);
60                  }
61  }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/storage/EditStorageUpdateAction.java

```
 1  /*
 2   * Created on Oct 9, 2006
 3   *
 4   * TODO To change the template for this generated file go to
 5   * Window - Preferences - Java - Code Style - Code Templates
 6   */
 7  package org.icrisat.lims.sampletracking.storage;
 8
 9  import java.sql.Connection;
10  import java.sql.Statement;
11
12  import javax.servlet.ServletContext;
```

```
13  import javax.servlet.http.HttpServletRequest;
14  import javax.servlet.http.HttpServletResponse;
15  import javax.servlet.http.HttpSession;
16  import javax.sql.DataSource;
17
18
19  import org.apache.struts.Globals;
20  import org.apache.struts.action.Action;
21  import org.apache.struts.action.ActionForm;
22  import org.apache.struts.action.ActionForward;
23  import org.apache.struts.action.ActionMapping;
24
25  /**
26   * @author pprasad
27   *
28   * TODO To change the template for this generated type comment go to
29   * Window - Preferences - Java - Code Style - Code Templates
30   */
31  public class EditStorageUpdateAction extends Action{
32
33          public ActionForward execute(ActionMapping am, ActionForm af,
34                          HttpServletRequest req, HttpServletResponse res) throws Exception {
35                                  // TODO Auto-generated method stub
36                  HttpSession session = req.getSession(true);
37                  Connection con=null;
38                  Statement st=null;
39                  String Epid=session.getAttribute("Editstoragepid").toString();
40                  String labno=req.getParameter("updatelabno");
41                  String coldroomno=req.getParameter("updatecoldroomno");
42                  String fridgeaccno=req.getParameter("updatefridgeaccno");
43                  String fridgefrezno=req.getParameter("updatefridgefrezno");
44                  String typeofcompartment=req.getParameter("updatetypeofcompartment");
45                  String uname=session.getAttribute("upsc").toString();
46
47                  try{
48                          ServletContext context = servlet.getServletContext();
49                          DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
50                          con=dataSource.getConnection();
51                          st=con.createStatement();
52                      int op=st.executeUpdate("update dna_storage set dna_plate_id='"+Epid+"',lab_no='"+labno+"',col
droom_no='"+coldroomno+"',fridge_acc_no='"+fridgeaccno+"',fridge_freeezerno ='"+fridgefrezno+"',type_of_compartment='"+typ
eofcompartment+"',upsc_id='"+uname+"' where dna_plate_id='"+Epid+"'");
53                      //System.out.println(op);
54                      con.close();
55                  }catch(Exception e){
56                          System.out.println(e);
57                  }
58                  return am.findForward("EditStorageupdatesub");
```

```
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/storage/StorageInsertAction.java

```
/*
 * Created on Oct 5, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.storage;
import java.sql.Connection;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
/**
 * @author pprasad
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class StorageInsertAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                                // TODO Auto-generated method stub
                HttpSession session = req.getSession(true);

                String uname=(String) session.getAttribute("user");
                // user identification
                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                        return am.findForward(msg);
                }


                Connection con=null;
```

```
                  Statement st=null;
                  String Spid=session.getAttribute("storagepid").toString();
                  String labno=req.getParameter("labno");
                  String coldroomno=req.getParameter("coldroomno");
                  String fridgeaccno=req.getParameter("fridgeaccno");
                  String fridgefrezno=req.getParameter("fridgefrezno");
                  String typeofcompartment=req.getParameter("typeofcompartment");
                  //String uname=session.getAttribute("upsc").toString();

                  try{
                          ServletContext context = servlet.getServletContext();
                          DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                          con=dataSource.getConnection();
                          st=con.createStatement();
                          //System.out.println("the upsc id is   "+req.getSession().getAttribute("upsc"));
                      st.executeUpdate("INSERT into dna_storage values('"+Spid+"','"+labno+"','"+coldroomno+"','"+fr
idgeaccno+"','"+fridgefrezno+" ','"+typeofcompartment+"','"+req.getSession().getAttribute("upsc")+"')");
             // System.out.println(op);
                      con.close();
                          }catch(Exception e){
                                  System.out.println(e);
                          }
                  return am.findForward("Storageinsertsub");
          }
  }
./WEB-INF/src/org/icrisat/lims/sampletracking/storage/StorageForm.java


 /*
  * Created on Sep 27, 2006
  *
  * TODO To change the template for this generated file go to
  * Window - Preferences - Java - Code Style - Code Templates
  */
 package org.icrisat.lims.sampletracking.storage;
 import org.apache.struts.action.*;

 /**
  * @author pprasad
  *
  * TODO To change the template for this generated type comment go to
  * Window - Preferences - Java - Code Style - Code Templates
  */
 public class StorageForm extends ActionForm {

         private String pid;
         private String displaypid;
         private String labno;
```

```
        private String fridgeaccno;
        private String fridgefrezno;
        private String typeofcompartment;
        private String viewplate_id;
        private String viewlab_no;
        private String viewfridge_acc_no;
        private String viewtype_of_compartment;
        private String editpid;
        private String updatelabno;
        private String updatefridgeaccno;
        private String updatefridgefrezno;
        private String updatetypeofcompartment;


        /**
         * @return Returns the updatefridgeaccno.
         */
        public String getUpdatefridgeaccno() {
                return updatefridgeaccno;
        }
        /**
         * @param updatefridgeaccno The updatefridgeaccno to set.
         */
        public void setUpdatefridgeaccno(String updatefridgeaccno) {
                this.updatefridgeaccno = updatefridgeaccno;
        }
        /**
         * @return Returns the updatefridgefrezno.
         */
        public String getUpdatefridgefrezno() {
                return updatefridgefrezno;
        }
        /**
         * @param updatefridgefrezno The updatefridgefrezno to set.
         */
        public void setUpdatefridgefrezno(String updatefridgefrezno) {
                this.updatefridgefrezno = updatefridgefrezno;
        }
        /**
         * @return Returns the updatelabno.
         */
        public String getUpdatelabno() {
                return updatelabno;
        }
        /**
         * @param updatelabno The updatelabno to set.
         */
        public void setUpdatelabno(String updatelabno) {
```

```
                this.updatelabno = updatelabno;
        }
        /**
         * @return Returns the updatetypeofcompartment.
         */
        public String getUpdatetypeofcompartment() {
                return updatetypeofcompartment;
        }
        /**
         * @param updatetypeofcompartment The updatetypeofcompartment to set.
         */
        public void setUpdatetypeofcompartment(String updatetypeofcompartment) {
                this.updatetypeofcompartment = updatetypeofcompartment;
        }
        /**
         * @return Returns the viewfridge_acc_no.
         */
        public String getViewfridge_acc_no() {
                return viewfridge_acc_no;
        }
        /**
         * @param viewfridge_acc_no The viewfridge_acc_no to set.
         */
        public void setViewfridge_acc_no(String viewfridge_acc_no) {
                this.viewfridge_acc_no = viewfridge_acc_no;
        }
        /**
         * @return Returns the viewlab_no.
         */
        public String getViewlab_no() {
                return viewlab_no;
        }
        /**
         * @param viewlab_no The viewlab_no to set.
         */
        public void setViewlab_no(String viewlab_no) {
                this.viewlab_no = viewlab_no;
        }
        /**
         * @return Returns the viewplate_id.
         */
        public String getViewplate_id() {
                return viewplate_id;
        }
        /**
         * @param viewplate_id The viewplate_id to set.
         */
        public void setViewplate_id(String viewplate_id) {
```

```
                this.viewplate_id = viewplate_id;
        }
        /**
         * @return Returns the viewtype_of_compartment.
         */
        public String getViewtype_of_compartment() {
                return viewtype_of_compartment;
        }
        /**
         * @param viewtype_of_compartment The viewtype_of_compartment to set.
         */
        public void setViewtype_of_compartment(String viewtype_of_compartment) {
                this.viewtype_of_compartment = viewtype_of_compartment;
        }
        /**
         * @return Returns the displaypid.
         */
        public String getDisplaypid() {
                return displaypid;
        }
        /**
         * @param displaypid The displaypid to set.
         */
        public void setDisplaypid(String displaypid) {
                this.displaypid = displaypid;
        }
        /**
         * @return Returns the pid.
         */
        public String getPid() {
                return pid;
        }
        /**
         * @param pid The pid to set.
         */
        public void setPid(String pid) {
                this.pid = pid;
        }

        /**
         * @return Returns the fridgeaccno.
         */
        public String getFridgeaccno() {
                return fridgeaccno;
        }
        /**
         * @param fridgeaccno The fridgeaccno to set.
         */
```

```
        public void setFridgeaccno(String fridgeaccno) {
                this.fridgeaccno = fridgeaccno;
        }
        /**
         * @return Returns the fridgefrezno.
         */
        public String getFridgefrezno() {
                return fridgefrezno;
        }
        /**
         * @param fridgefrezno The fridgefrezno to set.
         */
        public void setFridgefrezno(String fridgefrezno) {
                this.fridgefrezno = fridgefrezno;
        }
        /**
         * @return Returns the labno.
         */
        public String getLabno() {
                return labno;
        }
        /**
         * @param labno The labno to set.
         */
        public void setLabno(String labno) {
                this.labno = labno;
        }
        /**
         * @return Returns the typeofcompartment.
         */
        public String getTypeofcompartment() {
                return typeofcompartment;
        }
        /**
         * @param typeofcompartment The typeofcompartment to set.
         */
        public void setTypeofcompartment(String typeofcompartment) {
                this.typeofcompartment = typeofcompartment;
        }


        /**
         * @return Returns the editpid.
         */
        public String getEditpid() {
                return editpid;
        }
        /**
```

```
 * @param editpid The editpid to set.
 */
public void setEditpid(String editpid) {
        this.editpid = editpid;
}
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/storage/StorageParametersAction.java

```
/*
 * Created on Oct 4, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.storage;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author pprasad
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class StorageParametersAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub

                HttpSession session = req.getSession(true);

                String uname=(String) session.getAttribute("user");
                // user identification
                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                        return am.findForward(msg);
                }
```

```


                    String pid=req.getParameter("pid");
                    session.setAttribute("storagepid",pid);
                    return am.findForward("Storageinsert");
            }
    }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/storage/EditStorageIdAction.java

```
/*
 * Created on Oct 9, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.storage;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
/**
 * @author pprasad
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class EditStorageIdAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {
                        HttpSession session = req.getSession(true);
                        String uname=(String) session.getAttribute("user");
                // user identification
```

```
                 if((String)session.getAttribute("user")==null){
                                 String msg="logout";
                                 return am.findForward(msg);
                         }
     String str="editstorage";
         Connection con=null;
         Statement st=null;
         ResultSet rs=null;
         Vector v=new Vector();
         try{
                 ServletContext context = servlet.getServletContext();
                 DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                 con=dataSource.getConnection();
                 st=con.createStatement();
             rs=st.executeQuery("SELECT DNA_Extraction_tracking.dna_plate_id FROM DNA_Extraction_tracking,DNA_Stora
ge where dna_extraction_tracking.upsc_id =’"+req.getSession().getAttribute("upsc")+"’ and DNA_Extraction_tracking.dna_plat
e_id=dna_storage.dna_plate_id");
             while(rs.next()){
                                 String editpid=rs.getString(1);
                                 v.add(editpid);
                         }
                         con.close();
                 }catch(Exception e){
                         System.out.println(e);
                         }
                  req.getSession().setAttribute("editstoragevector",v);
                 return am.findForward(str);
                 }
         }
./WEB-INF/src/org/icrisat/lims/sampletracking/storage/EditStorageDetailsAction.java


/*
 * Created on Oct 9, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.storage;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
```

```
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author pprasad
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class EditStorageDetailsAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {
                        HttpSession session = req.getSession(true);
                        String uname=(String) session.getAttribute("user");
                // user identification
                if((String)session.getAttribute("user")==null){
                                String msg="logout";
                                return am.findForward(msg);
                        }


                // TODO Auto-generated method stub

                Connection con=null;
                Statement st=null;
                ResultSet rs=null;

                String editpid=req.getParameter("editpid");
                String editlabno=null;
                String editcoldroomno=null;
                String editfridgeaccno=null;
                String editfridgefrezno=null;
                String edittypeofcompartment=null;

                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                    rs=st.executeQuery("SELECT * FROM DNA_Storage where DNA_Storage.upsc_id ='"+req.getSession().g
etAttribute("upsc")+"' and DNA_Storage.dna_plate_id='"+editpid+"'");
```

```
                    while(rs.next()){
                        editlabno=rs.getString(2);
                        editcoldroomno=rs.getString(3);
                                editfridgeaccno=rs.getString(4);
                                editfridgefrezno=rs.getString(5);
                                edittypeofcompartment=rs.getString(6);
                         }
                                con.close();
                        }catch(Exception e){
                                System.out.println(e);
                        }

                session.setAttribute("Editstoragepid",editpid);
                session.setAttribute("editlabno",editlabno);
                session.setAttribute("editcoldroomno",editcoldroomno);
                session.setAttribute("editfridgeaccno",editfridgeaccno);
                session.setAttribute("editfridgefrezno",editfridgefrezno);
                session.setAttribute("edittypeofcompartment",edittypeofcompartment);
                return am.findForward("EditStorageupdate");
        }
}./WEB-INF/src/org/icrisat/lims/sampletracking/markers/CreateSubsetAction.java


/*
 * Created on Sep 29, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.markers;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
import java.sql.Timestamp;
import java.util.ArrayList;
import java.util.List;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionError;
```

```
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author tpraveenreddy
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class CreateSubsetAction extends Action {

        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                ActionErrors ae=new ActionErrors();
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                //
                String button=req.getParameter("button");
                String strMSName1=(String)session.getAttribute("markersubsetname");
                String strEType=req.getParameter("electype");
                String strUserid=(String)req.getSession().getAttribute("user");
                String str="";
                Connection con=null;
                PreparedStatement pstmt=null;

                // system date
                ///timestamp code
        java.util.Date utilDate=new java.util.Date(System.currentTimeMillis());
                Timestamp sqldate=new Timestamp(utilDate.getTime());
                Timestamp ts=new Timestamp(sqldate.getTime());

                //ArrayList markers=new ArrayList();
                String markers1="";
                Statement st=null;
                ResultSet rs=null;
                //        creating connection
                ArrayList allMarkers=new ArrayList();
                ArrayList markers=new ArrayList();
                String strMSName="";
                try{
                        ServletContext context=servlet.getServletContext();
```

```
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                        st=con.createStatement();
                        if(req.getQueryString().equals("submit")){
                                strMSName=(String)session.getAttribute("strMSName");
                                pstmt=con.prepareStatement("insert into marker_subsets values(?,?,?,?,?)");
                                ArrayList m1=(ArrayList)session.getAttribute("markers");

                                for(int i=0;i<m1.size();i++){
                                        String sMarkers = (String) m1.get(i);
                                        pstmt.setString(1,strMSName);
                                        pstmt.setString(2,sMarkers);
                                        pstmt.setString(3,strEType);
                                        pstmt.setTimestamp(4,ts);
                                        pstmt.setString(5,strUserid);
                                        pstmt.addBatch();
                                }
                                pstmt.executeBatch();
                                pstmt.close();

                                str="submit";
                        }else {
                                strMSName=req.getParameter("markersubsetname");
                                String[] marker=req.getParameterValues("check");
                                if(session.getAttribute("markers")!=null){
                                        ArrayList prevMarkers=new ArrayList();
                                        prevMarkers=(ArrayList)session.getAttribute("markers");
                                        Object[] array = prevMarkers.toArray();
                                        for (int i = 0; i < array.length; i++){
                                                markers.add(array[i].toString());
                                        }
                                }
                                for(int i=0;i<marker.length;i++){
                                        markers.add(marker[i]);
                                }
                                List finalList = new ArrayList(1);
                                for(int z=0;z<markers.size();z++){
                                        String sMarkers = (String) markers.get(z);
                                        if (!finalList.contains(sMarkers)) {

                                        finalList.add(sMarkers);
                                        }
                                }
                                //System.out.println("finalList for confirm in create Subset Action ="+finalList);
                                session.setAttribute("markers",finalList);
                                //session.setAttribute("finalList",finalList);
                                session.setAttribute("strMSName",strMSName);
```

```
                                rs=st.executeQuery("select * from marker_subsets where marker_subset_name='"+strMS
Name+"'" );
                                if(rs.next()){
                                        ae.add("myerrors", new ActionError("subset.exists"));
                                        saveErrors(req, ae);
                                        return (new ActionForward(am.getInput()));

                                }
                                str="confirm";
                        }
                  }catch(Exception e){e.printStackTrace();}
                  finally{
                       try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return am.findForward(str);
         }
  }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/markers/PageNavigationAction.java

```
package org.icrisat.lims.sampletracking.markers;

import java.util.ArrayList;
import java.util.List;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 *   created on Jul 11, 2008
 * @ author psrikalyani
 */
public class PageNavigationAction extends Action{
         public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
```

```
                if(session!=null){
                        session.removeAttribute("check");
                }
                ArrayList markers=new ArrayList();
                String msg="";
                ArrayList ses = new ArrayList();
                String subsetName="";
                String queryString=req.getQueryString();
                subsetName=req.getParameter("markersubsetname");
                session.setAttribute("sname", subsetName);
                String clear="no";
                String sel="no";
                session.setAttribute("clear", clear);
                if(queryString.contains("true")){
                        String[] marker=req.getParameterValues("check");
                        //String previousMarkers=(String)req.getSession().getAttribute("markers");
                        if(session.getAttribute("markers")!=null){
                                ArrayList prevMarkers=new ArrayList();
                                prevMarkers=(ArrayList)session.getAttribute("markers");
                                Object[] array = prevMarkers.toArray();
                                for (int i = 0; i < array.length; i++){
                                        markers.add(array[i].toString());
                                }
                        }
                        for(int i=0;i<marker.length;i++){
                                //markers1=markers1+marker[i]+"~!~";
                                markers.add(marker[i]);
                        }
                        List finalList = new ArrayList(1);
                        for(int z=0;z<markers.size();z++){
                                String sMarkers = (String) markers.get(z);
                                if (!finalList.contains(sMarkers)) {
                                        finalList.add(sMarkers);
                                }
                        }
                        session.setAttribute("markers",finalList);
                        msg="page";
                        //session.setAttribute("samples", samples);
                }else{
                        ses=(ArrayList)session.getAttribute("markers");
                        session.setAttribute("markers", ses);
                        msg="page";
                }
                /*if(req.getParameter("str").equals("markersSession")){
                        subsetName=req.getParameter("markersubsetname");
                        String sMarkers="";
                        sMarkers=(String)session.getAttribute("markers");
                        session.setAttribute("markers", sMarkers);
```

```
                        session.setAttribute("sname", subsetName);
                        msg="submit";
                        return am.findForward(msg);
                }*/
                session.setAttribute("sel", sel);
                return am.findForward(msg);
        }
}

```

./WEB-INF/src/org/icrisat/lims/sampletracking/markers/MarkerListAction.java

```
/*
 * Created on Aug 5, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.markers;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.List;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.RetrieveCropAction;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class MarkerListAction extends Action{
```

```
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("markervector");
                        session.removeAttribute("electype");
                        session.removeAttribute("clear");
                        session.removeAttribute("sel");
                }
                Connection con=null;
                ResultSet rs=null;
                ResultSet rs1=null;

                Statement st=null;

                ResultSet result=null;



                Statement st1=null;
                Statement stmtMarkers=null;
                ResultSet rsMarkers=null;
                String strMarkers="";
                String markerData="";
                String mName="";
                String mLabel="";
                String temp="";
                String allelSize="";
                Vector v=new Vector();
                ActionErrors ae=new ActionErrors();
                String crop="";
                PreparedStatement pst=null;
                ArrayList markers=new ArrayList();
                ArrayList ses = new ArrayList();
                String clear="yes";
                try{
//                      creating connection
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();
                        String user=req.getSession().getAttribute("upsc").toString();
                        String userid=req.getSession().getAttribute("user").toString();
```

```
                        String sel="";

                        //if(req.getQueryString().equals("markers")){
                                String etype=req.getParameter("electype");

                                String electype="";
                                if(etype.equalsIgnoreCase("gel"))
                                                electype="PAGE";
                                else if(etype.equalsIgnoreCase("ce"))
                                            electype="Capillary";
                                req.getSession().setAttribute("electype",electype);

                                if((req.getParameter("cropList")==null)||(req.getParameter("cropList")==("")){
                                        crop=(String)session.getAttribute("crop");
                                        sel="no";
                                }else{
                                        session.removeAttribute("sel");
                                        crop=req.getParameter("cropList");
                                        sel="yes";
                                        session.setAttribute("sel", sel);
                                }
                                if(req.getQueryString().equals("crops")){
                                        if((req.getParameterValues("check"))!=null){
                                                String[] marker=req.getParameterValues("check");
                                                if(session.getAttribute("markers")!=null){
                                                        ArrayList prevMarkers=new ArrayList();
                                                        prevMarkers=(ArrayList)session.getAttribute("markers");

                                                        Object[] array = prevMarkers.toArray();
                                                for (int i = 0; i < array.length; i++){
                                                        markers.add(array[i].toString());

                                                }
                                                }
                                                for(int i=0;i<marker.length;i++){
                                                        //markers1=markers1+marker[i]+"~!~";

                                                        markers.add(marker[i]);
                                                }
                                                List finalList = new ArrayList(1);
                                                for(int z=0;z<markers.size();z++){
                                                        String sMarkers = (String) markers.get(z);
                                                        if (!finalList.contains(sMarkers)) {

                                                        finalList.add(sMarkers);
                                                        }
                                                }
                                                session.setAttribute("markers",finalList);
```

```
130                                         }else{
131                                                 ses=(ArrayList)session.getAttribute("markers");
132                                                 session.setAttribute("markers", ses);
133
134                                         }
135                                         //session.setAttribute("clear", clear);
136
137                                 }
138                                 st=con.createStatement();
139                                 stmtMarkers=con.createStatement();
140
141                                 if(electype.equalsIgnoreCase("Capillary")){
142                                         rsMarkers=stmtMarkers.executeQuery("select marker_name from lims_pcr_marke
rs where (Lower(crop)='" + crop.toLowerCase()+ "') order by marker_name");
143                                         while(rsMarkers.next()){
144                                                 strMarkers=strMarkers +"'"+ rsMarkers.getString("marker_name") +"'
,";
145                                         }
146                                         rs=st.executeQuery("SELECT * FROM LIMS_PCR_Reactors INNER JOIN LIMS_PCR_Ma
rkers ON LIMS_PCR_Reactors.PCR_Reaction_Id = LIMS_PCR_Markers.PCR_Reaction_ID WHERE(Lower(LIMS_PCR_Markers.Electrophoresis
_Type) = 'page,capillary' OR Lower(LIMS_PCR_Markers.Electrophoresis_Type) = 'capillary') AND (LIMS_PCR_Markers.Marker_Name
 IN ("+ strMarkers.substring(0,strMarkers.length()-1) +")) order by marker_name");
147
148                                 }else if(electype.equalsIgnoreCase("PAGE")){
149                                         rs=st.executeQuery("SELECT * FROM LIMS_PCR_Reactors INNER JOIN LIMS_PCR_Ma
rkers ON LIMS_PCR_Reactors.PCR_Reaction_Id = LIMS_PCR_Markers.PCR_Reaction_ID WHERE(Lower(LIMS_PCR_Markers.Electrophoresis
_Type) = 'page,capillary' OR Lower(LIMS_PCR_Markers.Electrophoresis_Type) = 'page') AND (LIMS_PCR_Markers.Marker_Name IN (
SELECT Marker_Name FROM LIMS_PCR_Markers WHERE (Lower(crop)='" + crop.toLowerCase()+ "') AND (Lower(Electrophoresis_Type)=
'page,capillary' or Lower(Electrophoresis_Type)='page'))) order by marker_name");
150                                 }
151                                 pst=con.prepareStatement("SELECT DISTINCT Cycle_Touchdown_Temp_From_In_DegreeC, Cy
cle_Touchdown_Temp_To_In_DegreeC, Cycle_Fixed_Temp_In_DegreeC FROM LIMS_PCR_Protocols WHERE(PCR_Program_Id = ?)");
152
153                                 while(rs.next()){
154                                         pst.setString(1,rs.getString("PCR_Program_Id"));
155                                         rs1=pst.executeQuery();
156                                          MultiplexForm mb=new MultiplexForm();
157                                          mb.setMarker_name(rs.getString("Marker_Name"));
158                                          mName=rs.getString("Marker_Name");
159
160                                         if((rs.getString("Forward_Primer_Label")!=null)&&(!rs.getString("Forward_P
rimer_Label").equalsIgnoreCase("none"))){
161                                            mb.setLabel(rs.getString("Forward_Primer_Label"));
162                                                 mLabel=rs.getString("Forward_Primer_Label");
163                                         }else if((rs.getString("Reverse_Primer_Label")!=null)&&(!rs.getString("Rev
erse_Primer_Label").equalsIgnoreCase("none"))){
164                                            mb.setLabel(rs.getString("Reverse_Primer_Label"));
165                                                 mLabel=rs.getString("Reverse_Primer_Label");
```

```
166                                         }else{
167                                         mLabel="NotLabeled";
168                                            mb.setLabel("NotLabeled");
169                                         }
170
171                                      rs1.next();
172                                      String t1=String.valueOf(rs1.getFloat("Cycle_Touchdown_Temp_From_In_DegreeC"))
;
173                                      String t2=String.valueOf(rs1.getFloat("Cycle_Touchdown_Temp_To_In_DegreeC"));
174                                      String t3=String.valueOf(rs1.getFloat("Cycle_Fixed_Temp_In_DegreeC"));
175
176                                     if(t1!=null){
177                                           mb.setTemp(t1+"-"+t2);
178                                           temp=t1+"-"+t2;
179                                     }else{
180                                           mb.setTemp(t3);
181                                           temp=t3;
182                                     }
183                                          mb.setSize(rs.getString("Allele_Size_Range"));
184                                          allelSize=rs.getString("Allele_Size_Range");
185                                     v.add(mb);
186                                    markerData=markerData+mName+"!~!"+mLabel+"!~!"+temp+"!~!"+allelSize+"!~!~!";
187
188                                 }
189                                 //System.out.println(markerData);
190                                 String recCount=v.size()+"";
191                                 //clear="yes";
192                                 session.setAttribute("recCount", recCount);
193                                 session.setAttribute("markervector",markerData);
194                                 session.setAttribute("electype",electype);
195                                 session.setAttribute("etype", etype);
196                                 session.setAttribute("clear",clear);
197
198                                 /** retreiving other crops with same cotyledon type   **/
199                                 RetrieveCropAction cropCot=new RetrieveCropAction();
200                                 Vector v1=cropCot.cotyledonCrop(con, crop);
201                                 session.setAttribute("multiplexcropvector1",v1);
202
203                 }catch(Exception e){e.printStackTrace();}
204                         finally{
205                             try{
206                                 if(rs!=null) rs.close();
207                                 if(st!=null) st.close();
208                                 if(con!=null) con.close();
209                             }catch(Exception e){System.out.println(e);}
210                         }
211                 return am.findForward("next");
212         }
```

```
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/markers/StockCalcAction.java

```
/*
 * Created on Aug 30, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.markers;

import java.io.File;
import java.io.FileOutputStream;
import java.io.OutputStream;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

import org.icrisat.lims.common.RoundFloatValuesAction;

import com.Ostermiller.util.ExcelCSVPrinter;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class StockCalcAction extends Action {
        Connection con=null;
        Statement st=null;
        ResultSet rs=null;
```

```
    45          public ActionForward execute(ActionMapping am, ActionForm af,
    46                          HttpServletRequest req, HttpServletResponse res) throws Exception {
    47                  // TODO Auto-generated method stub
    48  //              user identification
    49                  HttpSession session=req.getSession(true);
    50                  if((String)session.getAttribute("user")==null){
    51
    52                          String msg="logout";
    53                          return am.findForward(msg);
    54                  }
    55
    56                  RoundFloatValuesAction round=new RoundFloatValuesAction();
    57                  Vector v=new Vector();
    58                  DynaActionForm df = (DynaActionForm)af;
    59                  //double dntp=Double.parseDouble(df.get("dntp").toString());
    60                  //double primer=Double.parseDouble(df.get("primer").toString());
    61                  //double buffer=Double.parseDouble(df.get("buffer").toString());
    62                  //double mgcon=0.0;
    63                  //double mgstock=Double.parseDouble(df.get("mgstock").toString());
    64                  //double taq=Double.parseDouble(df.get("taq").toString());
    65                  double finalr=Double.parseDouble(df.get("finalr").toString());
    66
    67                  int sample=Integer.parseInt(df.get("sample").toString());//req.getParameter("sample"));
    68                  //sample=sample+1;
    69                  //mgcon=Double.parseDouble(df.get("mgcon").toString());//req.getParameter("mgcon"));
    70                  //mgcon=mgcon/buffer;
    71                  String filepath="";
    72                  Vector markers=(Vector)req.getSession().getAttribute("stockmarkers");
    73                  String electype=(String)req.getSession().getAttribute("electype");
    74
    75                  filepath=req.getSession().getServletContext().getRealPath("//")+"//"+"DisplayFiles";
    76                  if(!new File(filepath).exists())
    77                  new File(filepath).mkdir();
    78                  String fname=filepath+"/"+"Stock_Calculations.csv";
    79          File file=new File(fname);
    80                  file.createNewFile();
    81          OutputStream o=new FileOutputStream(file);
    82                  ExcelCSVPrinter p  = new ExcelCSVPrinter(o);
    83              p.writeln(new String[]{"Primer","Temp","Primer_Conc","dNTP_Conc(mM)","Mg++_Conc(mM)","Buffer_Conc","Ta
q_Conc","Water_Conc","Primer_Vol","dNTP_Vol","Mg++_Vol","Buffer_Vol","Taq_Vol","Water_Vol"});
    84                  try{
    85                          //creating connection
    86                          ServletContext context=servlet.getServletContext();
    87                          DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
    88                          con=datasource.getConnection();
    89
    90                          st=con.createStatement();
    91                          for(int i=0;i<=markers.indexOf(markers.lastElement());i++)
```

```
                        {
                                StockCalcForm sb=new StockCalcForm();
                                String marker=(String)markers.elementAt(i);
                                if(electype.equalsIgnoreCase("GEL"))
                                        rs=st.executeQuery("SELECT * FROM LIMS_PCR_Markers INNER JOIN LIMS_PCR_Rea
ctors ON LIMS_PCR_Markers.PCR_Reaction_Id = LIMS_PCR_Reactors.PCR_Reaction_Id INNER JOIN LIMS_PCR_Protocols ON LIMS_PCR_Ma
rkers.PCR_Program_Id = LIMS_PCR_Protocols.PCR_Program_Id WHERE(LIMS_PCR_Markers.Marker_name = '"+marker+"') AND (Lower(LIM
S_PCR_Markers.Electrophoresis_Type) = 'page' OR Lower(LIMS_PCR_Markers.Electrophoresis_Type) = 'page,capillary')");
                                else if(electype.equalsIgnoreCase("CE"))
                                rs=st.executeQuery("SELECT * FROM LIMS_PCR_Markers INNER JOIN LIMS_PCR_Reactors ON
 LIMS_PCR_Markers.PCR_Reaction_ID = LIMS_PCR_Reactors.PCR_Reaction_Id INNER JOIN LIMS_PCR_Protocols ON LIMS_PCR_Markers.PC
R_Program_Id = LIMS_PCR_Protocols.PCR_Program_Id WHERE(LIMS_PCR_Markers.Marker_Name = '"+marker+"') AND (Lower(LIMS_PCR_Ma
rkers.Electrophoresis_type) = 'capillary' OR Lower(LIMS_PCR_Markers.Electrophoresis_Type) = 'page,capillary')");
                                rs.next();
                            sb.setMarker(rs.getString("Marker_name"));
                            String t1=String.valueOf(rs.getFloat("Cycle_Touchdown_Temp_From_In_DegreeC"));
                            //String t2=String.valueOf(rs.getFloat("Cycle_Touchdown_Temp_To_In_DegreeC"));
                            String t3=String.valueOf(rs.getFloat("Cycle_Fixed_Temp_In_DegreeC"));

                            if(t1!=null)
                                sb.setTemp(rs.getInt("Cycle_Touchdown_Temp_From_In_DegreeC")+"-"+rs.getInt("Cycle_
Touchdown_Temp_To_In_DegreeC"));
                            else if(t3!=null)
                                sb.setTemp(rs.getString("Cycle_Fixed_Temp_In_DegreeC"));


                            sb.setPrimer_conc(rs.getDouble("Primer_Conc"));
                            sb.setPrimer_unit(rs.getString("primer_unit"));
                            //System.out.println("***** "+(rs.getDouble("primer_volume"))+"    "+finalr+"     "+rs
.getDouble("total_volume"));
                            double pvol = round.roundThree((rs.getDouble("primer_volume")*finalr)/rs.getDouble("to
tal_volume"));
                            double primervol=round.roundThree(pvol*sample);
                           // System.out.println("***** "+(rs.getDouble("primer_volume"))+"    "+finalr+"     "+rs
.getDouble("total_volume")+"   &&&&& primervol="+primervol);

                            sb.setPrimer_vol(primervol);
                         sb.setDntp_conc(rs.getDouble("dNTP_Conc"));

                           double dvol=round.roundThree((rs.getDouble("dntp_volume")*finalr)/rs.getDouble("total_v
olume"));
                           double dntpvol=round.roundThree(dvol*sample);
                           sb.setDntp_vol(dntpvol);
                           sb.setMg_conc(rs.getDouble("MgCl2_Conc"));

                           double mgclvol;
                           double mvol=0;
                           mvol=round.roundThree((rs.getDouble("mgcl2_volume")*finalr)/rs.getDouble("total_volume"
```

```
));
                                mgclvol=round.roundThree(mvol*sample);

                                sb.setMg_vol(mgclvol);

                                sb.setBuffer_conc(rs.getDouble("Buffer_Conc"));
                                double bvol =round.roundThree((rs.getDouble("buffer_volume")*finalr)/rs.getDouble("tota
l_volume"));
                                double BufferVol =round.roundThree(bvol*sample);
                                sb.setBuffer_vol(BufferVol);

                                sb.setTaq_conc(rs.getDouble("Taq_Conc"));
                                double tvol=round.roundThree((rs.getDouble("taq_volume")*finalr)/rs.getDouble("total_vo
lume"));
                                double TaqVol = round.roundThree(tvol*sample);
                                sb.setTaq_vol(TaqVol);

                               double Wvol =round.roundThree((rs.getDouble("water")*finalr)/rs.getDouble("total_volume"
));
                                sb.setWater(Wvol);
                                double Watervol =round.roundThree(Wvol*sample);
                                if(Wvol<0)
                                       sb.setWater_color("color:white;background-color:red");
                                else
                                       sb.setWater_color("background-color:white");
                                sb.setWater_vol(Watervol);

                                     v.add(sb);
                            p.writeln(new String[]{marker,String.valueOf(sb.getTemp()),String.valueOf(sb.getPrimer_con
c()),String.valueOf(sb.getDntp_conc()),String.valueOf(sb.getMg_conc()),String.valueOf(sb.getBuffer_conc()),String.valueOf(
sb.getTaq_conc()),String.valueOf(sb.getWater()),String.valueOf(primervol),String.valueOf(dntpvol),String.valueOf(mgclvol),
String.valueOf(BufferVol),String.valueOf(TaqVol),String.valueOf(Watervol)});
                            }
                  }catch(Exception e){System.out.println(e.toString());}
                  finally{
                                try{
                                      if(rs!=null)rs.close();
                                      if(st!=null)st.close();
                                      if(con!=null)con.close();
                                    }catch(Exception e){System.out.println(e);}
                  }
                  req.getSession().setAttribute("stockcalc",v);
                  session.setAttribute("num",String.valueOf(sample));
                  return am.findForward("markerstockcalc");
          }
  }
./WEB-INF/src/org/icrisat/lims/sampletracking/markers/MarkerInsertAction.java
```

```
/*
 * Created on Aug 9, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.markers;

import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
import java.sql.Timestamp;


import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class MarkerInsertAction extends Action {
        Connection con;
        ResultSet rs;
        Statement stmt;
        PreparedStatement pstmt=null;
        PreparedStatement pstmt1=null;
        Statement pcrst=null;
        ResultSet pcrrs=null;
        PreparedStatement pstmt2=null;

        ResultSet rsp=null;
        Statement stmt1=null;

```

```
    48          public void InsertData(HttpServletRequest req,Connection con,ServletContext context,String Plate_id,int pa
rt,String marker, String limsid){
    49                  String m13_marker="";
    50                  String markerIns="";
    51                  try{
    52                          if(!(marker.equals("null"))){
    53                                  if(marker.toLowerCase().startsWith("m13")){
    54                                          String[] marker_name=marker.split("-;-");
    55                                          m13_marker=marker_name[0];
    56                                          markerIns=marker;
    57                                  }else{
    58                                          //m13_marker=marker;
    59                                          String[] marker_name=marker.split("-;-");
    60                                          m13_marker=marker_name[0];
    61                                          markerIns=marker_name[0];
    62                                  }
    63                                  pstmt2=con.prepareStatement("insert into pcr_marker_well values('"+Plate_id+"','"+p
art+",'"+markerIns+"')");
    64                                  pstmt2.executeUpdate();
    65                          }else{
    66                                  markerIns=marker;
    67                                  pstmt2=con.prepareStatement("insert into pcr_marker_well values('"+Plate_id+"','"+p
art+",'"+markerIns+"')");
    68                                  pstmt2.executeUpdate();
    69                          }
    70                  }catch(Exception e){
    71                          System.out.println(e);
    72                  }
    73
    74          }
    75
    76
    77          public ActionForward execute(ActionMapping am, ActionForm af,
    78                          HttpServletRequest req, HttpServletResponse res) throws Exception {
    79                  // TODO Auto-generated method stub
    80  //              user identification
    81                  HttpSession session=req.getSession(true);
    82                  if((String)session.getAttribute("user")==null){
    83                           String msg="logout";
    84                          return am.findForward(msg);
    85                  }
    86                  //
    87                  String str="";
    88                  String SessionPlate = "";
    89                  String basePlate="";
    90                  String assignedPlate="";
    91                  String etype=(String)req.getSession().getAttribute("electype");
    92                  String ptype=req.getParameter("plateType");
```

```
                try{
                        //creating connection
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                        if(req.getParameter("ChkPlateids").equals("insert")){
                                if(session.getAttribute("paramvar") == null){
                                        SessionPlate = (String)session.getAttribute("plate");
                                }else{
                                        SessionPlate = (String)session.getAttribute("pcrPlateName");
                                }

                                str="singlemarker2";

                                String[] mnamef=null;String marker="";
                                String sample="";
                                int part=0;
                                String[] splitValues=req.getParameter("values").split("!!~~!!");
                                for(int sv=0;sv<splitValues.length;sv++){
                                        String[] strValues=splitValues[sv].split("!~!~");
                                        String[] plates=strValues[1].split("!!~~");
                                        basePlate=plates[1].trim();
                                        assignedPlate=plates[0].trim();
                                        pstmt1=con.prepareStatement("insert into pcr_marker values('"+assignedPlat
e+"','"+etype+"','"+basePlate+"','"+session.getAttribute("upsc").toString()+"','"+new Timestamp(System.currentTimeMillis()
)+"')");
                                        pstmt1.executeUpdate();
                                        mnamef=strValues[0].split(",,");
                                        for(int s=0;s<mnamef.length;s++){
                                                String[] markers=mnamef[s].split("&&");
                                                //part=s+1;
                                                part=Integer.parseInt(markers[3]);
                                                marker=markers[4];
                                                sample=markers[0];
                                                if(!(marker.equals("null"))){
                                                        new MarkerInsertAction().InsertData(req,con,context,assign
edPlate,part,marker,sample);
                                                }
                                        }
                                }
                        }else{
                                stmt1=con.createStatement();
                                PrintWriter writer=res.getWriter();
                                res.setContentType("text/xml");
                                res.setHeader("Cache-Control", "no-cache");
                                rsp=stmt1.executeQuery("select PCR_Plate_Id from pcr_marker where lower(PCR_Plate_
Id)='" + req.getParameter("ChkPlateids").toLowerCase() + "'");
```

```
                                if(rsp.next()){
                                        writer.println("1");
                                }
                                return null;
                        }
                }catch(Exception e){e.printStackTrace();}
                finally{
              try{
                        if(con!=null) con.close();
                 }catch(Exception e){System.out.println(e);}
                }
                return am.findForward(str);
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/markers/RetrievePlateAction.java

```
/*
 * Created on Oct 18, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.markers;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
```

```
 */
public class RetrievePlateAction extends Action{


        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                HttpSession session=req.getSession(true);
                String msg="";
                String str1="";

                /********** for User identification *********/
                if((String)session.getAttribute("user")==null){
                         msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("markerSub");
                }
                Connection con=null;
                Statement st=null;
                Statement stmtMarkerSubsets;
                ResultSet rs=null;
                ResultSet rs1=null;
                Vector v = new Vector();
                String ps = "";
                ArrayList list=new ArrayList();
                try{
                        int i=0;
                        /************* DataBase Connection ***********/
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                        st=con.createStatement();
                        if(req.getParameter("param")!=null){
                                if(req.getParameter("param").equals("tree")){
                                        if(session != null){
                                                session.removeAttribute("paramvar");

                                        }
                                 rs=st.executeQuery("SELECT DISTINCT PCR_Plate_Id FROM PCR_Tracking WHERE(PCR_Plat
e_Id NOT IN(SELECT DISTINCT (PCR_Plate_Id)FROM pcr_marker WHERE PCR_Plate_Id IS NOT NULL)) and upsc_id = '"+req.getSession
().getAttribute("upsc")+"'");
                                 while(rs.next())
                                        list.add(rs.getString(1));

                                 req.getSession().setAttribute("list",list);
                                 msg="plateassociate1";
```

```
                                 str1=req.getParameter("param");
                                 session.setAttribute("param", str1);
                                }else if(req.getParameter("param").equals("pcr")){
                                        if(session.getAttribute("PCRtype").equals("upload")){
                                                String num=String.valueOf(session.getAttribute("NoOfPlates"));
                                                session.setAttribute("paramvar", req.getParameter("param"));
                                                msg="pcrplateassociate";

                                        }else{
                                                session.setAttribute("paramvar", req.getParameter("param"));
                                                msg="pcrplateassociate";
                                        }
                                        str1=req.getParameter("param");
                                        session.setAttribute("param", str1);
                                        return am.findForward(msg);
                                }
                        }else{
                                System.out.println("if Param == null");
                                 if(req.getParameter("type")==null){
                                        // msg="plateassociate1";
                                 }else{
                                         String etype=req.getParameter("electro_type");
                                         String electype="";

                                         if(etype.equalsIgnoreCase("gel")){
                                                electype="PAGE";
                                         }else if(etype.equalsIgnoreCase("ce")){
                                                electype="Capillary";
                                         }
                                         stmtMarkerSubsets=con.createStatement();
                                         rs1=stmtMarkerSubsets.executeQuery("select distinct(marker_subset_name) f
rom marker_subsets where electrophoresis_type='"+etype+"'");
                                         while(rs1.next()){
                                                v.add(rs1.getString(1));
                                         }
                                         req.getSession().setAttribute("electype",electype);
                                         req.getSession().setAttribute("etype",etype);
                                         if(session.getAttribute("paramvar")!=null){
                                                 if(req.getParameter("type").equals("singlemarker")){
                                                         msg="pcrsinglemarker";
                                                 }else{
                                                         msg="pcrmultiplex";
                                                 }
                                         }else{
                                                 if(req.getParameter("type").equals("singlemarker")){
                                                         msg="singlemarker";
                                                 }else{
                                                         msg="multiplex";
```

```
                                                    }
                                            }
                                     }
                                     session.setAttribute("markervector",v);
                            }
                        }catch(Exception e){e.printStackTrace();}
                        finally{
                                    try{
                                            if(rs!=null) rs.close();
                                            if(st!=null) st.close();
                                            if(con!=null) con.close();
                                       }catch(Exception e){System.out.println(e);}
                               }

                    return am.findForward(msg);
            }
    }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/markers/RetrieveSubsetsAction.java

```
package org.icrisat.lims.sampletracking.markers;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.HashMap;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 *   created on Sep 4, 2008
 * @author psrikalyani
 */
public class RetrieveSubsetsAction extends Action{
        Connection con=null;
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                HttpSession session = req.getSession(true);
```

```
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                Statement st=null;
                ResultSet rs=null;
                String subsetName="";
                HashMap markerMap=new HashMap();

                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st = con.createStatement();
                        //System.out.println("select distinct marker_subset_name, marker_name from marker_subsets where user_id='"+session.getAttribute("user")+"'" );
                        rs=st.executeQuery("select distinct marker_subset_name, marker_name from marker_subsets where user_id='"+session.getAttribute("user")+"'" );
                        String entireString="";
                int genotypeCount=0;
                if(rs.next()){
                        subsetName=rs.getString(1);
                        entireString=rs.getString(2);
                        while(rs.next()){
                                String tempSetTypeId=rs.getString(1);
                                if(tempSetTypeId.equals(subsetName)){
                                        entireString=entireString+", "+rs.getString(2);

                                }else{
                                        //markerMap.put(subsetName,entireString);
                                        entireString=rs.getString(2);
                                        genotypeCount++;
                                }
                                subsetName=tempSetTypeId;
                                markerMap.put(subsetName,entireString);
                        }
                }
                         session.setAttribute("subsets",markerMap);
                }catch(Exception e){
                        e.printStackTrace();
                }
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                }
                return am.findForward("sets");
        }
```

```


}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/markers/StockEntryAction.java

```
/*
 * Created on Aug 29, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.markers;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class StockEntryAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
```

```
                DynaActionForm df = (DynaActionForm)af;
                String electype= df.get("electype").toString();
                req.getSession().setAttribute("electype",electype);
                //String crop=df.get("crop").toString();
                String crop=(String)session.getAttribute("crop");


                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                Vector v=new Vector();
                req.getSession().setAttribute("electype",electype);
                try{
//                      creating connection
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                        st=con.createStatement();
                        if(electype.equalsIgnoreCase("GEL"))
                                rs=st.executeQuery("SELECT DISTINCT (Marker_name) FROM LIMS_PCR_Markers WHERE Lowe
r(crop)='" + crop.toLowerCase()+ "' and (Lower(Electrophoresis_Type)='gel' or Lower(Electrophoresis_type)='page,capillary'
)");
                        else if(electype.equalsIgnoreCase("CE"))
                                rs=st.executeQuery("SELECT DISTINCT (Marker_name)FROM LIMS_PCR_Markers WHERE Lower
(crop)='" + crop.toLowerCase() + "' and (Lower(Electrophoresis_Type)='capillary' or Lower(Electrophoresis_type)='page,capi
llary')");
                        while(rs.next())
                        {
                            v.add(rs.getString(1));
                        }

                    }catch(Exception e){System.out.println(e);}
                    finally{
                              try{
                                    if(rs!=null)rs.close();
                                    if(st!=null)st.close();
                                    if(con!=null)con.close();
                                  }catch(Exception e){System.out.println(e);}
                }
            req.getSession().setAttribute("stockvector",v);
        return am.findForward("StockCalc1");
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/markers/MultiplexForm.java

```
/*
```

```
 * Created on Aug 22, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.markers;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class MultiplexForm {

        String marker_name;
        String label;
        String size;
        String temp;
        String status;
        /**
         * @return Returns the status.
         */
        public String getStatus() {
                return status;
        }
        /**
         * @param status The status to set.
         */
        public void setStatus(String status) {
                this.status = status;
        }
        /**
         * @return Returns the stylestr.
         */

        //int size;



        /**
         * @return Returns the temp.
         */
        public String getTemp() {
                return temp;
        }
        /**
         * @param temp The temp to set.
```

```
	 */
	public void setTemp(String temp) {
		this.temp = temp;
	}
	/**
	 * @return Returns the forwad.
	 */
	public String getLabel() {
		return label;
	}
	/**
	 * @param forwad The forwad to set.
	 */
	public void setLabel(String label) {
		this.label = label;
	}
	/**
	 * @return Returns the marker_name.
	 */
	public String getMarker_name() {
		return marker_name;
	}
	/**
	 * @param marker_name The marker_name to set.
	 */
	public void setMarker_name(String marker_name) {
		this.marker_name = marker_name;
	}

	/**
	 * @return Returns the size.
	 */
	public String getSize() {
		return size;
	}
	/**
	 * @param size The size to set.
	 */
	public void setSize(String size) {
		this.size = size;
	}
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/markers/SingleMarkerDetailsAction.java

```
package org.icrisat.lims.sampletracking.markers;

import java.sql.Connection;
```

```

import java.sql.ResultSet;
import java.sql.Statement;

import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.RetrieveCropAction;

/**
 * created on Jul 11, 2008
 * @author psrikalyani
 */
public class SingleMarkerDetailsAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("markervector");
                }
                //
                String str="";
                Connection con=null;
                Statement st=null;
                Statement st1=null;
                Statement stmtMarkerSubsets=null;

                Statement stGenos=null;
                ResultSet rsGenos=null;

                ResultSet rs = null;
                ResultSet result = null;
                ResultSet rsMarkerSubsets = null;
```

```
                ResultSet rsMarkers = null;
                String strMarkers = "";
                Vector v = new Vector();
                Vector v1= new Vector();

                Statement stmtMarkers = null;

                String plateType = "";
                String etype="";
                String electype="";

                String crop = (String)session.getAttribute("crop");
                String plate = "";
                session.setAttribute("plate", plate);
                String samples="";
                String markerData="";
                String NextCrop="No";

                String mLabel="";
                String mName="";
                String subsetsOption="";

                try{
                        v.clear();

                        /************* DataBase Connection ***********/
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();
                        st1=con.createStatement();
                        st=con.createStatement();
                        stmtMarkers=con.createStatement();
                        String op1=req.getParameter("op");
                        plate = req.getParameter("plateid");
                        etype=req.getParameter("electro_type");

                        if(req.getQueryString().equals("subsets")){
                                if(session!=null){
                                        //session.removeAttribute("plateid");
                                        session.removeAttribute("pcr");
                                        session.removeAttribute("subsetsOption");
                                        session.removeAttribute("markervector");
                                        session.removeAttribute("electype");
                                        session.removeAttribute("etype");
                                        session.removeAttribute("SplateType");
                                }
                                /*plate = req.getParameter("plateid");
                                etype=req.getParameter("electro_type");*/
```

```
                                if(etype.equalsIgnoreCase("gel")){
                                        electype="PAGE";
                                 }else if(etype.equalsIgnoreCase("ce")){
                                        electype="Capillary";
                                 }
                                subsetsOption=req.getParameter("htype");
                                if(subsetsOption.equals("yes")){
                                        stmtMarkerSubsets=con.createStatement();
                                        rsMarkerSubsets=stmtMarkerSubsets.executeQuery("select distinct(marker_sub
set_name) from marker_subsets where electrophoresis_type='"+etype+"'");
                                        while(rsMarkerSubsets.next()){
                                                v.add(rsMarkerSubsets.getString(1));
                                        }
                                }
                                if(op1.equals("tree")){
                                        String plateCount="1";
                                        session.setAttribute("NoOfFiles", plateCount);
                                }
                                session.setAttribute("pcr", req.getParameter("type"));
                                session.setAttribute("plateid", plate);
                                req.getSession().setAttribute("electype",electype);
                                req.getSession().setAttribute("etype",etype);
                                session.setAttribute("markervector",v);
                                session.setAttribute("subsetsOption",subsetsOption);
                                str="next";
                        }
                        if(req.getQueryString().equals("next")){
                                String op=(String)session.getAttribute("subsetsOption");
                                if(req.getParameter("electro_type").equals(null))
                                        electype=(String)session.getAttribute("electype");
                                else
                                        electype=req.getParameter("electro_type");

                                if(electype.equalsIgnoreCase("gel")){
                                        electype="PAGE";
                                 }else if(electype.equalsIgnoreCase("ce")){
                                        electype="Capillary";
                                 }
                                String pid="";
                                String strMSValues=req.getParameter("markersubsetlist");
                                //plate=(String)session.getAttribute("plateid");
                                if(op1.equals("pcr")){
                                        if (plate.contains(";")){
                                                String test[] = plate.split(";");
                                                for(int i=0;i<test.length-1;i++){
                                                        pid=pid+"'" +test[i].trim()+"'" +",";

                                                }
```

```
146                                         }else{
147                                                 pid="'" +plate.trim()+"'" +",";
148                                         }
149                                 }else{
150                                         pid="'" +plate.trim()+"'" +",";
151                                 }
152                                 stGenos=con.createStatement();
153                                 rsGenos=stGenos.executeQuery("select distinct genotype_master.genotype_id,pcr_trac
king_well.row_id, pcr_tracking_well.col_id, pcr_tracking_well.pcr_plate_id from pcr_tracking_well inner join genotype_mast
er on pcr_tracking_well.lims_id = genotype_master.lims_id where pcr_tracking_well.pcr_plate_id in ("+ pid.substring(0,pid.
length()-1) +") order by pcr_tracking_well.pcr_plate_id, pcr_tracking_well.row_id,pcr_tracking_well.col_id");
154                                 while(rsGenos.next()){
155                                         //System.out.println(rsGenos.getString(1)+"!@!"+rsGenos.getString(2)+"!@!"
+rsGenos.getString(3)+"!@!"+rsGenos.getString(4));
156                                         samples=samples+rsGenos.getString(1)+"!@!"+rsGenos.getString(2)+"!@!"+rsGe
nos.getString(3)+"!@!"+rsGenos.getString(4)+",";
157                                 }
158                                 session.setAttribute("samples",samples);
159                                 result=st1.executeQuery("select distinct pcr_tracking.plate_type FROM pcr_tracking
 where pcr_plate_id in ("+ pid.substring(0,pid.length()-1) +")");
160                                 while(result.next()){
161                                         plateType=result.getString(1);
162                                 }
163                                 //System.out.println("plate type if req .query string = next "+plateType);
164                                 session.setAttribute("SplateType", plateType);
165                                 session.setAttribute("op", op);
166                                 if((op.equals("yes"))&&(strMSValues!=null)){
167                                         session.removeAttribute("markerData");
168                                         rsMarkers=stmtMarkers.executeQuery("select marker_name from marker_subsets
 where marker_subset_name='"+req.getParameter("markersubsetlist")+"' order by marker_name");
169                                         while(rsMarkers.next()){
170                                                 strMarkers=strMarkers +"'"+ rsMarkers.getString("marker_name") +"'
,";
171                                         }
172
173                                         if(electype.equalsIgnoreCase("Capillary")){
174                                                 rs=st.executeQuery("SELECT * FROM LIMS_PCR_Markers WHERE(Lower(LIM
S_PCR_Markers.Electrophoresis_Type) = 'page,capillary' OR Lower(LIMS_PCR_Markers.Electrophoresis_Type) = 'capillary') AND
(LIMS_PCR_Markers.Marker_Name IN ("+ strMarkers.substring(0,strMarkers.length()-1) +")) order by marker_name");

175                                         }else if(electype.equalsIgnoreCase("PAGE")){
176                                                 rs=st.executeQuery("SELECT * FROM LIMS_PCR_Markers WHERE(Lower(LIM
S_PCR_Markers.Electrophoresis_Type) = 'page,capillary' OR Lower(LIMS_PCR_Markers.Electrophoresis_Type) = 'page') AND (LIMS
_PCR_Markers.Marker_Name IN ("+ strMarkers.substring(0,strMarkers.length()-1) +")) order by marker_name");
177                                         }
178                                 }else if (op.equals("no")){
179                                         if(req.getParameter("insert")!=null){
180                                                 crop=req.getParameter("cropList");
```

```
                                                NextCrop="yes";
                                                session.setattribute("assignedSamples",req.getParameter("values"))
;
                                                session.setattribute("NextCrop", NextCrop);
                                        }else{
                                                crop = (String)session.getAttribute("crop");
                                        }
                                        session.setAttribute("NextCrop", NextCrop);

                                        /** retreiving other crops with same cotyledon type   **/
                                        RetrieveCropAction cropCot=new RetrieveCropAction();
                                        v1=cropCot.cotyledonCrop(con, crop);
                                        session.setAttribute("multiplexcropvector1",v1);

                                        session.setAttribute("cropsVector", v1);
                                        if(electype.equalsIgnoreCase("Capillary")){
                                                rs=st.executeQuery("SELECT * FROM LIMS_PCR_Markers WHERE(Lower(LIM
S_PCR_Markers.Electrophoresis_Type) = 'page,capillary' OR Lower(LIMS_PCR_Markers.Electrophoresis_Type) = 'capillary') AND
(LIMS_PCR_Markers.Marker_Name IN (SELECT Marker_Name FROM LIMS_PCR_Markers WHERE (Lower(crop)='" + crop.toLowerCase()+ "')
 AND (Lower(Electrophoresis_Type)='page,capillary' or Lower(Electrophoresis_Type)='capillary'))) order by marker_name");

                                        }else if(electype.equalsIgnoreCase("PAGE")){
                                                rs=st.executeQuery("SELECT * from LIMS_PCR_Markers WHERE(Lower(LIM
S_PCR_Markers.Electrophoresis_Type) = 'page,capillary' OR Lower(LIMS_PCR_Markers.Electrophoresis_Type) = 'page') AND (LIMS
_PCR_Markers.Marker_Name IN (SELECT Marker_Name FROM LIMS_PCR_Markers WHERE (Lower(crop)='" + crop.toLowerCase()+ "') AND
(Lower(Electrophoresis_Type)='page,capillary' or Lower(Electrophoresis_Type)='page'))) order by marker_name");
                                        }
                                }
                                while(rs.next()){
                                        mName=rs.getString("Marker_Name");
                                        if((rs.getString("Forward_Primer_Label")!=null)&&(!rs.getString("Forward_P
rimer_Label").equalsIgnoreCase("none"))){
                                           mLabel=rs.getString("Forward_Primer_Label");
                                        }else if((rs.getString("Reverse_Primer_Label")!=null)&&(!rs.getString("Rev
erse_Primer_Label").equalsIgnoreCase("none"))){
                                                mLabel=rs.getString("Reverse_Primer_Label");
                                        }else{
                                                mLabel="NotLabeled";
                                        }
                                        markerData=markerData+mName+"!~!"+mLabel+"!~!~!";

                                }

                                str="page2";
                                session.setAttribute("NextCrop", NextCrop);
                                session.setAttribute("markerData",markerData);
                        }
                        }catch(Exception e){e.printStackTrace();}
```

```
                        finally{
                            try{
                                if(rs!=null) rs.close();
                                if(result!=null)result.close();
                                if(rsMarkerSubsets!=null) rsMarkerSubsets.close();
                                if(st1!=null)st1.close();
                                if(st!=null) st.close();
                                if(stmtMarkerSubsets!=null) stmtMarkerSubsets.close();
                                if(con!=null) con.close();
                               }catch(Exception e){
                                   System.out.println(e);
                            }
                        }
                return am.findForward(str);
        }
}


```

./WEB-INF/src/org/icrisat/lims/sampletracking/markers/CalcParametersAction.java

```
/*
 * Created on Aug 29, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.markers;

import java.util.Vector;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class CalcParametersAction extends Action{
```

```
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                String str="";
                Vector v=new Vector();

                str="next";
                DynaActionForm df=(DynaActionForm)af;
                String[] stockmarkers=(String[])df.get("markers");

                for(int i=0;i<stockmarkers.length;i++){
                        //System.out.println(stockmarkers[i]);
                        v.add(i,stockmarkers[i]);
                }
                req.getSession().setAttribute("stockmarkers",v);

                return am.findForward(str);
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/markers/DeleteSubsetsAction.java

```
package org.icrisat.lims.sampletracking.markers;

import java.sql.Connection;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 *   created on Sep 4, 2008
```

```
 * @author psrikalyani
 */
public class DeleteSubsetsAction extends Action{
        Connection con=null;
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res) throws Exception {
                HttpSession session = req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                Statement st=null;
                String[] values =req.getParameterValues("subsetsdel");
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st = con.createStatement();
                        for(int v=0;v<values.length;v++){
                                //System.out.println(values[v]);
                                st.executeUpdate("delete from marker_subsets where marker_subset_name='"+values[v]+"'");
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                }
                return am.findForward("delete");
        }


}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/markers/StockCalcForm.java

```
/*
 * Created on Aug 29, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.markers;


```

```
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class StockCalcForm{

String marker;
String temp;
String primer_unit;
double primer_conc;
double dntp_conc;
double mg_conc;
double buffer_conc;
double taq_conc;
double water_vol;
double primer_vol;
double dntp_vol;
double mg_vol;
double buffer_vol;
double taq_vol;
double water;
String water_color;
public double getBuffer_conc() {
        return buffer_conc;
}
public void setBuffer_conc(double buffer_conc) {
        this.buffer_conc = buffer_conc;
}
public double getBuffer_vol() {
        return buffer_vol;
}
public void setBuffer_vol(double buffer_vol) {
        this.buffer_vol = buffer_vol;
}
public double getDntp_conc() {
        return dntp_conc;
}
public void setDntp_conc(double dntp_conc) {
        this.dntp_conc = dntp_conc;
}
public double getDntp_vol() {
        return dntp_vol;
}
public void setDntp_vol(double dntp_vol) {
        this.dntp_vol = dntp_vol;
}
```

```
public String getMarker() {
        return marker;
}
public void setMarker(String marker) {
        this.marker = marker;
}
public double getMg_conc() {
        return mg_conc;
}
public void setMg_conc(double mg_conc) {
        this.mg_conc = mg_conc;
}
public double getMg_vol() {
        return mg_vol;
}
public void setMg_vol(double mg_vol) {
        this.mg_vol = mg_vol;
}
public double getPrimer_conc() {
        return primer_conc;
}
public void setPrimer_conc(double primer_conc) {
        this.primer_conc = primer_conc;
}
public String getPrimer_unit() {
        return primer_unit;
}
public void setPrimer_unit(String primer_unit) {
        this.primer_unit = primer_unit;
}
public double getPrimer_vol() {
        return primer_vol;
}
public void setPrimer_vol(double primer_vol) {
        this.primer_vol = primer_vol;
}
public double getTaq_conc() {
        return taq_conc;
}
public void setTaq_conc(double taq_conc) {
        this.taq_conc = taq_conc;
}
public double getTaq_vol() {
        return taq_vol;
}
public void setTaq_vol(double taq_vol) {
        this.taq_vol = taq_vol;
}
```

```
public String getTemp() {
        return temp;
}
public void setTemp(String temp) {
        this.temp = temp;
}
public double getWater() {
        return water;
}
public void setWater(double water) {
        this.water = water;
}
public String getWater_color() {
        return water_color;
}
public void setWater_color(String water_color) {
        this.water_color = water_color;
}
public double getWater_vol() {
        return water_vol;
}
public void setWater_vol(double water_vol) {
        this.water_vol = water_vol;
}




}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/GEParametersAction.java

```
/*
 * Created on Sep 5, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.electrophoresis;

import javax.servlet.http.*;

import org.apache.struts.action.*;

/**
 * @author psrikalyani
```

```
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class GEParametersAction extends Action {

        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {

                HttpSession session = req.getSession(true);
//              user identification

                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                //
                DynaActionForm df = (DynaActionForm)af;
                String pid = df.get("gepid").toString();
        session.setAttribute("gepid", pid);
                return am.findForward("gelelec");
        }


}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/ABIAvailabilityAction.java

```
package org.icrisat.lims.sampletracking.electrophoresis;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.text.DateFormat;
import java.text.SimpleDateFormat;

import java.util.Calendar;
import java.util.Date;
import java.util.GregorianCalendar;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
```

```
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author swapna
 *
 */
public class ABIAvailabilityAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                // TODO Auto-generated method stub
                Connection con=null;
                ResultSet rs=null;
                Statement st=null;
                Statement st1=null;
                ResultSet rs1=null;
                String msg="";
                String date="";
                String Fromdate="";
                String  abi_sequencer="";
                //String Abidatetime="";
                String dateTime="";
                String BookeddateTime="";
                String finalEDate="";
                String Todate="";
        //      ArrayList arrslots=new ArrayList();
                int count=1;


                HttpSession session = req.getSession(true);

                if((String)session.getAttribute("user")==null){
                        msg="logout";
                        return am.findForward(msg);
                }

                /*if(session !=null){
                        session.removeAttribute("ABISequencertype");
                }*/

                Calendar cal=new GregorianCalendar();
                String slots="";
                try{
                        //Database connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
```

```
                        con=dataSource.getConnection();

                        Date theDate = new Date();
                        DateFormat formatter = new SimpleDateFormat("dd-MM-yyyy");
                date = formatter.format(theDate);
                        String slotsforSelection="";

                        String[] days={"Sunday","Monday","Tuesday","Wednesday","Thursday","Friday","Saturday"};

                        if(req.getQueryString().equals("availnextslots")){
                                if (session != null) {
                                        session.removeAttribute("slot");
                                }
                                date=(String)session.getAttribute("dates");
                                String startDate=req.getParameter("endDate");
                                String[] sDate=startDate.split("-");
                                String finalSDate="";
                                int intDate=Integer.parseInt(sDate[0]);
                                int intMonth= Integer.parseInt(sDate[1]);
                                int intYear=Integer.parseInt(sDate[2]);

                                cal.clear(Calendar.DAY_OF_MONTH);
                                cal.set(Calendar.MONTH, intMonth-1);
                                cal.set(Calendar.DAY_OF_MONTH,intMonth-1);
                                int ldateMonth=cal.getActualMaximum(Calendar.DAY_OF_MONTH);
                                int firstdateofmonth=cal.getMinimum(Calendar.DAY_OF_MONTH);

                                if(intDate<ldateMonth){
                                        if(intMonth<10){
                                                finalSDate=intDate+1+"-0"+intMonth+"-"+intYear;
                                                finalEDate=intDate+7+"-0"+intMonth+"-"+intYear;
                                        }else{
                                                finalSDate=intDate+1+"-"+intMonth+"-"+intYear;
                                                finalEDate=intDate+7+"-"+intMonth+"-"+intYear;
                                        }
                                }else{
                                        if(intMonth<12){
                                                intMonth=intMonth+1;
                                        }else{
                                                intMonth=cal.get(Calendar.JANUARY);
                                                intYear=intYear+1;
                                        }
                                        intDate=firstdateofmonth;
                                        if(intMonth<10){
                                                finalSDate=intDate+"-0"+intMonth+"-"+intYear;
                                                finalEDate=intDate+7+"-0"+intMonth+"-"+intYear;
                                        }else{
                                                finalSDate=intDate+"-"+intMonth+"-"+intYear;
```

```
                                                finalEDate=intDate+7+"-"+intMonth+"-"+intYear;
                                        }
                                }
                                Fromdate=finalSDate;
                                Todate=finalEDate;
                                abi_sequencer=(String)session.getAttribute("ABISequencertype");
                                session.setAttribute("checknext",req.getQueryString());
                        }else if(req.getQueryString().equals("availprevslots")){
                                if (session != null) {
                                        session.removeAttribute("slot");
                                }
                                int day=cal.get(Calendar.DAY_OF_WEEK);
                                date=(String)session.getAttribute("dates");
                                String[] prevdate=date.split(",");
                                String startDate=prevdate[0];
                                String[] sDate=startDate.split("-");
                                String finalSDate="";
                                int intDate=Integer.parseInt(sDate[0]);
                                int intMonth= Integer.parseInt(sDate[1]);
                                int intYear=Integer.parseInt(sDate[2]);
                                cal.clear(Calendar.DAY_OF_MONTH);
                                cal.set(Calendar.MONTH, intMonth-1);
                                cal.set(Calendar.DAY_OF_MONTH,intMonth-1);
                                int ldateMonth=cal.getActualMaximum(Calendar.DAY_OF_MONTH);
                                int firstdateofmonth=cal.getMinimum(Calendar.DAY_OF_MONTH);
                                int day11=day-1;
                                cal.add(Calendar.DATE, -day11);
                                if(intDate<ldateMonth){
                                        finalSDate=cal.get(Calendar.DATE)+"-"+intMonth+"-"+intYear;
                                        finalEDate=intDate-1+"-"+intMonth+"-"+intYear;

                                }else{
                                        if(intMonth<12){
                                                intMonth=intMonth+1;
                                        }else{
                                                intMonth=cal.get(Calendar.JANUARY);
                                                intYear=intYear+1;
                                        }
                                        intDate=firstdateofmonth;
                                        finalSDate=intDate+"-"+intMonth+"-"+intYear;
                                        finalEDate=intDate+7+"-"+intMonth+"-"+intYear;
                                }
                                Fromdate=finalSDate;
                                Todate=finalEDate;
                                abi_sequencer=(String)session.getAttribute("ABISequencertype");

                        }else{
                                Fromdate=date;
```

```
                                abi_sequencer=req.getParameter("ABI_sequencer");
                                session.setAttribute("ABISequencertype", abi_sequencer);
                                if(session !=null){
                                        session.removeAttribute("checknext");
                                }
                        }

                        String[]Fromdate1=Fromdate.split("-");
                        String[]Todate1=Todate.split("-");
                        int TheDate=Integer.parseInt(Fromdate1[0]);
                        int TheMonth=Integer.parseInt(Fromdate1[1]);
                        int TheYear=Integer.parseInt(Fromdate1[2]);
                        cal.clear();
                        cal.set(Calendar.DATE,TheDate);
                        cal.set(Calendar.MONTH,TheMonth-1);
                        cal.set(Calendar.YEAR,TheYear);
                        int day=cal.get(Calendar.DAY_OF_WEEK);
                        int TheDate1=Integer.parseInt(Fromdate1[0]);
                        int TheMonth1=Integer.parseInt(Fromdate1[1]);
                        int TheYear1=Integer.parseInt(Fromdate1[2]);
                        cal.clear();
                        cal.set(Calendar.DATE,TheDate1);
                        cal.set(Calendar.MONTH,TheMonth1-1);
                        cal.set(Calendar.YEAR,TheYear1);
                        int day1=cal.get(Calendar.DAY_OF_WEEK);
                        if(day>day1){
                                System.out.println("two weeks choosen"+day+" , "+day1);
                        }
                        int dayinmonth=cal.getActualMaximum(Calendar.DAY_OF_MONTH);
                        String[] time1={"00:00","02:30","05:00","07:30","10:00","12:30","15:00","17:30","20:00","22:30"};
                        String[] times1={"00:00-02:30AM","02:30-05:00AM","05:00-07:30AM","07:30-10:00AM","10:00-12:30PM","12:30-15:00PM","15:00-17:30PM","17:30-20:00PM","20:00-22:30PM","22:30-24:00AM"};
                        String[] time2={"00:00","00:35","01:10","01:45","02:20","02:55","03:30","04:05","04:40","05:15","05:50","06:25","07:00","07:35","08:10","08:45","09:20","09:55","10:30","11:05","11:40","12:15","12:50","13:25","14:00","14:35","15:10","15:45","16:20","16:55","17:30","18:05","18:40","19:15","19:50","20:25","21:00","21:35","22:10","22:45","23:20"};
                        String[] times2= {"00:00-00:35AM","00:35-01:10AM","01:10-01:45AM","01:45-02:20AM","02:20-02:55AM","02:55-03:30AM","03:30-04:05AM","04:05-04:40AM","04:40-05:15AM","05:15-05:50AM","05:50-06:25AM","06:25-07:00AM","07:00-07:35AM","07:35-08:10AM","08:10-08:45AM","08:45-09:20AM","09:20-09:55AM","09:55-10:30AM","10:30-11:05AM","11:05-11:40AM","11:40-12:15PM","12:15-12:50PM","12:50-13:25PM","13:25-14:00PM","14:00-14:35PM","14:35-15:10PM","15:10-15:45PM","15:45-16:20PM","16:20-16:55PM","16:55-17:30PM","17:30-18:05PM","18:05-18:40PM","18:40-19:15PM","19:15-19:50PM","19:50-20:25PM","20:25-21:00PM","21:00-21:35PM","21:35-22:10PM","22:10-22:45PM","22:45-23:20PM","23:20-23:55PM"};

                        int firstdate=0;

                        firstdate=(Integer.parseInt(Fromdate1[0]))-(day-1);
                        String date1=String.valueOf(firstdate)+"-"+Fromdate1[1]+"-"+Fromdate1[2];
```

```
199                             cal.clear(Calendar.MONTH);
200                             cal.set(Calendar.MONTH,TheMonth1-2);
201                             int dayinmonth1=cal.getActualMaximum(Calendar.DAY_OF_MONTH);
202                             session.setAttribute("lastmonthmaxdate", new Integer(dayinmonth1));
203                             if(firstdate<0){
204                                     firstdate=dayinmonth1+firstdate;
205                                     if((TheMonth1-1)<0){
206                                             date1=String.valueOf(firstdate)+"-"+12+"-"+String.valueOf(TheYear-1);
207                                     }else{
208                                             //added on 03-04-2008 to show month as 01, 02,....if it is less than 10
209                                             if((TheMonth1-1)<10){
210                                                     date1=String.valueOf(firstdate)+"-0"+String.valueOf(TheMonth1-1)+"
-"+Fromdate1[2];
211                                             }else{
212                                                     date1=String.valueOf(firstdate)+"-"+String.valueOf(TheMonth1-1)+"-
"+Fromdate1[2];
213                                             }
214                                     }
215                             }
216                             date=date1+","+dayinmonth;
217
218
219                             session.setAttribute("dates", date);
220
221                             int firdate=Integer.parseInt(Fromdate1[0]);
222                             cal.clear();
223                             cal.set(Calendar.DATE, firdate);
224                             cal.set(Calendar.MONTH, Integer.parseInt(Fromdate1[1])-1);
225                             cal.set(Calendar.YEAR, Integer.parseInt(Fromdate1[2]));
226
227                             String[] firstdateofweek=date1.split("-");
228                             int f=Integer.parseInt(firstdateofweek[0]);
229                             int month=Integer.parseInt(firstdateofweek[1]);
230                             int year=Integer.parseInt(firstdateofweek[2]);
231                             cal.clear();
232                             cal.set(Calendar.MONTH, month-1);
233                             dayinmonth=cal.getActualMaximum(Calendar.DAY_OF_MONTH);
234                             st=con.createStatement();
235                             String Bookedusername="";
236                             for(int s=0;s<=6;s++){
237                                     if(f>dayinmonth){
238                                             f=1;
239                                             month=month+1;
240                                             if(month>12){
241                                                     year=year+1;
242                                             }
243                                     }
244                                     if(month<10){
```

```
                                        date=f+"-0"+month+"-"+year;
                                }else{
                                        date=f+"-"+month+"-"+year;
                                }
                                st=con.createStatement();
                                st1=con.createStatement();

                                rs=st.executeQuery("select  distinct(pcr_plate_id),abi_sequencer_time,substr(abi_s
equencer_time,strpos(abi_sequencer_time,',')+1) from ce_electrophoresis where abi_sequencer_time~'"+date+"' and abi_sequen
cer='"+abi_sequencer+"' order by substr");

                        f=f+1;
                        while(rs.next()){
                                String str="false";
                                //rs1=st1.executeQuery("select distinct up.user_id from pcr_tracking pt inner join
 ce_electrophoresis ce on pt.pcr_plate_id=ce.pcr_plate_id inner join user_psc up on pt.upsc_id=up.upsc_id where pt.pcr_pla
te_id='"+rs.getString(1)+"'");
                                rs1=st1.executeQuery("select distinct up.user_id from run_tracking pt inner join c
e_electrophoresis ce on pt.run_plate_id=ce.pcr_plate_id inner join user_psc up on pt.upsc_id=up.upsc_id where pt.run_plate
_id='"+rs.getString(1)+"'");
                                while(rs1.next()){
                                        Bookedusername=rs1.getString(1);
                                }

                                String Booked_time=rs.getString(2);
                                if(count==1){
                                        //dateTime=Booked_time+"%~~%";
                                        BookeddateTime=Booked_time+"!@@!"+Bookedusername+"%~~%";
                                }

                                String[]dateTime1=BookeddateTime.split("%~~%");
                                for(int i=0;i<dateTime1.length;i++){
                                        if(dateTime1[i].equals(Booked_time)){
                                                str="true";
                                                break;
                                        }
                                }
                                if(str.equals("false")){
                                        //dateTime=dateTime+Booked_time+"%~~%";
                                        BookeddateTime=BookeddateTime+Booked_time+"!@@!"+Bookedusername+"%~~%";
                                }

                        count++;
                        }

                        }
                        String start="";
                        String end="";
```

```
                        String Slot="";
                        String slot1="";
                        String slotDate="";
                        String slotUsername="";
                        if(!(BookeddateTime.equals("")){
                                String[] booked1=BookeddateTime.split("%~~%");
                                for(int a=0;a<booked1.length;a++){
                                        String[] bookeddateTime2=booked1[a].split("!@@!");
                                        String[] booked=bookeddateTime2[0].split("&");
                                        slotUsername=bookeddateTime2[1];
                                        if(abi_sequencer.equals("3700")){
                                                for(int p=0;p<booked.length;p++){
                                                        String kk="false";
                                                        int l=0;
                                                        int endtime=time1.length;
                                                        String[] dates=booked[p].split("to");
                                                        String[] startdate=dates[0].split(",");

                                                        String[] enddate=dates[1].split(",");
                                                        for(int s=0;s<days.length;s++){
                                                                if(startdate[0].trim().equals(days[s])){
                                                                        String hours=startdate[2].trim();
                                                                        for(int k=0;k<time1.length;k++){
                                                                                if(hours.equals(time1[k])){
                                                                                        start=k+"~~!!"+s+"~~!!"+times1[k];
                                                                                        kk="true";
                                                                                        l=k;
                                                                                        break;
                                                                                }
                                                                        }
                                                                }
                                                                if(enddate[0].trim().equals(days[s])){
                                                                        String hours=enddate[2].trim() ;
                                                                        for(int k=0;k<time1.length;k++){
                                                                                if(hours.equals("24:00")&&k==(time2.length-1)){
                                                                                        end=k+"~~!!"+s+"~~!!"+times2[k];
                                                                                        kk="false";
                                                                                        endtime=k+1;
                                                                                        }
                                                                                if(hours .equals(time1[k])){
                                                                                        end=k+"~~!!"+s+"~~!!"+times1[k];
                                                                                        kk="false";
                                                                                        endtime=k+1;
```

```
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
}
if(kk.equals("true")){
slotDate=enddate[1];
if(startdate[0].trim().equals(enddate[0].trim())){
if(k==l||k>l){
slot1=slot1+k+"~~!!"+s+"~~!!"+times1[k]+"~~!!"+slotDate+"!@@!"+slotUsername+"~!~!~";
}
}else{
slot1=slot1+k+"~~!!"+s+"~~!!"+times1[k]+"~~!!"+slotDate+"!@@!"+slotUsername+"~!~!~";
}
}
}
//modified on 27th march
if(kk.equals("true")){
slotDate=startdate[1];
for(int k=l;k<endtime;k++){
slot1=slot1+k+"~~!!"+s+"~~!!"+times1[k]+"~~!!"+slotDate+"!@@!"+slotUsername+"~!~!~";
}
}
}
}
}else{
for(int p=0;p<booked.length;p++){
String kk="false";
int l=0;
int endtime=time2.length;
String[] dates=booked[p].split("to");
String[] startdate=dates[0].split(",");
//String startdate1=startdate[1];
slotDate=startdate[1];
String[] enddate=dates[1].split(",");
for(int s=0;s<days.length;s++){
if(startdate[0].trim().equals(days[s])){
String hours=startdate[2].trim();
for(int k=0;k<time2.length;k++){
if(hours.equals(time2[k])){
start=k+"~~!!"+s+"~~!!"+times2[k];

kk="true";
l=k;
break;
}
}
```

```
373                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
}
if(enddate[0].trim().equals(days[s])){
        String hours=enddate[2].trim();
        for(int k=0;k<time2.length;k++){
                //modified on 27th march
                if(hours.equals("23:55")&&k==(time
2.length-1)){
                end=k+"~~!!"+s+"~~!!"+times2[k];
                kk="false";
                endtime=k+1;
                }
                if(hours.equals(time2[k])){
                        end=k+"~~!!"+s+"~~!!"+time
s2[k];
                        kk="false";
                        endtime=k+1;

                }
                if(kk.equals("true")){
                        slotDate=enddate[1];
//
                        if(startdate[0].trim().equ
als(enddate[0].trim())){
                                if(k==l||k>l){
                                        slot1=slot
1+k+"~~!!"+s+"~~!!"+times2[k]+"~~!!"+slotDate+"!@@!"+slotUsername+"~!~!~";
                                }

                        }else{

                                slot1=slot1+k+"~~!
!"+s+"~~!!"+times2[k]+"~~!!"+slotDate+"!@@!"+slotUsername+"~!~!~";
                        }

                }
        }
}
//modified on 27th march


if(kk.equals("true")){
        slotDate=startdate[1];
        for(int k=l;k<endtime;k++){
                slot1=slot1+k+"~~!!"+s+"~~!!"+time
s2[k]+"~~!!"+slotDate+"!@@!"+slotUsername+"~!~!~";
        }

}
```

```


                                                                }
                                                        }
                                                }
                                        }
                                }
                                session.setAttribute("slot", slot1);

                        }catch(Exception e){e.printStackTrace();}
                        finally{
                                try{
                                        if(con!=null) con.close();
                                }catch(Exception e){System.out.println(e);}
                        }
                        return am.findForward("availableslots");
                }
        }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/PLTFile3130Action.java

```
/*
 * Created on Aug 14, 2007
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.electrophoresis;

import java.io.File;
import java.io.FileOutputStream;
import java.io.PrintStream;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.text.DateFormat;
import java.util.Date;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
```

```
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import org.icrisat.lims.common.UploadExcel;


public class PLTFile3130Action extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception
                {

                Connection con=null;
                ResultSet rs=null;
                Statement st=null;Statement stmt=null;Statement stmt1=null;

                String schedPref="";
                String plateScealing="";

                String proj = req.getSession().getAttribute("project").toString();
                String study=req.getSession().getAttribute("study").toString();
                String crop=req.getSession().getAttribute("crop").toString();
                String user=(String)req.getSession().getAttribute("user");
                String msg="";String folderName="";
                HttpSession session = req.getSession(true);
//              user identification
                if((String)session.getAttribute("user")==null){
                        msg="logout";
                        return am.findForward(msg);
                }
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        stmt=con.createStatement();
                        stmt1=con.createStatement();
                        UploadExcel Gxf = new UploadExcel();
                        String plid = session.getAttribute("cepid").toString();
                        String userid=(String)req.getSession().getAttribute("upsc");
                        Date theDate = new Date();
                        java.text.DateFormat df1 = DateFormat.getDateTimeInstance(DateFormat.SHORT, DateFormat.SHO
RT);
                        String elecdate = df1.format(theDate);
                        String rootfoldname="";String fname2="";
                        rootfoldname="PLTFiles";
                        folderName=study+"_"+crop+"_"+user;
                        if(req.getQueryString().equals("createplt")){
                                if(session!=null){
                                        session.removeAttribute("pltfname");
```

```
                        session.removeAttribute("foldname");
                }

                // TODO Auto-generated method stub

                DynaActionForm df=(DynaActionForm)af;
                String owner=df.get("owner").toString();
                String operator=df.get("operator").toString();
                String amethod = df.get("analysismethod").toString();
                String size = df.get("size").toString();
                String resultgroup = df.get("resgroup").toString();
                if (size.equals("Add New")){
                        size=df.get("sizetxt").toString();
                }
                if (amethod.equals("Add New")){
                        amethod=df.get("analysistxt").toString();
                }
                if (resultgroup.equals("Add New")){
                        resultgroup=df.get("resgrouptxt").toString();
                }
                String insprot = df.get("instrumentprotocol").toString();
                if (insprot.equals("Add New")){
                        insprot=df.get("instrumentprotocoltxt").toString();
                }
                String applicationinstance= df.get("applicationinstance").toString();

                String sequencer=(String)session.getAttribute("sequencer");
                if(sequencer.equals("3730")){
                        plateScealing=df.get("platesealing").toString();
                        schedPref=df.get("schedulingPref").toString();
                }
                String ptype=null;
                String fname=proj+"_"+plid+".txt";
                String strCComment="";

                rootfoldname="PLTFiles";
                folderName=study+"_"+crop+"_"+user;
                String fname1=session.getServletContext().getRealPath("//")+"/"+rootfoldname;
                if(!new File(fname1).exists())
                        new File(fname1).mkdir();
                fname2= fname1+"/"+ folderName;
                if(!new File(fname2).exists())
                new File(fname2).mkdir();

                session.setAttribute("foldname",folderName);
                String wellid="";
                String dye=""; String marker="";
                String genotype="";
```

```
122                                 String[] mdetails=new String[2];
123
124                                 /*rs=st.executeQuery("SELECT Genotype_Master.Genotype_Id, PCR_Tracking_Well.Row_Id
, PCR_Tracking_Well.Col_Id FROM Genotype_Master INNER JOIN PCR_Tracking_Well ON Genotype_Master.LIMS_Id = PCR_Tracking_Wel
l.LIMS_Id WHERE (PCR_Tracking_Well.PCR_Plate_Id = '"+plid+"') ORDER BY PCR_Tracking_Well.Col_Id,PCR_Tracking_Well.Row_Id")
;
125                                 while(rs.next()){
126                                         genotype=genotype+rs.getString(2)+"~"+rs.getString(3)+"~"+rs.getString(1)+
",";
127                                 }*/
128                                 rs=st.executeQuery("SELECT distinct genotype_master.genotype_id, run_tracking_well
.row_id, run_tracking_well.col_id, run_tracking_well.markers_assigned from genotype_master inner join run_tracking_well on
 genotype_master.lims_id=run_tracking_well.lims_id WHERE run_tracking_well.run_plate_id = '"+plid+"' order by run_Tracking
_Well.Col_Id,run_Tracking_Well.Row_Id");
129                                 while(rs.next()){
130                                         //System.out.println(rs.getString(2)+"~"+rs.getString(3)+"~"+rs.getString(
1)+"_"+rs.getString(4)+",");
131                                         String mark=rs.getString(4);
132                                         String markerDetails="";
133                                         if(mark.contains(",")){
134                                                 String[]markers=mark.split(",");
135                                                 for(int s=0;s<markers.length;s++){
136                                                         String[] markerwithdye1=markers[s].split(":");

137                                                         String[] markerwithdye=markerwithdye1[0].split("-");
138                                                         markerDetails=markerDetails+"_"+markerwithdye[0]+"_"+marke
rwithdye[1];
139                                                 }
140                                         }else{
141                                                 String[] markerwithdye1=mark.split(":");
142                                                 String[] markerwithdye=markerwithdye1[0].split("-");
143                                                 markerDetails=markerDetails+"_"+markerwithdye[0]+"_"+markerwithdye
[1];
144                                         }
145                                         //genotype=genotype+rs.getString(2)+"~"+rs.getString(3)+"~"+rs.getString(1
)+",";
146                                         genotype=genotype+rs.getString(2)+"~"+rs.getString(3)+"~"+rs.getString(1)+
"~"+rs.getString(1)+markerDetails+",";
147                                 }
148
149                                 //ResultSet rs1=stmt.executeQuery("select plate_type from pcr_tracking where pcr_p
late_id='"+plid+"' ");
150                                 ResultSet rs1=stmt.executeQuery("select distinct run_tracking_well.markers_assigne
d, run_tracking.plate_type from run_tracking_well inner join run_tracking on run_tracking.run_plate_id=run_tracking_well.r
un_plate_id where run_tracking_well.run_plate_id='"+plid+"'");
151                         while (rs1.next()){
152                                 ptype=rs1.getString(2);
153                                 if(rs1.getString(1).contains(",")){
```

```
                                                        String[] mdetails0=rs1.getString(1).split(",");
                                                        for(int m=0;m<mdetails0.length;m++){
                                                                String[] mdetails1=mdetails0[m].split(":");
                                                                mdetails=mdetails1[0].split("-");
                                                                //mdetails=mdetails0[m].split("-");
                                                                dye=mdetails[1];
                                                                marker=mdetails[0];
                                                                if((dye.equalsIgnoreCase("6FAM"))||(dye.equalsIgnoreCase("6-FAM"))||(dye.equalsIgnoreCase("FAM")))
                                                                        strCComment="color comment b";
                                                                else if((dye.equalsIgnoreCase("VIC"))||(dye.equalsIgnoreCase("HEX")))
                                                                        strCComment="color comment g";
                                                                else if(dye.equalsIgnoreCase("NED"))
                                                                        strCComment="color comment y";
                                                                else
                                                                        strCComment="color comment r";

                                                                stmt1.executeUpdate("insert into ce_electrophoresis values('" + plid + "','"+marker+"','"+dye+"','"+strCComment+"","+null+","+null+","+null+","'+resultgroup+"','"+insprot+"','"+amethod+"','"+sequencer+"","+null+")");
                                                        }
                                                }else{
                                                        //String[] splitMarkers=rs1.getString(1).split("-");
                                                        String[] strMarkers=rs1.getString(1).split(":");
                                                        String[] splitMarkers=strMarkers[0].split("-");

                                                        if((splitMarkers[1].equalsIgnoreCase("6FAM"))||(splitMarkers[1].equalsIgnoreCase("6-FAM"))||(splitMarkers[1].equalsIgnoreCase("FAM")))
                                                                strCComment="color comment b";
                                                        else if((splitMarkers[1].equalsIgnoreCase("VIC"))||(splitMarkers[1].equalsIgnoreCase("HEX")))
                                                                strCComment="color comment g";
                                                        else if(splitMarkers[1].equalsIgnoreCase("NED"))
                                                                strCComment="color comment y";
                                                        else
                                                                strCComment="color comment r";

                                                        stmt1.executeUpdate("insert into ce_electrophoresis values('" + plid + "','"+splitMarkers[0]+"','"+splitMarkers[1]+"','"+strCComment+"","+null+","+null+","+null+","'+resultgroup+"','"+insprot+"','"+amethod+"','"+sequencer+"","+null+")");
                                                }
                                        }

                                                String[] templates=genotype.split(",");
                                                int len=templates.length;
                                                String[] val=null;String template=""; String template1="";
                                                FileOutputStream fout=null;
```

```
                                PrintStream bout;
                                fout=new FileOutputStream(fname2+"//"+fname);
                                bout=new PrintStream(fout);
                                if(sequencer.equals("3130")){
                                        bout.println("Container Name\tDescription\tContainerType\tAppType\tOwner\t
Operator");
                                        bout.println(plid+"\t\t"+ptype+"-Well"+"\tRegular\t"+owner+"\t"+operator);
                                        bout.println("AppServer\tAppInstance");
                                        bout.println("GeneMapper\t"+applicationinstance);
                                        bout.println("Well\tSample Name\tComment\tPriority\tSize Standard\tSnp Set
\tUser-Defined 3\tUser-Defined 2\tUser-Defined 1\tPanel\tStudy\tSample Type\tAnalysis Method\tResults Group 1\tInstrument
Protocol 1");
                                        for (int k=0;k<len;k++){
                                                val=templates[k].split("~");
                                                template=val[2];
                                                if(template!=""||!template.equals("")){
                                                        wellid=val[0]+val[1];
                                                        bout.println(wellid+"\t"+template+"\t"+template+"\t100\t"+
size+"\t\t\t\t\t\t\t\t"+amethod+"\t"+resultgroup+"\t"+insprot);
                                                }
                                        }
                                }else{
                                        bout.println("Container Name\tPlate ID\tDescription\tContainerType\tAppTyp
e\tOwner\tOperator\tPlateSealing\tSchedulingPref");
                                bout.println(plid+"\t"+plid+"\t\t"+ptype+"-Well"+"\tRegular\t"+owner+"\t"+operator+"\t
"+plateScealing+"\t"+schedPref);
                                        bout.println("AppServer\tAppInstance");
                                        bout.println("GeneMapper\t"+applicationinstance);
                                        bout.println("Well\tSample Name\tComment\tSize Standard\tSnp Set\tUser-Def
ined 3\tUser-Defined 2\tUser-Defined 1\tPanel\tStudy\tSample Type\tAnalysis Method\tResults Group 1\tInstrument Protocol 1
");
                                        for (int k=0;k<len;k++){
                                                val=templates[k].split("~");
                                                template=val[2];
                                                template1=val[3];

                                                if(template!=""||!template.equals("")){
                                                        wellid=val[0]+val[1];
                                                        //bout.println(wellid+"\t"+template+"\t"+template+"\t100\t
"+size+"\t\t\t\t\t\t\t\t"+amethod+"\t"+resultgroup+"\t"+insprot);
                                                        bout.println(wellid+"\t"+template+"\t"+template1+"\t"+size
+"\t\t\t\t\t\t\t\t"+amethod+"\t"+resultgroup+"\t"+insprot);
                                                }
                                        }
                                }
                                session.setAttribute("pltfname",fname);
                                session.setAttribute("pltid",plid);
                                msg="pltfile";
```

```
230                         }else if(req.getQueryString().equals("save")){
231                                 plid=(String)session.getAttribute("pltid");
232                                 stmt.executeUpdate("insert into dna_electrophoresis values('" + plid + "','Capilla
ry','" + userid + "','" + elecdate + "","+null+")");
233                                 msg="save";
234                         }else{
235                                 plid=(String)session.getAttribute("pltid");
236                                 String sfname=(String)req.getSession().getAttribute("pltfname");
237                                 folderName=study+"_"+crop+"_"+user;
238                                 String fileName="";
239
240                                 fname2=session.getServletContext().getRealPath("//")+"/"+rootfoldname+"/"+folderNa
me;
241                                 fileName=fname2+"/"+sfname;
242                                 stmt.executeUpdate("delete from ce_electrophoresis where pcr_plate_id='"+plid+"'")
;
243                                 stmt1.executeUpdate("delete from dna_electrophoresis where pcr_plate_id='"+plid+"'
");
244                                 Gxf.deleteFile(fileName);
245                                 msg="delete";
246
247                         }
248                 }
249                 catch (Exception e){
250                         e.printStackTrace();
251                 }
252                 finally{
253                       try{
254                                 if(con!=null) con.close();
255                          }catch(Exception e){System.out.println("Exception in PLTFile3130Action : "+e);}
256                         }
257                 return am.findForward(msg);
258         }
259 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/RetrieveCEIdAction.java

```
  1  package org.icrisat.lims.sampletracking.electrophoresis;
  2  import java.sql.Connection;
  3  import java.sql.ResultSet;
  4  import java.sql.Statement;
  5  import java.util.ArrayList;
  6
  7  import javax.servlet.ServletContext;
  8  import javax.servlet.http.HttpServletRequest;
  9  import javax.servlet.http.HttpServletResponse;
 10  import javax.servlet.http.HttpSession;
 11  import javax.sql.DataSource;
```

```


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

public class RetrieveCEIdAction extends Action {

        Connection con;
        ResultSet rs;
        Statement stmt;

        /*
         * retrieves PCRPlates from DB for displaying
         * in CapillaryElectrophoresis Submodule of Electrophoresis module
         * under SampleTracking
         * */
        public ArrayList cplateidList(HttpServletRequest req, Connection con){
                        ArrayList cpidlist=new ArrayList();
                        HttpSession session = req.getSession(true);
                        String upscid=(String)req.getSession().getAttribute("upsc");
                        String userid=(String)req.getSession().getAttribute("user");
                        String electype="Capillary";
                        String pltype="";
                try{
                        stmt = con.createStatement();
                        rs=stmt.executeQuery("select run_plate_id from run_tracking where run_plate_id NOT IN (SEL
ECT DISTINCT pcr_plate_id FROM dna_electrophoresis WHERE upsc_id = '"+upscid+"') and upsc_id ='"+upscid+"'");
                        while(rs.next()){
                        cpidlist.add(rs.getString(1).toString());
                }
                  }catch(Exception e){
                      e.printStackTrace();
                       }
        return cpidlist;
        }

     public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res)
throws Exception
        {
        HttpSession session = req.getSession(true);
//      user identification
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
```

```
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        RetrieveCEIdAction dbean = new RetrieveCEIdAction();
                        ArrayList cplist = dbean.cplateidList(req,con);
                        session.setAttribute("cpltid", cplist);
                        //con.close();
                }catch(Exception e){}
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return am.findForward("msg");
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/CEParametersAction.java

```
//Collating information on CE parameters
/*
 * Created on Sep 5, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.electrophoresis;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
```

```
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class CEParametersAction extends Action {
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {
                HttpSession session = req.getSession(true);
//              user identification
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                String ptype="";
                DynaActionForm df = (DynaActionForm)af;
                String pid=df.get("cepid").toString();
                String sequencer=df.get("ABI_sequencer").toString();
                //System.out.println("Sequencer="+sequencer);
                String pagetogo="";
                ArrayList resgroup=new ArrayList();
                ArrayList insprotocol=new ArrayList();
                ArrayList AnalysisMethod=new ArrayList();
                ArrayList AnalysisModule=new ArrayList();
                ArrayList RunModule=new ArrayList();
                Connection con=null; Statement stmt=null; ResultSet rs=null;
        Statement st=null; ResultSet rs1=null;
        Statement st1=null;ResultSet rs2=null;
        Statement st2=null;ResultSet rs3=null;
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                stmt = con.createStatement();
                st = con.createStatement();
                st1 = con.createStatement();st2=con.createStatement();

                rs=stmt.executeQuery("select plate_type from pcr_tracking where pcr_plate_id='"+pid+"' ");
                while (rs.next()){
                        ptype=rs.getString(1);
                }
                session.setAttribute("plate_type",ptype);

                        session.setAttribute("cepid", pid);
                        if(sequencer.equalsIgnoreCase("3700_cap")){
                                rs1=st1.executeQuery("select distinct analysis_module from ce_electrophoresis");
                        while (rs1.next()){
```

```
                                if(rs1.getString(1)!=null){
                                        AnalysisModule.add(rs1.getString(1));
                                }
                        }
                        session.setAttribute("AnalysisModule", AnalysisModule);
                        rs3=st2.executeQuery("select distinct run_module from ce_electrophoresis");
                        while (rs3.next()){
                                if(rs3.getString(1)!=null){
                                //System.out.println("run module  "+rs3.getString(1));
                                RunModule.add(rs3.getString(1));}
                        }
                        session.setAttribute("runmodule", RunModule);
                                pagetogo="cetwo";
                        }else{
                                rs1=st.executeQuery("select distinct result_group from ce_electrophoresis");
                        while (rs1.next()){
                                if(rs1.getString(1)!=null){
                                //System.out.println("result group    x"+rs1.getString(1));
                                resgroup.add(rs1.getString(1));     }
                        }
                        session.setAttribute("resgroups", resgroup);

                        rs2=st1.executeQuery("select distinct instrument_protocol from ce_electrophoresis");
                        while (rs2.next()){
                                if(rs2.getString(1)!=null){
                                //System.out.println("instruction protocol  "+rs2.getString(1));
                                insprotocol.add(rs2.getString(1));}
                        }
                        session.setAttribute("insprotocols", insprotocol);

                        rs3=st2.executeQuery("select distinct analysis_method from ce_electrophoresis");
                        while (rs3.next()){
                                if(rs3.getString(1)!=null){
                                //System.out.println("Ananlysis method  "+rs3.getString(1));
                                AnalysisMethod.add(rs3.getString(1));}
                        }
                        session.setAttribute("AnalysisMethod1", AnalysisMethod);
                                pagetogo="cethree";
                        }
                        session.setAttribute("sequencer", sequencer);
                }catch (Exception e){
                          System.out.println(e);
                 }
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
```

```
         return am.findForward(pagetogo);
         }


 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/UploadGEAction.java

```
/*
 * Created on Oct 10, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.electrophoresis;


import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.InputStream;
import java.io.OutputStream;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
import java.text.DateFormat;
import java.util.Date;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import org.apache.struts.upload.FormFile;
import org.icrisat.lims.common.UploadExcel;
/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
```

```
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class UploadGEAction extends Action {
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res)throws Exception
        {
                HttpSession session = req.getSession(true);
//              user identification

                if((String)session.getAttribute("user")==null){

                        String msg="logout";
                       return am.findForward(msg);
                }
                String savetoserver="";
                //retreiving plate id & user id from session
                String plate_id = (String)req.getSession().getAttribute("gepid");
                String userid=(String)req.getSession().getAttribute("user");
                String upscid=(String)req.getSession().getAttribute("upsc");
                String study=(String)req.getSession().getAttribute("study");
                String crop=(String)req.getSession().getAttribute("crop");

                String geltype = req.getParameter("geltype");
                float composition = Float.parseFloat(req.getParameter("composition"));
                int voltage = Integer.parseInt(req.getParameter("voltage"));
                float duration = Float.parseFloat(req.getParameter("duration"));
                String detection = req.getParameter("detection");
                String ampliconsize=req.getParameter("ampliconsize");

                 //Bean form = (Bean)af;
                DynaActionForm form =(DynaActionForm)af;
                 FormFile file = (FormFile)form.get("gelimage");
                 //FormFile file1 = form.getDatafile();
                 FormFile file1 = (FormFile)form.get("datafile");

                Connection con = null;
                ResultSet rs = null;
                Statement stmt = null;

                InputStream stream=null;InputStream stream1=null;
                //OutputStream bos=null;
                // GenotypeXmlFile is a user defined class which creates file in the server.
                UploadExcel Gxf = null;
                String fileName=""; String fileName1="";
                //String xmlFileName = "";
                //String target="";
                String check = "";
                stream=file.getInputStream();
```

```
                stream1=file1.getInputStream();
                String fname11=file.getFileName();
                String fname21 = file1.getFileName();
                String fname1=plate_id+"-"+fname11;
                String fname2=plate_id+"-"+fname21;
                savetoserver="UploadFiles";
                String saveF=session.getServletContext().getRealPath("//")+"/"+savetoserver;
                if(!new File(saveF).exists())
                new File(saveF).mkdir();
                fileName=saveF+"/"+fname1;
                //fileName=session.getServletContext().getRealPath("//")+"/UploadFiles//"+fname1;
                Gxf=new UploadExcel();
                check=Gxf.createFile(stream,fileName);
                Date theDate = new Date();
        java.text.DateFormat df1 = DateFormat.getDateTimeInstance(DateFormat.SHORT, DateFormat.SHORT);
                String elecdate = df1.format(theDate);
                fileName1=saveF+"/"+fname2;
                //fileName1=session.getServletContext().getRealPath("//")+"/UploadFiles//"+fname2;
                Gxf=new UploadExcel();
                check=Gxf.createFile(stream1,fileName1);
                try{
                    //creating connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                stmt = con.createStatement();
                //saving a gelimage
                String gelrootfoldname="";
                String geldatarootfoldname="";

                geldatarootfoldname="GELDataFiles";
                        gelrootfoldname="GELImages";
                String folderName=study+"_"+crop+"_"+userid;
                /*String filepath=session.getServletContext().getRealPath("//")+"/GELImages/"+folderName;
                InputStream in = new FileInputStream(fileName);
                if(!new File(filepath).exists())
                        new File(filepath).mkdir();*/
                String filename1=session.getServletContext().getRealPath("//")+"/"+gelrootfoldname;
                        if(!new File(filename1).exists())
                        new File(filename1).mkdir();
                        String filepath=filename1+"/"+folderName;
                InputStream in = new FileInputStream(fileName);
                if(!new File(filepath).exists())
                        new File(filepath).mkdir();
                OutputStream out = new FileOutputStream(filepath+"/"+fname1);
                        byte[] buf = new byte[1024];
                        int len;
                        while ((len=in.read(buf))>0){
```

```
                                out.write(buf, 0, len);
                        }
                        in.close();
                        out.close();
                        //saving a data file
                        /*String filepath1=session.getServletContext().getRealPath("//")+"/GELDataFiles/"+folderNa
me;
                        InputStream ins = new FileInputStream(fileName1);
                        if(!new File(filepath1).exists())
                        new File(filepath1).mkdir();*/
                        String filename2=session.getServletContext().getRealPath("//")+"/"+geldatarootfoldname;
                        if(!new File(filename2).exists())
                        new File(filename2).mkdir();
                        String filepath1=filename2+"/"+folderName;
                        InputStream ins = new FileInputStream(fileName1);
                        if(!new File(filepath1).exists())
                        new File(filepath1).mkdir();
                        OutputStream outs = new FileOutputStream(filepath1+"/"+fname2);
                        byte[] buffer = new byte[1024];
                        int length;
                        while ((length=ins.read(buffer))>0){
                                outs.write(buffer, 0, length);
                        }
                        ins.close();
                        outs.close();
                    rs = stmt.executeQuery("SELECT distinct pcr_marker_well.marker_assigned FROM pcr_marker_well WHERE
 (pcr_marker_well.PCR_Plate_Id = '"+plate_id+"')");
                        while (rs.next())
                        {
                              PreparedStatement psmt = con.prepareStatement("insert into GEL_Electrophoresis value
s(?,?,?,?,?,?,?,?,?,?)");
                                  psmt.setString(1,plate_id);
                                  psmt.setString(2,rs.getString(1));
                                  psmt.setString(3,geltype);
                                  psmt.setFloat(4,composition);
                                  psmt.setInt(5,voltage);
                                  psmt.setFloat(6,duration);
                                  psmt.setString(7,detection);
                                  psmt.setString(8,ampliconsize);
                                  psmt.setString(9,filepath+fname1);
                                  psmt.setString(10,filepath1+fname2);
                                  psmt.executeUpdate();
                                  psmt.close();
                        }
                        int op = stmt.executeUpdate("insert into DNA_Electrophoresis values('" + plate_id + "','PA
GE','" + upscid + "','" + elecdate + "","+null+")");

                        //con.close();
```

```
                 }catch(Exception e)

                    {
                            System.out.println(e.toString());
                           //con.close();
                    }finally{
                               try{
                                         if(con!=null) con.close();
                                  }catch(Exception e){System.out.println(e);}
                                }
                  check=Gxf.deleteFile(fileName1);
                  check=Gxf.deleteFile(fileName);
                 // System.out.println("file deleted from server"+ check);
                 return am.findForward("gelelec1");
         }
 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/InsertABIMachineTimeAction.java

```
package org.icrisat.lims.sampletracking.electrophoresis;

import java.io.File;
import java.io.FileInputStream;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import java.util.Calendar;
import java.util.GregorianCalendar;
import java.util.Properties;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import org.icrisat.lims.common.SendMail;

public class InsertABIMachineTimeAction extends Action {
        /**
         * @author GMeenakshi
```

```
 *      date: 14 Nov 2007
 **/
Connection con;
ResultSet rs;
Statement stmt;
Statement Bccstmt;
ResultSet Bccrs;
String from="";
String to="";
String cc="";
String bcc="";
String subject="";
String text="";
String CancelUserList="";

String inw="";

     public String AbiMachine(String platename,Connection con){
         String machine="";
         try{
         stmt=con.createStatement();
         rs=stmt.executeQuery("select abi_sequencer from ce_electrophoresis where pcr_plate_id='"+platenam
e+"'");
         while(rs.next()){
                 machine=rs.getString(1);
         }
         }catch(Exception e){
                 System.out.println("Exception in AbiMachine method of InsertABIMachine : "+e);
         }
         return machine;
     }


public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse
res)throws Exception{
        HttpSession session=req.getSession(true);
        String msg="";
        //user Authentication
        if(session.getAttribute("user")==null){
                msg="logout";
                map.findForwardConfig(msg);
        }
        try{
                //database connection

                ResultSet rs=null;
                Calendar cal=new GregorianCalendar();
                ServletContext context = servlet.getServletContext();
```

```
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        stmt=con.createStatement();
                        DynaActionForm af=(DynaActionForm)form;
                        String[] days={"Sunday","Monday","Tuesday","Wednesday","Thursday","Friday","Saturday"};
                        String plates= (String)session.getAttribute("plateIds");
                        String project="";String crop="";
                        String study="";        String experiment=null;
                        String BookedDateTime="";
                        //String server="mail.icrisat.org";
                        SendMail abimail=new SendMail();
                        //String server="10.3.1.15";
                        Properties p=new Properties();
                        String server="";

                        p.load(new FileInputStream(session.getServletContext().getRealPath("//")+"//WEB-INF//confi
g//"+"ConfigureMailling.properties"));
                        server=p.getProperty("smtpServer");
                        to = p.getProperty("ABI_Operator_to");
                cc=p.getProperty("ABI_Operator_cc");
                        //System.out.println("%%%%%%%%%%%%%%%%%%%%%%%% The Mail Server ip == "+iP);

                        //String server="10.3.1.14";

                        String pSlots="";
                from="LIMS";
                //to = "K.ESHWAR@CGIAR.ORG";
                //cc="R.PUNNA@CGIAR.org";
                //cc="r.kumar@cgiar.org";

                Statement stmt1=con.createStatement();
                        String user=(String)session.getAttribute("user");
                        pSlots=(String)session.getAttribute("previousSlots");
                        InsertABIMachineTimeAction abi=new InsertABIMachineTimeAction();
                        String machine=abi.AbiMachine(plates, con);
                        Statement stmt2=con.createStatement();
                        /* replaced the below query on 27th may 2008 because experiment was not retrieved from vie
ws */
                        //ResultSet rs1=stmt2.executeQuery("Select distinct status_view.upsc_id,status.experiment_
name from status Inner join status_view on status_view.experiment_name=status.experiment_name where status.pcr_plate_id='"
+plates+"'");

                        /*** changed query ie from pcr to run  **/
                        //ResultSet rs1=stmt2.executeQuery("SELECT distinct experiment_master.upsc_id, experiment_
master.experiment_name FROM genotype_master INNER JOIN experiment_master ON genotype_master.experiment_name = experiment_m
aster.experiment_name INNER JOIN pcr_tracking_well ON genotype_master.lims_id = pcr_tracking_well.lims_id where pcr_tracki
ng_well.pcr_plate_id='"+plates+"'");
                        /** end **/
```

```
117                         ResultSet rs1=stmt2.executeQuery("SELECT distinct experiment_master.upsc_id, experiment_ma
ster.experiment_name FROM genotype_master INNER JOIN experiment_master ON genotype_master.experiment_name = experiment_mas
ter.experiment_name INNER JOIN run_tracking_well ON genotype_master.lims_id = run_tracking_well.lims_id where run_tracking
_well.run_plate_id='"+plates+"'");
118                         while(rs1.next()){
119                                 String upsc_id=rs1.getString(1);
120                                 experiment=rs1.getString(2);
121                                 rs=stmt1.executeQuery("Select project_name,study_name,crop_name from user_psc wher
e upsc_id='"+upsc_id+"'");
122                                 while(rs.next()){
123                                         project=rs.getString(1);
124                                         study=rs.getString(2);
125                                         crop=rs.getString(3);
126                                 }
127                         }
128                         if(experiment.endsWith("~~~PCR")){
129                                 String[] ename=experiment.split("~~~PCR");
130                         experiment=ename[0];
131                 }
132                         Statement st=con.createStatement();
133                 ResultSet rs2=st.executeQuery("select distinct abi_sequencer_time from ce_electrophoresis where pc
r_plate_id='"+plates+"'");
134                 String lastBookedtime="";
135                 while(rs2.next()){
136                         lastBookedtime=rs2.getString(1);
137                 }
138                         //System.out.println("**********    af.get(cells)*******:="+af.get("cells"));
139                         //if((session.getAttribute("cancelslot")==null)||(session.getAttribute("cancelslot")==="")|
|(session.getAttribute("cancelslot")=="null")){
140                         BookedDateTime=(String)af.get("cells");
141                         //}
142                         String filenames = "";
143                         String files="";
144                         if(!(BookedDateTime.equals("")){
145                                 String date=(String)session.getAttribute("dates");
146                                 String[] SplitdateTime=BookedDateTime.split("!@!@!");
147                                 String Bookedtimes="";
148                                 String[] time1={"00:00","02:30","05:00","07:30","10:00","12:30","15:00","17:30","2
0:00","22:30"};
149                                 String[] times1={"00:00-02:30AM","02:30-05:00AM","05:00-07:30AM","07:30-10:00AM","
10:00-12:30PM","12:30-15:00PM","15:00-17:30PM","17:30-20:00PM","20:00-22:30PM","22:30-24:00AM"};
150                                 String[] time2={"00:00","00:35","01:10","01:45","02:20","02:55","03:30","04:05","0
4:40","05:15","05:50","06:25","07:00","07:35","08:10","08:45","09:20","09:55","10:30","11:05","11:40","12:15","12:50","13:
25","14:00","14:35","15:10","15:45","16:20","16:55","17:30","18:05","18:40","19:15","19:50","20:25","21:00","21:35","22:10
","22:45","23:20"};
151                                 String[] times2= {"00:00-00:35AM","00:35-01:10AM","01:10-01:45AM","01:45-02:20AM",
"02:20-02:55AM","02:55-03:30AM","03:30-04:05AM","04:05-04:40AM","04:40-05:15AM","05:15-05:50AM","05:50-06:25AM","06:25-07:
00AM","07:00-07:35AM","07:35-08:10AM","08:10-08:45AM","08:45-09:20AM","09:20-09:55AM","09:55-10:30AM","10:30-11:05AM","11:
```

```
05-11:40AM","11:40-12:15PM","12:15-12:50PM","12:50-13:25PM","13:25-14:00PM","14:00-14:35PM","14:35-15:10PM","15:10-15:45PM
","15:45-16:20PM","16:20-16:55PM","16:55-17:30PM","17:30-18:05PM","18:05-18:40PM","18:40-19:15PM","19:15-19:50PM","19:50-2
0:25PM","20:25-21:00PM","21:00-21:35PM","21:35-22:10PM","22:10-22:45PM","22:45-23:20PM","23:20-23:55PM"};

                                for(int l=0;l<days.length;l++){
                                        if(machine.equals("3700")){
                                                for(int a=0;a<time1.length;a++){
                                                        for(int s=0;s<SplitdateTime.length;s++){
                                                                if((SplitdateTime[s].startsWith(a+"~~!!"+l+"~~!!")
)){
                                                                        Bookedtimes=Bookedtimes+SplitdateTime[s]+"
!@!@!";
                                                                        break;
                                                                }
                                                        }
                                                        //if((((!(Bookedtimes.equals("")))&&(!(Bookedtimes.endsWith
("timebreak"))))&&((((!(Bookedtimes.equals("")))&&(!(Bookedtimes.endsWith(a+"~~!!"+l+"~~!!"+times1[a]+"!@!@!")))))){

                                                        if((((!(Bookedtimes.equals("")))&&(a==time1.length-1))||((!
(Bookedtimes.equals("")))&&(!(Bookedtimes.endsWith("timebreak"))))&&((!(Bookedtimes.equals("")))&&(!(Bookedtimes.endsWith(
a+"~~!!"+l+"~~!!"+times1[a]+"!@!@!"))))  ){
                                                                Bookedtimes=Bookedtimes+"timebreak";

                                                        }
                                                }
                                        }else{
                                                for(int a=0;a<time2.length;a++){
                                                        for(int s=0;s<SplitdateTime.length;s++){
                                                                if(SplitdateTime[s].startsWith(a+"~~!!"+l+"~~!!"))
{
                                                                        Bookedtimes=Bookedtimes+SplitdateTime[s]+"
!@!@!";
                                                                        break;
                                                                }
                                                        }
                                                        //if((((!(Bookedtimes.equals("")))&&(!(Bookedtimes.endsWith
("timebreak"))))&&((((!(Bookedtimes.equals("")))&&(!(Bookedtimes.endsWith(a+"~~!!"+l+"~~!!"+times2[a]+"!@!@!")))))){
                                                        if((((!(Bookedtimes.equals("")))&&(a==time2.length-1))||((!
(Bookedtimes.equals("")))&&(!(Bookedtimes.endsWith("timebreak"))))&&((!(Bookedtimes.equals("")))&&(!(Bookedtimes.endsWith(
a+"~~!!"+l+"~~!!"+times2[a]+"!@!@!"))))  ){
                                                                Bookedtimes=Bookedtimes+"timebreak";

                                                        }

                                                }
                                        }

                                }
```

```
                                    String []daysinmonth=date.split(",");
                                    String[] splitdate=daysinmonth[0].split("-");
                                    int weekdate=Integer.parseInt(splitdate[0]);
                                    int month=Integer.parseInt(splitdate[1]);
                                    cal.clear();
                                    cal.clear(Calendar.DAY_OF_MONTH);
                                    cal.set(Calendar.MONTH,month-1);
                                    cal.set(Calendar.DAY_OF_MONTH,month-1);
                                    String Bookeddates="";String fromdate="";
                                    String[] Registeredtimes=Bookedtimes.split("timebreak");String fDate="";
                                    //String lastmonthmaxdate=session.getAttribute("lastmonthmaxdate").toString();
                                    //int maxdate=Integer.parseInt(lastmonthmaxdate);
                                    int maxdate=cal.getActualMaximum(Calendar.DAY_OF_MONTH);
                                    for(int i=0;i<Registeredtimes.length;i++){

                                            String[]timesbook=Registeredtimes[i].split("!@!@!");
                                            String[] fromtime=timesbook[0].split("~~!!");
                                            String[] totime=timesbook[(timesbook.length)-1].split("~~!!");
                                            int day=Integer.parseInt(fromtime[1]);
                                            int Starttime=Integer.parseInt(fromtime[0]);

                                            if((weekdate+day)>maxdate){
                                                    if(Integer.parseInt(splitdate[1])+1<10){
                                                            fromdate=String.valueOf(weekdate+day-maxdate)+"-0"+String.
valueOf(Integer.parseInt(splitdate[1])+1)+"-"+splitdate[2];
                                                    }else{
                                                            fromdate=String.valueOf(weekdate+day-maxdate)+"-"+String.v
alueOf(Integer.parseInt(splitdate[1])+1)+"-"+splitdate[2];
                                                    }
                                            }else{
                                                    fromdate=String.valueOf(weekdate+day)+"-"+splitdate[1]+"-"+splitda
te[2];
                                            }
                                            String from="";
                                            if(i==0)
                                            fDate=fromdate;
                                            if(machine.equals("3700")){
                                                    from=days[day]+","+fromdate+","+time1[Starttime];
                                            }else{
                                                    from=days[day]+","+fromdate+","+time2[Starttime];
                                            }
                                            int endtime=Integer.parseInt(totime[0]);
                                            int day1;
                                            String totime1="";
                                            if(machine.equals("3700")){
                                                    /*modified on 27th march
                                                     * if(endtime==47){
                                                            day1=Integer.parseInt(totime[1])+1;
```

```
                                                        totime1="00:00";
                                                        end
                                                        */
                                                if(endtime==9){
                                                /*modified on 27th march
                                                        day1=Integer.parseInt(totime[1])+1;     */
                                                        day1=Integer.parseInt(totime[1]);
                                                        totime1="24:00";
                                                }else{
                                                        day1=Integer.parseInt(totime[1]);

                                                        totime1=time1[endtime+1];
                                                }
                                        }else{
                                                if(endtime==40){

                                                        totime1="23:55";
                                                }else{
                                                        totime1=time2[endtime+1];
                                                }
                                                        day1=Integer.parseInt(totime[1]);

                                        }
                                        String todate="";
                                        if((weekdate+day1)>maxdate){
                                                if(Integer.parseInt(splitdate[1])+1<10){
                                                        todate=String.valueOf(weekdate+day1-maxdate)+"-0"+String.v
alueOf(Integer.parseInt(splitdate[1])+1)+"-"+splitdate[2];
                                                }else{
                                                        todate=String.valueOf(weekdate+day1-maxdate)+"-"+String.va
lueOf(Integer.parseInt(splitdate[1])+1)+"-"+splitdate[2];
                                                }
                                        }else{
                                                todate=String.valueOf(weekdate+day1)+"-"+splitdate[1]+"-"+splitdat
e[2];
                                        }
                                        if(day1==7){
                                                day1=0;
                                        }
                                        String to=days[day1]+","+todate+","+totime1;

                                        String ss=from+" to "+to;
                                        Bookeddates=Bookeddates+ss+" & ";
                                }
                                if((pSlots==null)||(pSlots==")){
                                        Bookeddates=Bookeddates;
                                        Bookeddates=Bookeddates.substring(0, Bookeddates.lastIndexOf("&"));
                                }else{
```

```
                                        Bookeddates=pSlots+"& "+Bookeddates;
                                        Bookeddates=Bookeddates.substring(0, Bookeddates.lastIndexOf("&"));

                                }
                                String QueryString=(String)session.getAttribute("QueryString");

                                String QS="";
                                if(QueryString.equals("nextslots")){
                                        if((session.getAttribute("cancelslot")=="")||(session.getAttribute("cancel
slot")=="null")||(session.getAttribute("cancelslot")==null))
                                                QS="Add";
                                        else
                                                QS="edit";
                                }else if(QueryString.equals("edit")){
                                        QS="edit";
                                }else{
                                        project=(String)session.getAttribute("project");
                                        study=(String)session.getAttribute("study");
                                        crop=(String)session.getAttribute("crop");
                                        experiment=session.getAttribute("selectedexperiment").toString();
                                        QS="Add";
                                }
                                File dir = new File(session.getServletContext().getRealPath("//")+"/PLTFiles/"+stu
dy+"_"+crop+"_"+user+"/");

                                File[] dirFiles = dir.listFiles();

                                String[] strFileNames = new String[dirFiles.length];

                                String strPcrPlate = "";
                                String strProjecPCRName = "";

                                //for(int i=0;i<plates.length;i++){
                                        strProjecPCRName = project+"_"+plates;
                                //}

                                //int k = 0;
                                for(int i=0;i<dirFiles.length;i++){
                                        //System.out.println(strFileNames[i]);
                                        strFileNames[i] = dirFiles[i].getName();
                                        String strpcrplate = "";
                                        if(strFileNames[i].endsWith(".txt")){
                                                strpcrplate     = strFileNames[i].substring(0,strFileNames[i].last
IndexOf(".txt"));
                                        }else{
                                                strpcrplate = strFileNames[i].substring(0,strFileNames[i].lastInde
xOf("_"));
                                        }
```

```
314                                         //for(int j=0;j<strProjecPCRName.length;j++){

315                                                                     //String strPpcr = (String)session.getAttribute("c
eproject1")+"_"+plates[j];
316                                                 if(strProjecPCRName.equals(strpcrplate)){
317                                                         strPcrPlate = strFileNames[i];

318                                         //      k++;
319                                                 }
320                                         //}
321                                     }
322                                         filenames=session.getServletContext().getRealPath("//")+"/PLTFiles/"+study
+"_"+crop+"_"+user+"/"+strPcrPlate;
323                                         session.setAttribute("strPcrPlate", strPcrPlate);

324
325                             if(QueryString.equals("edit")){
326                                     subject="Edit Booking: "+user+", "+machine+", "+fDate+"%%"+user+"%%"+strPcrPlate;
327                                     text="Dear Operator, \n \n\t "
328                                     +session.getAttribute("user")+" wants to change his/her booked time on the 'ABI "+
machine+"' from '"+lastBookedtime+"' to '"+Bookeddates+"'.\n \nFor Project : "+project+" ,\nStudy : "+study+" ,\nExperimen
t : "+experiment+",\nPlate : "+plates+".";
329
330
331                                     String CancelTimeDate=req.getParameter("cancelledCells");
332                                     String[] CancelTimeDate1=CancelTimeDate.split("!%%!");
333                                     String CanDateTime="";
334
335                                     for(int cc=0;cc<CancelTimeDate1.length;cc++){
336                                             String[] CancelTimeDate2=CancelTimeDate1[cc].split("~~!!");
337
338                                             CanDateTime=CanDateTime+CancelTimeDate2[2]+","+CancelTimeDate2[3]+"\n\t\t\
t";
339                                     }
340                                     //System.out.println(CanDateTime);
341
342                                     String to1="";
343                                             String subject1="";String text1="";
344                                     Bccstmt=con.createStatement();
345                                             Bccrs=Bccstmt.executeQuery("select email,user_id from user_info where emai
l<>'?'");
346                                             subject1="Edit Booking : "+user;
347                                             text1="Name : "+session.getAttribute("user")+"\n \nMachine : ABI"+machine+
"\n \nCancellation Time:"+CanDateTime;
348                                             //text1="Dear "+Bccrs.getString(2)+", \n \n\t "
349                                     //+session.getAttribute("user")+" has cancelled his/her booked time on the 'ABI "+
machine+"' from '"+lastBookedtime+"' to '"+Bookeddates+"'. \n \n\tFor Project : "+project+" , Study : "+study+" ,Experimen
t : "+experiment+". Plate : "+plates+".";
```

```
350                                             while(Bccrs.next()){
351                                                     //if((Bccrs.getString(1).contains(".org")) && ((!Bccrs.getString(1
).equals("D.Hoisington99@cgiar.org")) && (!Bccrs.getString(1).equals("C.Hash99@cgiar.org"))&& (!Bccrs.getString(1).equals(
"R.K.Varshney99@cgiar.org"))){
352                                                     if((Bccrs.getString(1).contains(".org")) && (!Bccrs.getString(1).e
quals("R.K.Varshney99@cgiar.org"))){
353                                                             to1=Bccrs.getString(1);
354                                                             /****sending mail to Lims User group****/
355                                                             abimail.sendMailToGroup(server,from,to1,subject1,text1);
356                                                     }
357                                             }
358                             }else{
359                                     subject="ABI Machine Time Booking: "+user+", "+machine+", "+fDate+"%%"+user+"%%"+s
trPcrPlate;
360                                     text="Dear Operator, \n \n\t "
361                                     +session.getAttribute("user")+" has booked time on the 'ABI"+machine+"' on "+Booke
ddates+".\n\n\tFor Project : "+project+" ,\n\tStudy : "+study+" ,\n\tExperiment : "+experiment+",\n\tPlate : "+plates+".";

362                             }
363
364                             /****sending mail to Lims ABI Operator****/
365                             abimail.sendMail(server,from,to,cc,subject,text,filenames);
366                             session.setAttribute("QueryString", QS);
367
368                                     stmt.executeUpdate("update ce_electrophoresis set abi_sequencer_time='"+Bookeddate
s+"' where pcr_plate_id='"+plates+"'");
369
370                                     session.setAttribute("bookedTime", Bookeddates);

371                                     msg="msg";
372                             }
373                             session.setAttribute("status", "false");
374                             if (session != null) {
375                                     session.removeAttribute("previousSlots");
376                                     session.removeAttribute("slot");
377                                     session.removeAttribute("cancelslot");
378                             }
379                     }catch(Exception e){
380                             System.out.println("exception in InsertABIMachine : "+e);
381                             e.printStackTrace();
382                     }finally{
383                             try{
384                             if(con!=null){
385                                     con.close();
386                             }
387                             if(stmt!=null){
388                                     stmt.close();
389                             }
```

```
                        if(rs!=null){
                                rs.close();
                        }
                        }catch(Exception e){
                                System.out.println("exception in finally block of InsertABIMachine : "+e);
                        }
                }
                return map.findForward(msg);
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/CancelABIMachineAction.java

```
package org.icrisat.lims.sampletracking.electrophoresis;

import java.io.File;
import java.io.FileInputStream;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.Properties;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.SendMail;

/**
 * @author Swapna nair on 28th August 2008
 * Class for Cancel ABIMachine Booking Time
 */
public class CancelABIMachineAction extends Action {
        public ActionForward execute(ActionMapping map,ActionForm af,HttpServletRequest req,HttpServletResponse re
s) throws Exception{
                Connection con=null;
                Statement stmt=null;
                ResultSet rs=null;
                Statement stmt1=null;
                ResultSet rs1=null;
                Statement stmt2=null;
```

```
35                  ResultSet rs2=null;
36                  Statement stmt3=null;
37                  Statement Bccstmt;
38                  ResultSet Bccrs;
39                  String msg="";
40                  String plates="";
41                  String editslotDate="";
42                  String editslotDay="";
43                  String CancelBookedSlots="";
44                  String Sequencer="";
45                  String from="";
46                  String to="";String togrp="";
47                  String cc="";
48                  String bcc="";
49                  String subject="";String subjectgrp="";
50                  String text="";String textgrp="";
51                  try{
52                          HttpSession session=req.getSession();
53
54                          /************** DATABASE CONNECTION **************/
55                          ServletContext context=servlet.getServletContext();
56                          DataSource dataSource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);

57                          con=dataSource.getConnection();
58                          stmt=con.createStatement();
59                          stmt1=con.createStatement();
60                          stmt2=con.createStatement();
61                          stmt3=con.createStatement();
62                          Bccstmt=con.createStatement();
63
64                          /********************** Cancel Booking Step1 *********************/
65                          if(req.getQueryString().equals("step1")){
66                                  if(session!=null){
67                                          session.removeAttribute("cancelslotDate");
68                                          session.removeAttribute("cancelslotDays");
69                                          session.removeAttribute("cancelslotDateTime");
70                                          session.removeAttribute("abiSequencer");
71
72                                  }
73                                  String[] time3700={"00:00","02:30","05:00","07:30","10:00","12:30","15:00","17:30"
,"20:00","22:30"};
74                                  String[] times3700={"00:00-02:30AM","02:30-05:00AM","05:00-07:30AM","07:30-10:00AM
","10:00-12:30PM","12:30-15:00PM","15:00-17:30PM","17:30-20:00PM","20:00-22:30PM","22:30-24:00AM"};
75                                  String[] time3130={"00:00","00:35","01:10","01:45","02:20","02:55","03:30","04:05"
,"04:40","05:15","05:50","06:25","07:00","07:35","08:10","08:45","09:20","09:55","10:30","11:05","11:40","12:15","12:50","
13:25","14:00","14:35","15:10","15:45","16:20","16:55","17:30","18:05","18:40","19:15","19:50","20:25","21:00","21:35","22
:10","22:45","23:20"};
76                                  String[] times3130= {"00:00-00:35AM","00:35-01:10AM","01:10-01:45AM","01:45-02:20A
```

```
M","02:20-02:55AM","02:55-03:30AM","03:30-04:05AM","04:05-04:40AM","04:40-05:15AM","05:15-05:50AM","05:50-06:25AM","06:25-
07:00AM","07:00-07:35AM","07:35-08:10AM","08:10-08:45AM","08:45-09:20AM","09:20-09:55AM","09:55-10:30AM","10:30-11:05AM","
11:05-11:40AM","11:40-12:15PM","12:15-12:50PM","12:50-13:25PM","13:25-14:00PM","14:00-14:35PM","14:35-15:10PM","15:10-15:4
5PM","15:45-16:20PM","16:20-16:55PM","16:55-17:30PM","17:30-18:05PM","18:05-18:40PM","18:40-19:15PM","19:15-19:50PM","19:5
0-20:25PM","20:25-21:00PM","21:00-21:35PM","21:35-22:10PM","22:10-22:45PM","22:45-23:20PM","23:20-23:55PM"};
                                plates=req.getParameter("plateId");

                                rs=stmt.executeQuery("select distinct abi_sequencer_time,abi_sequencer from ce_ele
ctrophoresis where pcr_plate_id='"+plates+"'");
                                while(rs.next()){
                                        String tempdates="";String tempdays="";
                                        Sequencer=rs.getString(2);
                                        String[] editslot=rs.getString(1).split("&");
                                        for(int i=0;i<editslot.length;i++){
                                                String[] editslot1=editslot[i].split("to");
                                                String[] editslot2=editslot1[0].split(",");

                                                /*****   removing duplicate dates  *******/
                                                if(!tempdates.equals(editslot2[1])){

                                                        editslotDate=editslotDate+editslot2[1]+",";
                                                }
                                                tempdates=editslot2[1];

                                                /*****   removing duplicate days  *******/
                                                if(!tempdays.equals(editslot2[0])){

                                                        editslotDay=editslotDay+editslot2[0]+",";
                                                }
                                                tempdays=editslot2[0];

                                        }

                                        /************** calculating Slots ************/
                                        String BookedDateTime=rs.getString(1);
                                        if((!BookedDateTime.equals("")){
                                                String[] BookedDateTime1=BookedDateTime.split("&");
                                                for(int bdt=0;bdt<BookedDateTime1.length;bdt++){
                                                        String[] BookedDateTime2=BookedDateTime1[bdt].split("to");
                                                        String[] startdatetime=BookedDateTime2[0].split(",");
                                                        String[] enddatetime=BookedDateTime2[1].split(",");
                                                        String starthours=startdatetime[2].trim();
                                                        String endhours=enddatetime[2].trim();
                                                        String dates=startdatetime[1].trim();

                                                        /****** editslotDate1 is for Booked Dates ********/
                                                        String[] editslotDate1=editslotDate.split(",");
                                                        for(int j=0;j<editslotDate1.length;j++){
```

```
   117
   118                                                
```

```
                                                                                String kk="false";String kk1="false";
                                                                                int l=0;
                                                                                int endtime=time3130.length;
                                                                                if(dates.equals(editslotDate1[j])){
                                                                                        for(int k=0;k<time3130.length;k++)
{
                                                                                                if(starthours.equals(time3
130[k])){
                                                                                                        kk="true";
                                                                                                        l=k;
                                                                                                        break;
                                                                                                }
                                                                                        }
                                                                                        for(int k=0;k<time3130.length;k++)
{
                                                                                                if(endhours.equals("23:55"
)&& k==(time3130.length-1)){
                                                                                                        kk="false";
                                                                                                        kk1="true";
                                                                                                        endtime=k+1;
                                                                                                }
                                                                                                if(endhours.equals(time313
0[k])){
                                                                                                        kk="false";
                                                                                                        endtime=k+1;
                                                                                                }
                                                                                                if(kk.equals("true")){
                                                                                                        if(k==l||k>l){
                                                                                                                CancelBook
edSlots=CancelBookedSlots+k+"~~!!"+j+"~~!!"+times3130[k]+"~~!!"+editslotDate1[j]+"~!~!~";
                                                                                                        }
                                                                                                }
                                                                                        }
                                                                                        if(kk1.equals("true")){
                                                                                                for(int k=l;k<endtime;k++)
{
                                                                                                        CancelBookedSlots=
CancelBookedSlots+k+"~~!!"+j+"~~!!"+times3130[k]+"~~!!"+editslotDate1[j]+"~!~!~";
                                                                                                }
                                                                                        }
                                                                                }
                                                                        }
                                                                }
                                                        }
                                                }
                                        }
                                session.setAttribute("cancelslotDate",editslotDate);
                                session.setAttribute("cancelslotDays",editslotDay);
```

```
                                session.setAttribute("cancelslotDateTime",CancelBookedSlots);
                                session.setAttribute("abiSequencer", Sequencer);
                                session.setAttribute("plate", plates);

                                msg="CancelBooking";
                        }else{
                                /********************** Cancel Booking Step2 *********************/

                                String CancelBookedTime="";
                                String[] CancelBookedTime1=null;
                                String cancelledSlots="";
                                String CancelBookedTime3="";
                                String lastBookedSlots="";
                                String experiment="";String project="";String crop="";String study="";
                                String filenames = "";
                                String abimachine=(String)session.getAttribute("abiSequencer");
                                String abiPlate=(String)session.getAttribute("plate");
                                String user=(String)session.getAttribute("user");
                                //System.out.println("   abiPlate="+abiPlate+"   "+abimachine);
                                /************ Mail Function **************/
                                SendMail abimail=new SendMail();
                                //String server="10.3.1.15";
                                Properties p=new Properties();
                                String server="";

                                p.load(new FileInputStream(session.getServletContext().getRealPath("//")+"//WEB-INF//config//"+"ConfigureMailling.properties"));
                                server=p.getProperty("smtpServer");
                                //String server="10.3.1.14";
                                from = "LIMS";
                                to = p.getProperty("ABI_Operator_to");
                        cc=p.getProperty("ABI_Operator_cc");
                                //to = "K.ESHWAR@CGIAR.ORG";
                                //cc = "r.kumar@cgiar.org";

                                /*************** For Experiments **************/
                                //System.out.println("select distinct abi_sequencer_time from ce_electrophoresis where pcr_plate_id='"+abiPlate+"'");
                                rs1=stmt1.executeQuery("select distinct abi_sequencer_time from ce_electrophoresis where pcr_plate_id='"+abiPlate+"'");
                        while(rs1.next()){
                                lastBookedSlots=rs1.getString(1);
                        }

                        /*************** For Project,Study & Crop **************/
                        /** query changed ie from pcr to run **/
                        //rs2=stmt2.executeQuery("SELECT distinct experiment_master.upsc_id, experiment_master.experiment_name FROM genotype_master INNER JOIN experiment_master ON genotype_master.experiment_name = experiment_master.expe
```

```
riment_name INNER JOIN pcr_tracking_well ON genotype_master.lims_id = pcr_tracking_well.lims_id where pcr_tracking_well.pc
r_plate_id='"+abiPlate+"'");
   239                          rs2=stmt2.executeQuery("SELECT distinct experiment_master.upsc_id, experiment_master.exper
iment_name FROM genotype_master INNER JOIN experiment_master ON genotype_master.experiment_name = experiment_master.experi
ment_name INNER JOIN run_tracking_well ON genotype_master.lims_id = run_tracking_well.lims_id where run_tracking_well.run_
plate_id='"+abiPlate+"'");
   240                                  while(rs2.next()){
   241                                          String upsc_id=rs2.getString(1);
   242                                          experiment=rs2.getString(2);
   243                                          rs=stmt3.executeQuery("Select project_name,study_name,crop_name from user_
psc where upsc_id='"+upsc_id+"'");
   244                                          while(rs.next()){
   245                                                  project=rs.getString(1);
   246                                                  study=rs.getString(2);
   247                                                  crop=rs.getString(3);
   248                                          }
   249                                  }
   250                                  if(experiment.endsWith("~~~PCR"))
   251                          {
   252                                  String[] ename=experiment.split("~~~PCR");
   253                                  experiment=ename[0];
   254                          }
   255
   256                                  if(req.getParameter("CheckCancel").equals("clicked")){
   257                                          CancelBookedTime=(String)req.getParameter("cancelledCells");
   258
   259                                          /************** checking whether all Slots has been cancelled*************
/
   260                                          if(CancelBookedTime.equals("")){
   261                                                  subject="Cancel Booking";
   262                                                  stmt.executeUpdate("update ce_electrophoresis set abi_sequencer_ti
me='"+CancelBookedTime+"' where pcr_plate_id='"+abiPlate+"'");
   263                                                  text="Dear Operator, \n \n\t "
   264                                          +session.getAttribute("user")+" wants to cancel his/her booked time on the
 'ABI "+abimachine+"' on "+lastBookedSlots+" .\n \n\tFor Project : "+project+" ,\n\tStudy : "+study+" ,\n\tExperiment : "+
experiment+",\n\tPlate "+abiPlate+".";
   265
   266                                                  /************** Sending Mail to LIMS User group regarding Cancella
tion of slots****************/
   267
   268                                                  String CancelTimeDate=req.getParameter("MailcancelledCells");
   269                                          String[] CancelTimeDate1=CancelTimeDate.split("!@!@!");

   270                                          String CanDateTime="";
   271                                          String tempcanslots="";
   272                                          for(int i=0;i<CancelTimeDate1.length;i++){

   273                                                  String[] CancelTimeDate2=CancelTimeDate1[i].split("~~!!");
```

```
                                                String tempcanslots1=CancelTimeDate2[2]+","+CancelTimeDate2[3];
                                                if(!tempcanslots.equals(tempcanslots1)){
                                                        CanDateTime=CanDateTime+CancelTimeDate2[2]+","+CancelTimeDate2[3]+"\n \t \t";
                                                }
                                                tempcanslots=tempcanslots1;
                                        }

                                        Bccrs=Bccstmt.executeQuery("select email,user_id from user_info where email<>'?'");
                                        //Bccrs=Bccstmt.executeQuery("select emailid,name from email where emailid<>'?'");
                                                subjectgrp="Alert: ABI booking cancellation; "+user;
                                                textgrp="Name : "+session.getAttribute("user")+"\n \nMachine : ABI "+abimachine+"\n \nCancellation Time:"+CanDateTime;
                                                while(Bccrs.next()){
                                                        if((Bccrs.getString(1).contains(".org")) && (!Bccrs.getString(1).equals("R.K.Varshney99@cgiar.org"))){
                                                                togrp=Bccrs.getString(1);

                                                                /************ sending mail to Lims User group ***********/
                                                                abimail.sendMailToGroup(server,from,togrp,subjectgrp,textgrp);
                                                        }
                                                }
                                                /*********** sending mail to Lims ABI Operator ****************/


                                                abimail.sendCancelMail(server, from, to, cc, subject, text);
                                                msg="Completecancel";
                                                return map.findForward(msg);
                                        }
                                        CancelBookedTime1=CancelBookedTime.split("!@!@!");

                                }else{
                                        CancelBookedTime=(String)session.getAttribute("cancelslotDateTime");
                                        CancelBookedTime1=CancelBookedTime.split("~!~!~");
                                }

                                for(int i=0;i<CancelBookedTime1.length;i++){
                                        String[] CancelBookedTime2=CancelBookedTime1[i].split("~~!!");
                                        cancelledSlots=cancelledSlots+CancelBookedTime2[0]+"~~!!"+CancelBookedTime2[1]+"~~!!"+CancelBookedTime2[2]+"!@!@!";
                                }
                                CancelBookedTime3=cancelledSlots;

                                /************** to get Cancelled Days & Dates  *****************/
```

```
                                    String date=(String)session.getAttribute("cancelslotDate");
                                    String[] CancelledDates=date.split(",");
                                    String days=(String)session.getAttribute("cancelslotDays");
                                    String[] CancelledDays=days.split(",");

                                    String[] SplitdateTime=CancelBookedTime3.split("!@!@!");
                                    String Bookedtimes="";

                                    String[] time3700={"00:00","02:30","05:00","07:30","10:00","12:30","15:00","17:30"
,"20:00","22:30"};
                                    String[] times3700={"00:00-02:30AM","02:30-05:00AM","05:00-07:30AM","07:30-10:00AM
","10:00-12:30PM","12:30-15:00PM","15:00-17:30PM","17:30-20:00PM","20:00-22:30PM","22:30-24:00AM"};
                                    String[] time3130={"00:00","00:35","01:10","01:45","02:20","02:55","03:30","04:05"
,"04:40","05:15","05:50","06:25","07:00","07:35","08:10","08:45","09:20","09:55","10:30","11:05","11:40","12:15","12:50","
13:25","14:00","14:35","15:10","15:45","16:20","16:55","17:30","18:05","18:40","19:15","19:50","20:25","21:00","21:35","22
:10","22:45","23:20"};
                                    String[] times3130= {"00:00-00:35AM","00:35-01:10AM","01:10-01:45AM","01:45-02:20A
M","02:20-02:55AM","02:55-03:30AM","03:30-04:05AM","04:05-04:40AM","04:40-05:15AM","05:15-05:50AM","05:50-06:25AM","06:25-
07:00AM","07:00-07:35AM","07:35-08:10AM","08:10-08:45AM","08:45-09:20AM","09:20-09:55AM","09:55-10:30AM","10:30-11:05AM","
11:05-11:40AM","11:40-12:15PM","12:15-12:50PM","12:50-13:25PM","13:25-14:00PM","14:00-14:35PM","14:35-15:10PM","15:10-15:4
5PM","15:45-16:20PM","16:20-16:55PM","16:55-17:30PM","17:30-18:05PM","18:05-18:40PM","18:40-19:15PM","19:15-19:50PM","19:5
0-20:25PM","20:25-21:00PM","21:00-21:35PM","21:35-22:10PM","22:10-22:45PM","22:45-23:20PM","23:20-23:55PM"};

                                    for(int l=0;l<CancelledDates.length;l++){
                                            if(abimachine.equals("3700")){
                                                    for(int a=0;a<time3700.length;a++){
                                                            for(int s=0;s<SplitdateTime.length;s++){
                                                                    if(SplitdateTime[s].startsWith(a+"~~!!"+l+"~~!!"))
{
                                                                            Bookedtimes=Bookedtimes+SplitdateTime[s]+"
!@!@!";
                                                                            break;
                                                                    }
                                                            }
                                                            //System.out.println(Bookedtimes);
                                                            //if((((!(Bookedtimes.equals(""))))&&(!(Bookedtimes.endsWith
("timebreak"))))&&((((!(Bookedtimes.equals(""))))&&(!(Bookedtimes.endsWith(a+"~~!!"+l+"~~!!"+times3700[a]+"!@!@!")))))){
                                                            if((!(Bookedtimes.equals("")))&&(a==time3700.length-1) ){

                                                                    Bookedtimes=Bookedtimes+"timebreak";

                                                            }
                                                    }
                                            }else{
                                                    for(int a=0;a<time3130.length;a++){
                                                            for(int s=0;s<SplitdateTime.length;s++){
                                                                    if(SplitdateTime[s].startsWith(a+"~~!!"+l+"~~!!"))
{
```

```
                                                                                Bookedtimes=Bookedtimes+SplitdateTime[s]+"!@!@!";
                                                                                break;
                                                                        }
                                                                }
                                                                //if(((!(Bookedtimes.equals("")))&&(!(Bookedtimes.endsWith("timebreak"))))&&(((!(Bookedtimes.equals("")))&&(!(Bookedtimes.endsWith(a+"~~!!"+l+"~~!!"+times3130[a]+"!@!@!")))))){
                                                                if((!(Bookedtimes.equals("")))&&(a==time3130.length-1)){
                                                                        Bookedtimes=Bookedtimes+"timebreak";

                                                                }
                                                        }
                                                }
                                        }
                                        //System.out.println("Bookedtimes in cancel booking ="+Bookedtimes);
                                        String finalBookedDates="";
                                        String[] Bookedtimes1=Bookedtimes.split("timebreak");
                                        for(int i=0;i<Bookedtimes1.length;i++){
                                                String CancelledFromTime="";
                                                String CancelledToTime="";
                                                String BookedTotime1="";
                                                int day1=0;

                                                String[] Bookedtimes2=Bookedtimes1[i].split("!@!@!");
                                                String[] BookedFromtime=Bookedtimes2[0].split("~~!!");
                                                String[] BookedTotime=Bookedtimes2[(Bookedtimes2.length)-1].split("~~!!");

                                                int day=Integer.parseInt(BookedFromtime[1]);

                                                int Starttime=Integer.parseInt(BookedFromtime[0]);
                                                int endtime=Integer.parseInt(BookedTotime[0]);

                                                /************* formatting FromDate to store in Database ***************/
                                                if(abimachine.equals("3700")){
                                                        CancelledFromTime=CancelledDays[day]+","+CancelledDates[day]+","+time3700[Starttime];
                                                }else{
                                                        CancelledFromTime=CancelledDays[day]+","+CancelledDates[day]+","+time3130[Starttime];
                                                }

                                                if(abimachine.equals("3700")){
                                                        if(endtime==9){
                                                                day1=Integer.parseInt(BookedTotime[1]);
                                                                BookedTotime1="24:00";
                                                        }else{
                                                                day1=Integer.parseInt(BookedTotime[1]);
```

```
                                                        BookedTotime1=time3700[endtime+1];

                                                }
                                        }else{
                                                if(endtime==40){

                                                        BookedTotime1="23:55";
                                                }else{
                                                        BookedTotime1=time3130[endtime+1];
                                                }
                                                        day1=Integer.parseInt(BookedTotime[1]);
                                        }
                                        if(day1==7){
                                                day1=0;
                                        }

                                        /************* formatting ToDate to store in Database ***************/
                                        CancelledToTime=CancelledDays[day1]+","+CancelledDates[day1]+","+BookedTotime1;
                                        String finalBooked=CancelledFromTime+" to "+CancelledToTime;

                                        finalBookedDates=finalBookedDates+finalBooked+" & ";

                                }
                                finalBookedDates=finalBookedDates;
                                finalBookedDates=finalBookedDates.substring(0, finalBookedDates.lastIndexOf("&"));

                                /****************** For PLT Files **********************/
                                //System.out.println(session.getServletContext().getRealPath("//")+"/PLTFiles/"+study+"_"+crop+"_"+user+"/");
                                File dir = new File(session.getServletContext().getRealPath("//")+"/PLTFiles/"+study+"_"+crop+"_"+user+"/");
                                File[] dirFiles = dir.listFiles();
                                String[] strFileNames = new String[dirFiles.length];
                                String strPcrPlate = "";
                                String strProjecPCRName = "";
                                strProjecPCRName = project+"_"+abiPlate;
                                for(int i=0;i<dirFiles.length;i++){
                                        strFileNames[i] = dirFiles[i].getName();
                                        String strpcrplate = "";
                                        if(strFileNames[i].endsWith(".txt")){
                                                strpcrplate     = strFileNames[i].substring(0,strFileNames[i].lastIndexOf(".txt"));

                                        }else{
                                                strpcrplate = strFileNames[i].substring(0,strFileNames[i].lastIndexOf("_"));

                                        }
                                        if(strProjecPCRName.equals(strpcrplate)){
```

```
                                                        strPcrPlate = strFileNames[i];
                                                }
                                        }
                                        filenames=session.getServletContext().getRealPath("//")+"/PLTFiles/"+study+"_"+cro
p+"_"+user+"/"+strPcrPlate;
                                        session.setAttribute("strPcrPlate", strPcrPlate);

                                        subject="Edit Booking: "+user+", "+abimachine +", "+CancelledDates[0]+"%%"+user+"%
%"+strPcrPlate;
                                text="Dear Operator, \n \n\t "
                                +session.getAttribute("user")+" wants to change his/her booked time on the 'ABI "+abimachi
ne+"'.\n\n\tPrevious Booking :"+lastBookedSlots+"\n\tCurrent Booking : "+finalBookedDates+".\n \n\t\tFor Project : "+proje
ct+" ,\n\t\tStudy : "+study+" ,\n\t\tExperiment : "+experiment+",\n\t\tPlate : "+abiPlate+".";


                                String CancelTimeDate=req.getParameter("MailcancelledCells");
                                String[] CancelTimeDate1=CancelTimeDate.split("!@!@!");
                                String CanDateTime="";
                                String tempcanslots="";
                                for(int i=0;i<CancelTimeDate1.length;i++){
                                        String[] CancelTimeDate2=CancelTimeDate1[i].split("~~!!");
                                        String tempcanslots1=CancelTimeDate2[2]+","+CancelTimeDate2[3];
                                        if(!tempcanslots.equals(tempcanslots1)){
                                                CanDateTime=CanDateTime+CancelTimeDate2[2]+","+CancelTimeDate2[3]+"\n\t\t\
t";
                                        }
                                        tempcanslots=tempcanslots1;
                                }

                                Bccrs=Bccstmt.executeQuery("select email,user_id from user_info where email<>'?'");
                                //Bccrs=Bccstmt.executeQuery("select emailid,name from email where emailid<>'?'");
                                        subjectgrp="Alert: ABI booking cancellation; "+user;
                                        textgrp="Name : "+session.getAttribute("user")+"\n \nMachine : ABI"+abimachine+"\n
 \nCancellation Time:"+CanDateTime;
                                        while(Bccrs.next()){
                                                if((Bccrs.getString(1).contains(".org")) && (!Bccrs.getString(1).equals("R
.K.Varshney99@cgiar.org"))){
                                                        togrp=Bccrs.getString(1);

                                                        /****sending mail to Lims User group****/
                                                        abimail.sendMailToGroup(server,from,togrp,subjectgrp,textgrp);
                                                }
                                        }

                                        /*********** sending mail to Lims ABI Operator ****************/
                                        //System.out.println(text);
                                        abimail.sendMail(server,from,to,cc,subject,text,filenames);

```

```
                                /*********** Updating Edited Slots to DataBase ****************/
                                //System.out.println("update ce_electrophoresis set abi_sequencer_time='"+finalBoo
kedDates+"' where pcr_plate_id='"+(String)session.getAttribute("plate")+"'");
                                stmt.executeUpdate("update ce_electrophoresis set abi_sequencer_time='"+finalBooke
dDates+"' where pcr_plate_id='"+(String)session.getAttribute("plate")+"'");

                                session.setAttribute("bookedTime", finalBookedDates);
                                msg="CancelBookingConfirm";
                        }
                }catch(Exception e){
                        System.out.println("Exception at CancelBooking : "+e);
                        e.printStackTrace();
                }finally{
                        try{
                                if(con!=null){
                                        con.close();
                                }
                        }catch(Exception e){
                                System.out.println("Exception at CancelBooking : "+e);
                                e.printStackTrace();
                        }
                }
                return map.findForward(msg);
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/RetrieveExperimentAction.java

```
package org.icrisat.lims.sampletracking.electrophoresis;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.Date ;
import java.text.DateFormat;

import org.apache.struts.Globals;
import org.apache.struts.action.*;

import javax.servlet.ServletContext;
import javax.servlet.http.*;
import javax.sql.DataSource;

public class RetrieveExperimentAction extends Action {
        /**
         * @author GMeenakshi
         *      Date : 06 Nov, 2007
```

```
 **/
        Connection con;
        ResultSet rs;
        Statement stmt;



        //Retrieve Experiments list
        public ArrayList BookSlotExperimentList(HttpServletRequest req, Connection con,String upscId){
                ArrayList experimentlist=new ArrayList();
                String userid=(String)req.getSession().getAttribute("user");
                try{
                        stmt = con.createStatement();
                        //rs=stmt.executeQuery("SELECT distinct genotype_master.experiment_name FROM ce_electrophoresis INNER JOIN dna_electrophoresis ON (ce_electrophoresis.pcr_plate_id=dna_electrophoresis.pcr_plate_id) INNER JOIN genotype_master ON (dna_electrophoresis.upsc_id=genotype_master.upsc_id) INNER JOIN pcr_tracking_well ON (genotype_master.lims_id=pcr_tracking_well.lims_id) AND (pcr_tracking_well.pcr_plate_id=dna_electrophoresis.pcr_plate_id) where dna_electrophoresis.upsc_id='"+upscId+"' and (ce_electrophoresis.abi_sequencer_time is null or ce_electrophoresis.abi_sequencer_time='')");
                        rs=stmt.executeQuery("SELECT distinct genotype_master.experiment_name FROM ce_electrophoresis INNER JOIN dna_electrophoresis ON (ce_electrophoresis.pcr_plate_id=dna_electrophoresis.pcr_plate_id) INNER JOIN genotype_master ON (dna_electrophoresis.upsc_id=genotype_master.upsc_id) INNER JOIN run_tracking_well ON (genotype_master.lims_id=run_tracking_well.lims_id) AND (run_tracking_well.run_plate_id=dna_electrophoresis.pcr_plate_id) where dna_electrophoresis.upsc_id='"+upscId+"' and (ce_electrophoresis.abi_sequencer_time is null or ce_electrophoresis.abi_sequencer_time='')");

                        while(rs.next()){
                                //System.out.println(rs.getString(1));
                                experimentlist.add(rs.getString(1).toString());
                        }
                }catch(Exception e){
              e.printStackTrace();
            }
                return experimentlist;
        }

        //Retrieve PCRPlates List
        public ArrayList BookSlotPCRPlateList(HttpServletRequest req, Connection con,String projectStudy,String experiment){
                ArrayList pcrPlatelist=new ArrayList();
                String userid=(String)req.getSession().getAttribute("user");
                try{
                        stmt = con.createStatement();

                        if(projectStudy.equals("ceproject")){
                                rs=stmt.executeQuery("select distinct(pcr_plate_id) from dna_electrophoresis where upsc_id like '%"+ userid +"' and pcr_plate_id  in (select pcr_plate_id from ce_electrophoresis where abi_sequencer_time is null or abi_sequencer_time='')");
                        }else{
```

```
                                //rs=stmt.executeQuery("SELECT distinct ce_electrophoresis.pcr_plate_id FROM ce_el
ectrophoresis INNER JOIN dna_electrophoresis ON (ce_electrophoresis.pcr_plate_id=dna_electrophoresis.pcr_plate_id) INNER J
OIN genotype_master ON (dna_electrophoresis.upsc_id=genotype_master.upsc_id) INNER JOIN pcr_tracking_well ON (genotype_mas
ter.lims_id=pcr_tracking_well.lims_id) AND (pcr_tracking_well.pcr_plate_id=dna_electrophoresis.pcr_plate_id) where genotyp
e_master.experiment_name='"+experiment+"' and (ce_electrophoresis.abi_sequencer_time is null or ce_electrophoresis.abi_seq
uencer_time='')");
                                rs=stmt.executeQuery("SELECT distinct ce_electrophoresis.pcr_plate_id FROM ce_elec
trophoresis INNER JOIN dna_electrophoresis ON (ce_electrophoresis.pcr_plate_id=dna_electrophoresis.pcr_plate_id) INNER JOI
N genotype_master ON (dna_electrophoresis.upsc_id=genotype_master.upsc_id) INNER JOIN run_tracking_well ON (genotype_maste
r.lims_id=run_tracking_well.lims_id) AND (run_tracking_well.run_plate_id=dna_electrophoresis.pcr_plate_id) where genotype_
master.experiment_name='"+experiment+"' and (ce_electrophoresis.abi_sequencer_time is null or ce_electrophoresis.abi_seque
ncer_time='')");
                        }
                        while(rs.next()){
                                pcrPlatelist.add(rs.getString(1).toString());
                        }
                }catch(Exception e){
                e.printStackTrace();
            }
                return pcrPlatelist;
        }

        public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse
res)throws Exception{
                HttpSession session=req.getSession(true);
                 String msg="";
//      user identification
                if((String)session.getAttribute("user")==null){
                        msg="logout";
                        return map.findForward(msg);
                }
                try{
                        //database connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();


                        //get current date
                        java.util.Date theDate = new Date();
                        java.text.DateFormat df1 = DateFormat.getDateInstance(DateFormat.SHORT);
                        String elecdate = df1.format(theDate);
                        String[] elecdate1=elecdate.split("/");
                        String dat="";

                        if(Integer.parseInt(elecdate1[1])<10){
                                if(Integer.parseInt(elecdate1[0])<10){
                                        dat="0"+elecdate1[1]+"-0"+elecdate1[0]+"-"+elecdate1[2];
```

```
                                }else{
                                        dat="0"+elecdate1[1]+"-"+elecdate1[0]+"-"+elecdate1[2];
                                }
                        }else{
                                if(Integer.parseInt(elecdate1[0])<10){
                                        dat=elecdate1[1]+"-0"+elecdate1[0]+"-"+elecdate1[2];
                                }else{
                                        dat=elecdate1[1]+"-"+elecdate1[0]+"-"+elecdate1[2];
                                }
                        }
                        //System.out.println(dat);
                        session.setAttribute("CurrentDate",dat);

                        RetrieveExperimentAction dbean=new RetrieveExperimentAction();
                        ArrayList projectlist=new ArrayList();
                        ArrayList studylist=new ArrayList();
                        ArrayList experimentlist=new ArrayList();
                        ArrayList pcrplatelist=new ArrayList();


                        String project_name=(String)session.getAttribute("project");
                        String study_name=(String)session.getAttribute("study");
                        String pscQstring=req.getParameter("pa");
                        String New_ProjectStudy=project_name+study_name;
                        experimentlist=dbean.BookSlotExperimentList(req,con,(String)session.getAttribute("upsc"));
                        session.setAttribute("experiment",experimentlist);

                        if(pscQstring==null){
                                session.setAttribute("pcrplateid",pcrplatelist);
                                session.setAttribute("ref", "ref11");
                        }else if(pscQstring.equals("experiment")){
                                String experimentname=req.getParameter("experiment");
                                pcrplatelist=dbean.BookSlotPCRPlateList(req,con,New_ProjectStudy,experimentname);
                                session.setAttribute("pcrplateid",pcrplatelist);
                        }

                }catch(Exception e){
                        e.printStackTrace();
                }finally{
                        if(con!=null){
                                con.close();
                        }
                }

                return map.findForward("msg");
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/RetrievePlatesAction.java

```
 1  package org.icrisat.lims.sampletracking.electrophoresis;
 2
 3  import java.sql.*;
 4
 5  import java.text.DateFormat;
 6  import java.util.ArrayList;
 7  import java.util.Date;
 8
 9  import javax.servlet.ServletContext;
10  import javax.servlet.http.*;
11  import javax.sql.DataSource;
12
13  import org.apache.struts.Globals;
14  import org.apache.struts.action.*;
15
16
17  public class RetrievePlatesAction extends Action{
18          /**
19           * @author GMeenakshi
20           *      Date : 24 Dec, 2007
21           **/
22
23          public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse
res)throws Exception{
24                  HttpSession session=req.getSession(true);
25                  String msg="";
26                  //user identification
27                  if((String)session.getAttribute("user")==null){
28                          msg="logout";
29                          return map.findForward(msg);
30                  }
31
32  //              get current date
33                  java.util.Date theDate = new Date();
34                  java.text.DateFormat df1 = DateFormat.getDateInstance(DateFormat.SHORT);
35                  String elecdate = df1.format(theDate);
36                  String[] elecdate1=elecdate.split("/");
37                  String dat="";
38                  int date=Integer.parseInt(elecdate1[1]);
39                  int month=Integer.parseInt(elecdate1[0]);
40                  if(date<10){
41                          if(month<10){
42                                  dat="0"+elecdate1[1]+"-0"+elecdate1[0]+"-"+elecdate1[2];
43                          }else{
44                                  dat="0"+elecdate1[1]+"-"+elecdate1[0]+"-"+elecdate1[2];
45                          }
```

```
                }else{
                        if(month<10){
                                dat=elecdate1[1]+"-0"+elecdate1[0]+"-"+elecdate1[2];
                        }else{
                                dat=elecdate1[1]+"-"+elecdate1[0]+"-"+elecdate1[2];
                        }
                }
                session.setAttribute("CurrentDate",dat);
                //System.out.println(dat);

//              timestamp code
                 java.util.Date utilDate=new java.util.Date(System.currentTimeMillis());
                 Timestamp sqldate=new Timestamp(utilDate.getTime());
                 Timestamp ts=new Timestamp(sqldate.getTime());
                String datetime=String.valueOf(ts);
                String[] datetime1=datetime.split(" ");
                String[]currentdate=datetime1[0].split("-");

                //System.out.println("Current date is  : "+datetime1[0]);
                Connection con=null;
                ResultSet rs=null;
                Statement st=null;
                ArrayList pcrPlatelist=new ArrayList();
                try{


                        //database connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                        String userid=(String)session.getAttribute("user");
                        st=con.createStatement();
                        //rs=st.executeQuery("SELECT distinct ce_electrophoresis.PCR_Plate_Id,ce_electrophoresis.a
bi_sequencer_time FROM ce_electrophoresis INNER JOIN PCR_Tracking ON ce_electrophoresis.PCR_Plate_Id = PCR_Tracking.PCR_Pl
ate_Id WHERE (PCR_Tracking.upsc_id ~ '"+userid+"') AND (ce_electrophoresis.PCR_Plate_Id NOT IN (SELECT DISTINCT pcr_plate_
id FROM ce_electrophoresis WHERE abi_sequencer_time = '' or abi_sequencer_time is null))");
                        rs=st.executeQuery("SELECT distinct ce_electrophoresis.PCR_Plate_Id,ce_electrophoresis.abi
_sequencer_time FROM ce_electrophoresis INNER JOIN run_tracking ON ce_electrophoresis.PCR_Plate_Id = run_tracking.run_plat
e_id WHERE (run_tracking.upsc_id ~ '"+userid+"') AND (ce_electrophoresis.PCR_Plate_Id NOT IN (SELECT DISTINCT pcr_plate_id
 FROM ce_electrophoresis WHERE abi_sequencer_time = '' or abi_sequencer_time is null))");
                        while(rs.next()){
                                String PlateName=rs.getString(1);
                                String bookedTime=rs.getString(2);
                                String[]starttime=null;

                                        starttime=bookedTime.split(",");

```

```
                                        String[]dates=starttime[1].split("-");
                                        //System.out.println(starttime[1]+"  ,  "+datetime1[0]);
                                        if(dates[0].trim().equals(currentdate[2])){
                                                //checking year
                                                if(Integer.parseInt(dates[2])==(Integer.parseInt(currentdate[0])))
{
                                                        if(Integer.parseInt(dates[1])>Integer.parseInt(currentdate
[1])){
                                                                pcrPlatelist.add(PlateName);
                                                        }
                                                }else if(Integer.parseInt(dates[2])>(Integer.parseInt(currentdate[
0]))){
                                                        pcrPlatelist.add(PlateName);
                                                }

                                        }else if(Integer.parseInt(dates[0])>(Integer.parseInt(currentdate[2]))){
                                                if(Integer.parseInt(dates[2])==(Integer.parseInt(currentdate[0])))
{
                                                        if(Integer.parseInt(dates[1])>Integer.parseInt(currentdate
[1])){
                                                                pcrPlatelist.add(PlateName);
                                                        }else if(Integer.parseInt(dates[1])==Integer.parseInt(curr
entdate[1])){
                                                                if((Integer.parseInt(dates[0])-1)==(Integer.parseI
nt(currentdate[2]))){
                                                                        String[]selectedtime=starttime[2].split(":
");
                                                                        String[]currenttime=datetime1[1].split(":"
);
                                                                        if((Integer.parseInt(selectedtime[0]))>(In
teger.parseInt(currenttime[0]))){
                                                                                pcrPlatelist.add(PlateName);
                                                                        }
                                                                }else{
                                                                        pcrPlatelist.add(PlateName);
                                                                }

                                                        }
                                                }else if(Integer.parseInt(dates[2])>(Integer.parseInt(currentdate[
0]))){
                                                        pcrPlatelist.add(PlateName);
                                                }


                                        }else if(Integer.parseInt(dates[0])<(Integer.parseInt(currentdate[2]))){
                                                if(Integer.parseInt(dates[2])==(Integer.parseInt(currentdate[0])))
{
                                                        if(Integer.parseInt(dates[1])>Integer.parseInt(currentdate
```

```
[1])){
                                                                    pcrPlatelist.add(PlateName);
                                                            }
                                                    }else if(Integer.parseInt(dates[2])>(Integer.parseInt(currentdate[
0]))){
                                                            pcrPlatelist.add(PlateName);
                                                    }

                                            }
                                    }
                                    session.setAttribute("pcrplateid",pcrPlatelist);
                                    }catch(Exception e){
                                            System.out.println("Exception in class RetrievePlatesAction : "+e);
                                    }finally{
                                            try{
                                                    if(rs!=null){rs.close();}
                                                    if(st!=null){st.close();}
                                                    if(con!=null){con.close();}
                                            }catch(Exception e){
                                                    System.out.println("Exception in the finally block of RetrievePlatesAction
 : "+e);
                                            }
                                    }
                            session.setAttribute("ref", "ref1");
                            return map.findForward("msg");
                    }
            }
./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/RetrieveGEIdAction.java


package org.icrisat.lims.sampletracking.electrophoresis;


import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
```

```
import org.apache.struts.action.ActionMapping;

public class RetrieveGEIdAction extends org.apache.struts.action.Action {

        Connection con;
        ResultSet rs;
        Statement stmt;

        /*
         * retrieves PCRPlates from DB for displaying
         * in PageElectrophoresis Submodule of Electrophoresis module
         * under SampleTracking
         * */
        public ArrayList gelplateidList(HttpServletRequest req, Connection con){
                ArrayList gelpidlist=new ArrayList();
                String userid=(String)req.getSession().getAttribute("user");
                String upscid=(String)req.getSession().getAttribute("upsc");
                String electype="PAGE";
                try{
                        stmt = con.createStatement();
                        rs=stmt.executeQuery("SELECT distinct pcr_marker.PCR_Plate_Id FROM pcr_marker WHERE pcr_ma
rker.upsc_id = '"+upscid+"' and pcr_marker.electrophoresis_type='"+electype+"' AND (pcr_marker.PCR_Plate_Id NOT IN (SELECT
 DISTINCT pcr_plate_id FROM dna_electrophoresis WHERE upsc_id = '"+upscid+"'))");
                        while(rs.next()){
                        gelpidlist.add(rs.getString(1).toString());
                }
                  }catch(Exception e){
                      e.printStackTrace();
                       }
        return gelpidlist;
        }

    public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res)
throws Exception
        {
        HttpSession session = req.getSession(true);
//      user identification

                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        RetrieveGEIdAction dbean = new RetrieveGEIdAction();
                        ArrayList gplist = dbean.gelplateidList(req, con);
```

```
                        session.setAttribute("gpltid", gplist);
                }catch(Exception e){
                        System.out.println(e);
                }finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return am.findForward("msggel");
     }
}./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/BookABIMachineAction.java


/** this class retrieves already booked slots of a perticular week **/
package org.icrisat.lims.sampletracking.electrophoresis;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.Calendar;
import java.util.GregorianCalendar;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 * @author psrikalyani
 *      created on 7 dec 2008
 */
public class BookABIMachineAction extends Action{

        Connection con=null;
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                HttpSession session=req.getSession(true);
                String msg="";

                //User Authentication
```

```
                if((String)session.getAttribute("user")==null){
                        msg="logout";
                        am.findForward(msg);
                }

                Statement st=null;
                ResultSet rs2=null;
                Statement st2=null;
                DynaActionForm form =(DynaActionForm)af;
                int count=1;
                String plate_type="";

                String plates="";
                String Fromdate="";
                String Todate="";
                String abi_sequencer="";

                String BookedDateTime="";
                String Bookeddates="";

                String date="";
                String slotsforSelection="";
                String dateTime="";
                String Booked_time="";
                String slot1="";
                String start="";
                String end="";
                String Slot="";
                String slotDate="";
                String slotUsername="";
                String[] booked=null;

                String finalSDate="";String finalEDate="";

                String project=(String)session.getAttribute("project");
                session.setAttribute("selectedProject", project);
                String Study=(String)session.getAttribute("study");
                session.setAttribute("selectedStudy", Study);

                Calendar cal=new GregorianCalendar();
                try{
                        //database connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        String[] days={"Sunday","Monday","Tuesday","Wednesday","Thursday","Friday","Saturday"};
                        String nextWeekStatus="false";

```

```
                        st=con.createStatement();

                        if(req.getQueryString().equals("nextslots")){
                                ResultSet rs1=st.executeQuery("select distinct(abi_sequencer) from ce_electrophore
sis where pcr_plate_id='"+(String)session.getAttribute("plateIds")+"'");
                                while(rs1.next()){
                                        abi_sequencer=rs1.getString(1);
                                }
                                session.setAttribute("sequencer", abi_sequencer);
                                String lastWeekEndDate=req.getParameter("endDate");
                                date=(String)session.getAttribute("dates");

                                String[] sDate=lastWeekEndDate.split("-");

                                int intDate=Integer.parseInt(sDate[0]);
                                int intMonth= Integer.parseInt(sDate[1]);
                                int intYear=Integer.parseInt(sDate[2]);
                                int intMonth1;
                                cal.clear(Calendar.DAY_OF_MONTH);
                                cal.set(Calendar.MONTH,intMonth-1);
                                cal.set(Calendar.DAY_OF_MONTH,intMonth-1);
                                int ldateMonth=cal.getMaximum(Calendar.DAY_OF_MONTH);
                                int firstdateofmonth=cal.getMinimum(Calendar.DAY_OF_MONTH);
                                        if(intDate==ldateMonth){
                                                intDate=1;
                                                intMonth=intMonth+1;
                                        }else{
                                                intDate=intDate+1;
                                        }
                                        if(intMonth<10){
                                                finalSDate=intDate+"-0"+intMonth+"-"+intYear;
                                                finalEDate=intDate+6+"-0"+intMonth+"-"+intYear;
                                        }else{
                                                finalSDate=intDate+"-"+intMonth+"-"+intYear;
                                                finalEDate=intDate+6+"-"+intMonth+"-"+intYear;
                                        }
                                Fromdate=finalSDate;
                                Todate=finalEDate;
                                plates=(String)session.getAttribute("plateIds");
                                BookedDateTime=(String)form.get("cells");
                                if(!(BookedDateTime.equals("")")){
                                        String[] SplitdateTime=BookedDateTime.split("!@!@!");
                                        String Bookedtimes="";
                                        String[] time1={"00:00","02:30","05:00","07:30","10:00","12:30","15:00","1
7:30","20:00","22:30"};
                                        String[] time2={"00:00","00:35","01:10","01:45","02:20","02:55","03:30","0
4:05","04:40","05:15","05:50","06:25","07:00","07:35","08:10","08:45","09:20","09:55","10:30","11:05","11:40","12:15","12:
50","13:25","14:00","14:35","15:10","15:45","16:20","16:55","17:30","18:05","18:40","19:15","19:50","20:25","21:00","21:35
```

```
","22:10","22:45","23:20"};
                                        for(int l=0;l<days.length;l++){
                                                if(abi_sequencer.equals("3700")){
                                                        for(int a=0;a<time1.length;a++){
                                                                for(int s=0;s<SplitdateTime.length;s++){
                                                                        if(SplitdateTime[s].startsWith(a+"~~!!"+l+
"~~!!")){
                                                                                Bookedtimes=Bookedtimes+SplitdateT
ime[s]+"!@!@!";
                                                                                break;
                                                                        }
                                                                }
                                                                if((!(Bookedtimes.equals("")))&&(a==time1.length-1
)){
                                                                        Bookedtimes=Bookedtimes+"timebreak";
                                                                }
                                                        }
                                                }else{
                                                        for(int a=0;a<time2.length;a++){
                                                                for(int s=0;s<SplitdateTime.length;s++){
                                                                        if(SplitdateTime[s].startsWith(a+"~~!!"+l+
"~~!!")){
                                                                                Bookedtimes=Bookedtimes+SplitdateT
ime[s]+"!@!@!";
                                                                                break;
                                                                        }
                                                                }
                                                                if((!(Bookedtimes.equals("")))&&(a==time2.length-1
)){
                                                                        Bookedtimes=Bookedtimes+"timebreak";

                                                                }

                                                        }
                                                }
                                        }
                                        String []daysinmonth=date.split(",");
                                        String[] splitdate=daysinmonth[0].split("-");
                                        int weekdate=Integer.parseInt(splitdate[0]);

                                        String[] Registeredtimes=Bookedtimes.split("timebreak");
                                        String lastmonthmaxdate=session.getAttribute("lastmonthmaxdate").toString(
);
                                        int maxdate=Integer.parseInt(lastmonthmaxdate);
                                        for(int i=0;i<Registeredtimes.length;i++){
                                                String[]timesbook=Registeredtimes[i].split("!@!@!");
                                                String[] fromtime=timesbook[0].split("~~!!");
                                                String[] totime=timesbook[(timesbook.length)-1].split("~~!!");
```

```
int day=Integer.parseInt(fromtime[1]);
int Starttime=Integer.parseInt(fromtime[0]);
String fromdate="";
if((weekdate+day)>maxdate){
        if(Integer.parseInt(splitdate[1])+1<10){
                fromdate=String.valueOf(weekdate+day-maxdate)+"-0"+String.valueOf(Integer.parseInt(splitdate[1])+1)+"-"+splitdate[2];
        }else{
                fromdate=String.valueOf(weekdate+day-maxdate)+"-"+String.valueOf(Integer.parseInt(splitdate[1])+1)+"-"+splitdate[2];
        }
}else{
        fromdate=String.valueOf(weekdate+day)+"-"+splitdate[1]+"-"+splitdate[2];
}
String from="";
if(abi_sequencer.equals("3700")){
        from=days[day]+","+fromdate+","+time1[Starttime];
}else{
        from=days[day]+","+fromdate+","+time2[Starttime];
}
int endtime=Integer.parseInt(totime[0]);
int day1;
String totime1="";
if(abi_sequencer.equals("3700")){
        if(endtime==9){
                day1=Integer.parseInt(totime[1]);
                totime1="24:00";
        }else{
                day1=Integer.parseInt(totime[1]);

                totime1=time1[endtime+1];

        }
}else{
        if(endtime==40){
                day1=Integer.parseInt(totime[1]);
                totime1="23:55";
        }else{
                day1=Integer.parseInt(totime[1]);
                totime1=time2[endtime+1];
        }
        //day1=Integer.parseInt(totime[1]);

}
String todate="";
if((weekdate+day1)>maxdate){
        if(Integer.parseInt(splitdate[1])+1<10){
```

```
                                                                        todate=String.valueOf(weekdate+day1-maxdate)+"-0"+String.valueOf(Integer.parseInt(splitdate[1])+1)+"-"+splitdate[2];
                                                                }else{
                                                                        todate=String.valueOf(weekdate+day1-maxdate)+"-"+String.valueOf(Integer.parseInt(splitdate[1])+1)+"-"+splitdate[2];
                                                                }
                                                        }else{
                                                                todate=String.valueOf(weekdate+day1)+"-"+splitdate[1]+"-"+splitdate[2];
                                                        }
                                                        if(day1==7){
                                                                day1=0;
                                                        }
                                                        String to=days[day1]+","+todate+","+totime1;

                                                        String ss=from+" to "+to;
                                                        Bookeddates=Bookeddates+ss+" & ";
                                                }

                                                Bookeddates=Bookeddates.substring(0, Bookeddates.lastIndexOf("&"));

                                        }
                                        nextWeekStatus="true";
                                        //String nextweek="yes";
                                        session.setAttribute("previousSlots", Bookeddates);
                                        session.setAttribute("status", nextWeekStatus);
                                }else{
                                        plates=req.getParameter("plateId");
                                        Fromdate=(String)form.get("fromdate");
                                        Todate=(String)form.get("todate");
                                }
                                ResultSet rsP=st.executeQuery("select plate_type from run_tracking where run_plate_id='"+plates+"'");
                                while(rsP.next()){
                                        plate_type=rsP.getString(1);
                                }
                                session.setAttribute("plate_type", plate_type);
                                session.setAttribute("plateIds", plates);

                                String Experiment=(String)form.get("experiment");
                                String QueryString=req.getQueryString();


                                ResultSet rs=st.executeQuery("select distinct(abi_sequencer) from ce_electrophoresis where pcr_plate_id='"+(String)session.getAttribute("plateIds")+"'");
                                while(rs.next()){
                                        abi_sequencer=rs.getString(1);
                                }
```

```
                        session.setAttribute("sequencer", abi_sequencer);
                        session.setAttribute("selectedexperiment", Experiment);
                        session.setAttribute("fromDate", Fromdate);
                        session.setAttribute("toDate", Todate);

                        session.setAttribute("QueryString", QueryString);

                        String[]Fromdate1=Fromdate.split("-");
                        String[]Todate1=Todate.split("-");
                        int TheDate=Integer.parseInt(Fromdate1[0]);
                        int TheMonth=Integer.parseInt(Fromdate1[1]);
                        int TheYear=Integer.parseInt(Fromdate1[2]);
                        cal.clear();
                        cal.set(Calendar.DATE,TheDate);
                        cal.set(Calendar.MONTH,TheMonth-1);
                        cal.set(Calendar.YEAR,TheYear);
                        int day=cal.get(Calendar.DAY_OF_WEEK);
                        int TheDate1=Integer.parseInt(Fromdate1[0]);
                        int TheMonth1=Integer.parseInt(Fromdate1[1]);
                        int TheYear1=Integer.parseInt(Fromdate1[2]);
                        cal.clear();
                        cal.set(Calendar.DATE,TheDate1);
                        cal.set(Calendar.MONTH,TheMonth1-1);
                        cal.set(Calendar.YEAR,TheYear1);
                        int day1=cal.get(Calendar.DAY_OF_WEEK);
                        if(day>day1){
                                System.out.println("two weeks choosen"+day+" , "+day1);
                        }
                        int dayinmonth=cal.getActualMaximum(Calendar.DAY_OF_MONTH);
                        String[] time1={"00:00","02:30","05:00","07:30","10:00","12:30","15:00","17:30","20:00","22:30"};
                        String[] times1={"00:00-02:30AM","02:30-05:00AM","05:00-07:30AM","07:30-10:00AM","10:00-12:30PM","12:30-15:00PM","15:00-17:30PM","17:30-20:00PM","20:00-22:30PM","22:30-24:00AM"};
                        String[] time2={"00:00","00:35","01:10","01:45","02:20","02:55","03:30","04:05","04:40","05:15","05:50","06:25","07:00","07:35","08:10","08:45","09:20","09:55","10:30","11:05","11:40","12:15","12:50","13:25","14:00","14:35","15:10","15:45","16:20","16:55","17:30","18:05","18:40","19:15","19:50","20:25","21:00","21:35","22:10","22:45","23:20"};
                        String[] times2= {"00:00-00:35AM","00:35-01:10AM","01:10-01:45AM","01:45-02:20AM","02:20-02:55AM","02:55-03:30AM","03:30-04:05AM","04:05-04:40AM","04:40-05:15AM","05:15-05:50AM","05:50-06:25AM","06:25-07:00AM","07:00-07:35AM","07:35-08:10AM","08:10-08:45AM","08:45-09:20AM","09:20-09:55AM","09:55-10:30AM","10:30-11:05AM","11:05-11:40AM","11:40-12:15PM","12:15-12:50PM","12:50-13:25PM","13:25-14:00PM","14:00-14:35PM","14:35-15:10PM","15:10-15:45PM","15:45-16:20PM","16:20-16:55PM","16:55-17:30PM","17:30-18:05PM","18:05-18:40PM","18:40-19:15PM","19:15-19:50PM","19:50-20:25PM","20:25-21:00PM","21:00-21:35PM","21:35-22:10PM","22:10-22:45PM","22:45-23:20PM","23:20-23:55PM"};

                        int firstdate=0;

                        firstdate=(Integer.parseInt(Fromdate1[0]))-(day-1);
                        String date1=String.valueOf(firstdate)+"-"+Fromdate1[1]+"-"+Fromdate1[2];
```

```
288                             cal.clear(Calendar.MONTH);
289                             cal.set(Calendar.MONTH,TheMonth1-2);
290                             int dayinmonth1=cal.getActualMaximum(Calendar.DAY_OF_MONTH);
291                             session.setAttribute("lastmonthmaxdate", new Integer(dayinmonth1));
292                             if(firstdate<0){
293                                     firstdate=dayinmonth1+firstdate;
294                                     if((TheMonth1-1)<0){
295                                             date1=String.valueOf(firstdate)+"-"+12+"-"+String.valueOf(TheYear-1);
296                                     }else{
297                                             //added on 03-04-2008 to show month as 01, 02,....if it is less than 10
298                                             if((TheMonth1-1)<10){
299                                                     date1=String.valueOf(firstdate)+"-0"+String.valueOf(TheMonth1-1)+"
-"+Fromdate1[2];
300                                             }else{
301                                                     date1=String.valueOf(firstdate)+"-"+String.valueOf(TheMonth1-1)+"-
"+Fromdate1[2];
302                                             }
303                                     }
304                             }
305                             date=date1+","+dayinmonth;
306                             session.setAttribute("dates", date);
307
308                             int firdate=Integer.parseInt(Fromdate1[0]);
309                             int lastdate=Integer.parseInt(Todate1[0]);
310
311                             cal.clear();
312                             cal.set(Calendar.DATE, firdate);
313                             cal.set(Calendar.MONTH, Integer.parseInt(Fromdate1[1])-1);
314                             cal.set(Calendar.YEAR, Integer.parseInt(Fromdate1[2]));
315
316                             if(lastdate>firdate){
317                                     int noOfdays=lastdate-firdate+day-1;
318                                     slotsforSelection=String.valueOf(day-1)+","+String.valueOf(noOfdays);
319                             }else{
320                                     int day11=day-1;
321                                     cal.add(Calendar.DATE, -day11);
322                                     slotsforSelection=String.valueOf(day-1)+","+String.valueOf(cal.get(Calendar.DATE))
;
323                             }
324
325                             String[] firstdateofweek=date1.split("-");
326                             int f=Integer.parseInt(firstdateofweek[0]);
327                             int month=Integer.parseInt(firstdateofweek[1]);
328                             int year=Integer.parseInt(firstdateofweek[2]);
329                             cal.clear();
330                             cal.set(Calendar.MONTH, month-1);
331                             dayinmonth=cal.getActualMaximum(Calendar.DAY_OF_MONTH);
332                             st2=con.createStatement();
```

```
                        String Busername="";
                        for(int s=0;s<=6;s++){
                                if(f>dayinmonth){
                                        f=1;
                                        month=month+1;
                                        if(month>12){
                                                year=year+1;
                                        }
                                }
                                if(month<10){
                                        date=f+"-0"+month+"-"+year;
                                }else{
                                        date=f+"-"+month+"-"+year;
                                }
                                        /// returns all booked slots of a week
                                rs=st.executeQuery("select  abi_sequencer_time,pcr_plate_id from ce_electrophoresis where abi_sequencer_time~'"+date+"' and abi_sequencer='"+abi_sequencer+"'");

                                session.setAttribute("cancelslot",req.getParameter("cancelslot"));

                                f=f+1;
                                while(rs.next()){
                                        String str="false";
                                        if((!(req.getQueryString().equals("edit"))) || (req.getQueryString().equals("nextslots"))){
                                                /** query changed ie from pcr to run **/
                                                //rs2=st2.executeQuery("select distinct up.user_id from pcr_tracking pt inner join ce_electrophoresis ce on pt.pcr_plate_id=ce.pcr_plate_id inner join user_psc up on pt.upsc_id=up.upsc_id where pt.pcr_plate_id='"+rs.getString(2)+"'");
                                                rs2=st2.executeQuery("select distinct up.user_id from run_tracking pt inner join ce_electrophoresis ce on pt.run_plate_id=ce.pcr_plate_id inner join user_psc up on pt.upsc_id=up.upsc_id where pt.run_plate_id='"+rs.getString(2)+"'");
                                                while(rs2.next()){
                                                        Busername=rs2.getString(1);
                                                }
                                        }
                                        Booked_time=rs.getString(1);

                                        if(count==1){
                                                if((req.getQueryString().equals("edit")) || ((req.getQueryString().equals("nextslots")) && (session.getAttribute("cancelslot")!=null))){
                                                        dateTime=Booked_time+"%~~%";
                                                }else{
                                                        dateTime=Booked_time+"!@@!"+Busername+"%~~%";
                                                }
                                        }
                                        String[]dateTime1=dateTime.split("%~~%");
                                        for(int i=0;i<dateTime1.length;i++){
```

```
                                                        if(dateTime1[i].equals(Booked_time)){
                                                                str="true";
                                                                break;
                                                        }
                                                }
                                                if(str.equals("false")){
                                                        if((req.getQueryString().equals("edit")) || ((req.getQueryString()
.equals("nextslots")) && (session.getAttribute("cancelslot")!=null))){
                                                                dateTime=dateTime+Booked_time+"%~~%";
                                                        }else{
                                                                dateTime=dateTime+Booked_time+"!@@!"+Busername+"%~~%";
                                                        }
                                                }
                                                count++;
                                        }
                                }
                                if(!(dateTime.equals("")")){
                                        String[] booked1=dateTime.split("%~~%");
                                        for(int a=0;a<booked1.length;a++){
                                                if((!(req.getQueryString().equals("edit"))) || (req.getQueryString().equal
s("nextslots"))){
                                                        if((session.getAttribute("cancelslot")==null)||(session.getAttribu
te("cancelslot")==")||(session.getAttribute("cancelslot")=="null")){
                                                                String[] bookedDT1=booked1[a].split("!@@!");

                                                                booked=bookedDT1[0].split("&");
                                                                slotUsername=bookedDT1[1];
                                                        }else{
                                                                booked=booked1[a].split("&");
                                                        }
                                                }else{
                                                        booked=booked1[a].split("&");
                                                }
                                                if(abi_sequencer.equals("3700")){
                                                        for(int p=0;p<booked.length;p++){
                                                                String kk="false";
                                                                int l=0;
                                                                int endtime=time1.length;
                                                                String[] dates=booked[p].split("to");
                                                                String[] startdate=dates[0].split(",");
                                                                slotDate=startdate[1];
                                                                String[] enddate=dates[1].split(",");
                                                                for(int s=0;s<days.length;s++){
                                                                        if(startdate[0].trim().equals(days[s])){
                                                                                String hours=startdate[2].trim();
                                                                                for(int k=0;k<time1.length;k++){
                                                                                        if(hours.equals(time1[k])){
                                                                                                start=k+"~~!!"+s+"~~!!"+ti
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mes1[k];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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   421                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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e1.length)){
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s2[k];
   428                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                kk="false";
   429                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                endtime=k+1;
   430                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }
   431                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if(hours .equals(time1[k])){
   432                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                end=k+"~~!!"+s+"~~!!"+time
s1[k];
   433                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                kk="false";
   434                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                endtime=k+1;
   435                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }
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   437                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                slotDate=enddate[1];
   438                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if(startdate[0].trim().equ
als(enddate[0].trim())){
   439                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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tQueryString().equals("edit")) || ((req.getQueryString().equals("nextslots")) && (session.getAttribute("cancelslot")!=null
))){
   441                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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   443                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sl
ot1=slot1+k+"~~!!"+s+"~~!!"+times1[k]+"~~!!"+slotDate+"~!~!~";
   444                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }
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   446                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }else{
   447                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if((req.getQuerySt
ring().equals("edit")) || ((req.getQueryString().equals("nextslots")) && (session.getAttribute("cancelslot")!=null))){
   448                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                slot1=slot
1+k+"~~!!"+s+"~~!!"+times1[k]+"~~!!"+slotDate+"~!~!~";
   449                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }else{
   450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                slot1=slot
1+k+"~~!!"+s+"~~!!"+times1[k]+"~~!!"+slotDate+"!@@!"+slotUsername+"~!~!~";
   451                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              
}
}
}
//modified on 27th march
if(kk.equals("true")){
slotDate=startdate[1];
for(int k=l;k<endtime;k++){
if((req.getQueryString().equals("edit")) || ((req.getQueryString().equals("nextslots")) && (session.getAttribute("cancelslot")!=null))){
slot1=slot1+k+"~~!!"+s+"~~!!"+times1[k]+"~~!!"+slotDate+"~!~!~";
}else{
slot1=slot1+k+"~~!!"+s+"~~!!"+times1[k]+"~~!!"+slotDate+"!@@!"+slotUsername+"~!~!~";
}
}
}
}
}
}else{
for(int p=0;p<booked.length;p++){
String kk="false";
int l=0;
int endtime=time2.length;
String[] dates=booked[p].split("to");
String[] startdate=dates[0].split(",");
//String startdate1=startdate[1];
slotDate=startdate[1];
String[] enddate=dates[1].split(",");
for(int s=0;s<days.length;s++){
if(startdate[0].trim().equals(days[s])){
String hours=startdate[2].trim();
for(int k=0;k<time2.length;k++){
if(hours.equals(time2[k])){
start=k+"~~!!"+s+"~~!!"+times2[k];

kk="true";
l=k;
break;
}
}

}
if(enddate[0].trim().equals(days[s])){
String hours=enddate[2].trim();
for(int k=0;k<time2.length;k++){
//modified on 27th march
if(hours.equals("23:55")&& k==(tim
```

```
e2.length)){
                                                                                                end=k+"~~!!"+s+"~~!!"+times2[k];
                                                                                                kk="false";
                                                                                                endtime=k+1;
                                                                                                }
                                                                                                if(hours.equals(time2[k])){
                                                                                                        end=k+"~~!!"+s+"~~!!"+time
s2[k];
                                                                                                        kk="false";
                                                                                                        endtime=k+1;

                                                                                                }
                                                                                                if(kk.equals("true")){
                                                                                                        slotDate=enddate[1];
                                                                                        //
                                                                                                        if(startdate[0].trim().equ
als(enddate[0].trim())){
                                                                                                                if(k==l||k>l){
                                                                                                                        if((req.ge
tQueryString().equals("edit")) || ((req.getQueryString().equals("nextslots")) && (session.getAttribute("cancelslot")!=null
))){
                                                                                                                                sl
ot1=slot1+k+"~~!!"+s+"~~!!"+times2[k]+"~~!!"+slotDate+"~!~!~";
                                                                                                                        }else{
                                                                                                                                sl
ot1=slot1+k+"~~!!"+s+"~~!!"+times2[k]+"~~!!"+slotDate+"!@@!"+slotUsername+"~!~!~";
                                                                                                                        }
                                                                                                                }

                                                                                                        }else{
                                                                                                                if((req.getQuerySt
ring().equals("edit")) || ((req.getQueryString().equals("nextslots")) && (session.getAttribute("cancelslot")!=null))){
                                                                                                                        slot1=slot
1+k+"~~!!"+s+"~~!!"+times2[k]+"~~!!"+slotDate+"~!~!~";
                                                                                                                }else{
                                                                                                                        slot1=slot
1+k+"~~!!"+s+"~~!!"+times2[k]+"~~!!"+slotDate+"!@@!"+slotUsername+"~!~!~";
                                                                                                                }
                                                                                                        }

                                                                                                }
                                                                                        }
                                                                                }
                                                                                //modified on 27th march

                                                                                if(kk.equals("true")){
                                                                                        slotDate=startdate[1];
                                                                                        for(int k=l;k<endtime;k++){
```

```
530                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
if((req.getQueryString().equals("edit")) || ((req.getQueryString().equals("nextslots")) && (session.getAttribute("cancelslot")!=null))){
slot1=slot1+k+"~~!!"+s+"~~!!"+times2[k]+"~~!!"+slotDate+"~!~!~";
}else{
slot1=slot1+k+"~~!!"+s+"~~!!"+times2[k]+"~~!!"+slotDate+"!@@!"+slotUsername+"~!~!~";
}
}
}
}
}
}
}
session.setAttribute("slotsforSelection", slotsforSelection);
session.setAttribute("slot", slot1);
msg="msg";
}catch(Exception e){
e.printStackTrace();
}finally{
try{
if(con!=null)con.close();
}catch(Exception e){
System.out.println("Exception in finally block of BookABIMachine Action : "+e);
}
}
return am.findForward(msg);
}
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/PLTFile31303730Action.java

```
1  package org.icrisat.lims.sampletracking.electrophoresis;
2
3  import java.io.File;
4  import java.io.FileOutputStream;
5  import java.io.PrintStream;
6  import java.sql.Connection;
7  import java.sql.ResultSet;
8  import java.sql.Statement;
9  import java.text.DateFormat;
10 import java.util.Date;
11
```

```
12  import javax.servlet.ServletContext;
13  import javax.servlet.http.HttpServletRequest;
14  import javax.servlet.http.HttpServletResponse;
15  import javax.servlet.http.HttpSession;
16  import javax.sql.DataSource;
17
18  import org.apache.struts.Globals;
19  import org.apache.struts.action.Action;
20  import org.apache.struts.action.ActionForm;
21  import org.apache.struts.action.ActionForward;
22  import org.apache.struts.action.ActionMapping;
23  import org.apache.struts.action.DynaActionForm;
24  import org.icrisat.lims.common.UploadExcel;
25
26
27  public class PLTFile31303730Action extends Action{
28          public ActionForward execute(ActionMapping am, ActionForm af,
29                          HttpServletRequest req, HttpServletResponse res) throws Exception
30                  {
31
32                  Connection con=null;
33                  ResultSet rs=null;
34                  Statement st=null;Statement stmt=null;Statement stmt1=null;
35
36                  String schedPref="";
37                  String plateScealing="";
38
39                  String proj = req.getSession().getAttribute("project").toString();
40                  String study=req.getSession().getAttribute("study").toString();
41                  String crop=req.getSession().getAttribute("crop").toString();
42                  String user=(String)req.getSession().getAttribute("user");
43                  String msg="";String folderName="";
44                  HttpSession session = req.getSession(true);
45  //              user identification
46                  if((String)session.getAttribute("user")==null){
47                          msg="logout";
48                          return am.findForward(msg);
49                  }
50                  try{
51                          ServletContext context = servlet.getServletContext();
52                          DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
53                          con=dataSource.getConnection();
54                          st=con.createStatement();
55                          stmt=con.createStatement();
56                          stmt1=con.createStatement();
57                          UploadExcel Gxf = new UploadExcel();
58                          String plid = session.getAttribute("cepid").toString();
59                          String userid=(String)req.getSession().getAttribute("upsc");
```

```
Date theDate = new Date();
java.text.DateFormat df1 = DateFormat.getDateTimeInstance(DateFormat.SHORT, DateFormat.SHORT);
String elecdate = df1.format(theDate);
String rootfoldname="";String fname2="";
rootfoldname="PLTFiles";
folderName=study+"_"+crop+"_"+user;
if(req.getQueryString().equals("createplt")){
        if(session!=null){
                session.removeAttribute("pltfname");
                session.removeAttribute("foldname");
        }

        // TODO Auto-generated method stub

        DynaActionForm df=(DynaActionForm)af;
        String owner=df.get("owner").toString();
        String operator=df.get("operator").toString();
        String amethod = df.get("analysismethod").toString();
        String size = df.get("size").toString();
        String resultgroup = df.get("resgroup").toString();
        if (size.equals("Add New")){
                size=df.get("sizetxt").toString();
        }
        if (amethod.equals("Add New")){
                amethod=df.get("analysistxt").toString();
        }
        if (resultgroup.equals("Add New")){
                resultgroup=df.get("resgrouptxt").toString();
        }
        String insprot = df.get("instrumentprotocol").toString();
        if (insprot.equals("Add New")){
                insprot=df.get("instrumentprotocoltxt").toString();
        }
        String applicationinstance= df.get("applicationinstance").toString();

        String sequencer=(String)session.getAttribute("sequencer");
        //System.out.println("sequencer="+sequencer);
        if(sequencer.equals("3730_cap")){
                plateScealing=df.get("platesealing").toString();
                schedPref=df.get("schedulingPref").toString();
        }
        String ptype=null;
        String fname=proj+"_"+plid+".txt";
        String strCComment="";

        rootfoldname="PLTFiles";
        folderName=study+"_"+crop+"_"+user;
```

```
106                                     String fname1=session.getServletContext().getRealPath("//")+"/"+rootfoldname;
107                                     if(!new File(fname1).exists())
108                                             new File(fname1).mkdir();
109                                     fname2= fname1+"/"+ folderName;
110                                     if(!new File(fname2).exists())
111                                     new File(fname2).mkdir();
112
113                                     session.setAttribute("foldname",folderName);
114                                     String wellid="";
115                                     String dye=""; String marker="";
116                                     String genotype="";
117                                     String[] mdetails=new String[2];
118                                     String markerDetails="";
119                                     String mark="";
120                                     rs=st.executeQuery("SELECT distinct genotype_master.genotype_id, run_tracking_well
.row_id, run_tracking_well.col_id, run_tracking_well.markers_assigned from genotype_master inner join run_tracking_well on
 genotype_master.lims_id=run_tracking_well.lims_id WHERE run_tracking_well.run_plate_id = '"+plid+"' order by run_Tracking
_Well.Col_Id,run_Tracking_Well.Row_Id");
121                                     while(rs.next()){
122                                             mark=rs.getString(4);
123                                             markerDetails="";
124                                             if(mark.contains(",")){
125                                                     String[]markers=mark.split(",");
126                                                     for(int s=0;s<markers.length;s++){
127                                                             String[] markerwithdye1=markers[s].split(":");

128                                                             if(markerwithdye1.length==3){
129                                                                     markerDetails=markerDetails+"_"+markerwithdye1[0]+
"_"+markerwithdye1[1];
130                                                             }else{
131                                                                     String[] markerwithdye=markerwithdye1[0].split("-"
);
132                                                                     markerDetails=markerDetails+"_"+markerwithdye[0]+"
_"+markerwithdye[1];
133                                                             }
134                                                     }
135                                             }else{
136                                                     String[] markerwithdye1=mark.split(":");
137                                                     if(markerwithdye1.length==3){
138                                                             markerDetails=markerDetails+"_"+markerwithdye1[0]+"_"+mark
erwithdye1[1];
139                                                     }else{
140                                                             String[] markerwithdye=markerwithdye1[0].split("-");
141                                                             markerDetails=markerDetails+"_"+markerwithdye[0]+"_"+marke
rwithdye[1];
142                                                     }
143                                             }
144                                             genotype=genotype+rs.getString(2)+"~"+rs.getString(3)+"~"+rs.getString(1)+
```

```
"~"+rs.getString(1)+markerDetails+"~!~";
                                }
                                ResultSet rs1=stmt.executeQuery("select distinct run_tracking_well.markers_assigne
d, run_tracking.plate_type from run_tracking_well inner join run_tracking on run_tracking.run_plate_id=run_tracking_well.r
un_plate_id where run_tracking_well.run_plate_id='"+plid+"'");
                        while (rs1.next()){
                                ptype=rs1.getString(2);
                                if(rs1.getString(1).contains(",")){
                                                String[] mdetails0=rs1.getString(1).split(",");
                                                for(int m=0;m<mdetails0.length;m++){
                                                        String[] mdetails1=mdetails0[m].split(":");
                                                        if(mdetails1.length==3){
                                                                marker=mdetails1[0];
                                                                dye=mdetails1[1];
                                                        }else{
                                                                mdetails=mdetails1[0].split("-");
                                                                dye=mdetails[1];
                                                                marker=mdetails[0];
                                                        }
                                                        if((dye.equalsIgnoreCase("6FAM"))||(dye.equalsIgnoreCase("
6-FAM"))||(dye.equalsIgnoreCase("FAM")))
                                                                strCComment="color comment b";
                                                        else if((dye.equalsIgnoreCase("VIC"))||(dye.equalsIgnoreCa
se("HEX")))
                                                                strCComment="color comment g";
                                                        else if(dye.equalsIgnoreCase("NED"))
                                                                strCComment="color comment y";
                                                        else
                                                                strCComment="color comment r";

                                                        stmt1.executeUpdate("insert into ce_electrophoresis values
('" + plid + "','"+marker+"','"+dye+"','"+strCComment+"","+null+","+null+","+null+","'+resultgroup+"','"+insprot+"','"+ame
thod+"','"+sequencer+"","+null+")");
                                                }
                                        }else{
                                                String[] strMarkers=rs1.getString(1).split(":");
                                                String[] splitMarkers=null;
                                                if(strMarkers.length==3){
                                                        marker=strMarkers[0];
                                                        dye=strMarkers[1];
                                                }else{
                                                        splitMarkers=strMarkers[0].split("-");
                                                        marker=splitMarkers[0];
                                                        dye=splitMarkers[1];
                                                }

                                                if((dye.equalsIgnoreCase("6FAM"))||(dye.equalsIgnoreCase("6-FAM"))
||(dye.equalsIgnoreCase("FAM")))
```

```
185                                                             strCComment="color comment b";
186                                                     else if((dye.equalsIgnoreCase("VIC"))||(dye.equalsIgnoreCase("HEX"
)))
187                                                             strCComment="color comment g";
188                                                     else if(dye.equalsIgnoreCase("NED"))
189                                                             strCComment="color comment y";
190                                                     else
191                                                             strCComment="color comment r";
192
193                                                     stmt1.executeUpdate("insert into ce_electrophoresis values('" + pl
id + "','"+marker+"','"+dye+"','"+strCComment+"","+null+","+null+","+null+","+null+","'+resultgroup+"','"+insprot+"','"+amethod+"',
'"+sequencer+"","+null+")");
194                                             }
195                             }
196                             String[] templates=genotype.split("~!~");
197                                     int len=templates.length;
198                                     String[] val=null;String template=""; String template1="";
199                                     FileOutputStream fout=null;
200                                     PrintStream bout;
201                                     fout=new FileOutputStream(fname2+"//"+fname);
202                                     bout=new PrintStream(fout);
203                                     if(sequencer.equals("3130_cap")){
204                                             bout.println("Container Name\tDescription\tContainerType\tAppType\tOwner\t
Operator");
205                                             bout.println(plid+"\t\t"+ptype+"-Well"+"\tRegular\t"+owner+"\t"+operator);
206                                             bout.println("AppServer\tAppInstance");
207                                             bout.println("GeneMapper\t"+applicationinstance);
208                                             bout.println("Well\tSample Name\tComment\tPriority\tSize Standard\tSnp Set
\tUser-Defined 3\tUser-Defined 2\tUser-Defined 1\tPanel\tStudy\tSample Type\tAnalysis Method\tResults Group 1\tInstrument
Protocol 1");
209                                             for (int k=0;k<len;k++){
210                                                     val=templates[k].split("~");
211                                                     template=val[2];
212                                                     template1=val[3];
213                                                     if(template!=""||!template.equals("")){

214                                                             wellid=val[0]+val[1];
215                                                             bout.println(wellid+"\t"+template+"\t"+template1+"\t100\t"
+size+"\t\t\t\t\t\t\t\t"+amethod+"\t"+resultgroup+"\t"+insprot);
216                                                     }
217                                             }
218                                     }else{
219                                             bout.println("Container Name\tPlate ID\tDescription\tContainerType\tAppTyp
e\tOwner\tOperator\tPlateSealing\tSchedulingPref");
220                                     bout.println(plid+"\t"+plid+"\t\t"+ptype+"-Well"+"\tRegular\t"+owner+"\t"+operator+"\t
"+plateScealing+"\t"+schedPref);
221                                             bout.println("AppServer\tAppInstance");
222                                             bout.println("GeneMapper\t"+applicationinstance);
```

```
                                        bout.println("Well\tSample Name\tComment\tSize Standard\tSnp Set\tUser-Def
ined 3\tUser-Defined 2\tUser-Defined 1\tPanel\tStudy\tSample Type\tAnalysis Method\tResults Group 1\tInstrument Protocol 1
");
                                        for (int k=0;k<len;k++){
                                                val=templates[k].split("~");
                                                template=val[2];
                                                template1=val[3];

                                                if(template!=""||!template.equals("")){
                                                        wellid=val[0]+val[1];
                                                        bout.println(wellid+"\t"+template+"\t"+template1+"\t"+size
+"\t\t\t\t\t\t\t\t"+amethod+"\t"+resultgroup+"\t"+insprot);
                                                }
                                        }
                                }
                                session.setAttribute("pltfname",fname);
                                session.setAttribute("pltid",plid);
                                msg="pltfile";
                        }else if(req.getQueryString().equals("save")){
                                plid=(String)session.getAttribute("pltid");
                                stmt.executeUpdate("insert into dna_electrophoresis values('" + plid + "','Capilla
ry','" + userid + "','" + elecdate + "","+null+")");
                                msg="save";
                        }else{
                                plid=(String)session.getAttribute("pltid");
                                String sfname=(String)req.getSession().getAttribute("pltfname");
                                folderName=study+"_"+crop+"_"+user;
                                String fileName="";

                                fname2=session.getServletContext().getRealPath("//")+"/"+rootfoldname+"/"+folderNa
me;
                                fileName=fname2+"/"+sfname;
                                stmt.executeUpdate("delete from ce_electrophoresis where pcr_plate_id='"+plid+"')
;
                                stmt1.executeUpdate("delete from dna_electrophoresis where pcr_plate_id='"+plid+"'
");
                                Gxf.deleteFile(fileName);
                                msg="delete";

                        }
                }
                catch (Exception e){
                        e.printStackTrace();
                }
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println("Exception in PLTFile31303730Action : "+e);}
```

```
                        }
                return am.findForward(msg);
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/electrophoresis/PLTFile31003700Action.java

```
//Generation of plt file for ABI3700
/*
 * Created on Oct 4, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.electrophoresis;
import java.io.File;
import java.io.FileOutputStream;
import java.io.PrintStream;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.text.DateFormat;
import java.util.Date;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import org.icrisat.lims.common.UploadExcel;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class PLTFile31003700Action extends Action {
        Connection con = null;
        ResultSet rs = null;
        Statement stmt = null;
```

```
        Statement stmt1 = null;
        String msg="";

        ResultSet rsmarkers=null;
        Statement stMarkers=null;
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {
                HttpSession session = req.getSession(true);
                //ActionErrors ae=new ActionErrors();
//              user identification
                if((String)session.getAttribute("user")==null){
                        msg="logout";
                        return am.findForward(msg);
                }


                String userid=(String)req.getSession().getAttribute("upsc");
                String user=(String)req.getSession().getAttribute("user");
                if(user.contains(" ")){
                        String[]username=user.split(" ");
                        user="";
                        for(int s=0;s<username.length;s++){
                                user=user+username[s];
                        }
                }
                String plate_id = (String)req.getSession().getAttribute("cepid");
                String proj = req.getSession().getAttribute("project").toString();
                if(proj.contains(" ")){
                        String []projectname=proj.split(" ");
                        proj="";
                        for(int f=0;f<projectname.length;f++){
                                proj=proj+projectname[f];
                        }
                }
                String study=req.getSession().getAttribute("study").toString();
                String crop=req.getSession().getAttribute("crop").toString();

                String ptype=null;
                try{
                        //creating connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        stmt = con.createStatement();
                        stmt1 = con.createStatement();
                        stMarkers=con.createStatement();
                        //String suser=(String)req.getSession().getAttribute("user");
```

```
Date theDate = new Date();
java.text.DateFormat df1 = DateFormat.getDateTimeInstance(DateFormat.SHORT, DateFormat.SHORT);
String elecdate = df1.format(theDate);
DateFormat df2 = DateFormat.getDateTimeInstance(DateFormat.MEDIUM, DateFormat.MEDIUM);
String elecdate1 = df2.format(theDate);

String elda[] = elecdate1.split(",");
String edate = elda[0]+elda[1];

String edate1[] = edate.split(" ");
String edate2 = edate1[1]+edate1[0]+edate1[2];
String fname2="";
String fname="";
String folderName="";

String rootfoldname="PLTFiles";

session.setAttribute("pltfname",fname);
session.setAttribute("foldname",folderName);


String[] strColorComment=new String[4];
String strCComment="";
String marker = "";
String temp="";
String label="";
String[] mdetails=new String[2];
String[] mdet=null;
String samples="";
int ch=65;
String marker_label="";
String marker_previous="";
String arrSub[]=new String[4];
if(req.getQueryString().equals("createplt")){
        fname=proj+"_"+plate_id+"_"+edate2+".PLT";
        folderName=study+"_"+crop+"_"+user;
        String fname1=session.getServletContext().getRealPath("//")+"/"+rootfoldname;

        fname2= fname1+"/"+ folderName;
        if(!new File(fname1).exists())
                new File(fname1).mkdir();
        if(!new File(fname2).exists())
        new File(fname2).mkdir();

        if(session!=null){
                session.removeAttribute("pltfname");
                session.removeAttribute("foldname");
```

```
                                        }
                                        session.setAttribute("pltfname",fname);
                                        session.setAttribute("foldname",folderName);
                                        DynaActionForm df = (DynaActionForm)af;

                                        String project= df.get("project").toString();
                                        String runmod = df.get("runmodule").toString();
                                        if (runmod.equals("Add New")){
                                                runmod=df.get("runmoduletxt").toString();
                                        }
                                        String analysis = df.get("analysis").toString();
                                        if (analysis.equals("Add New")){
                                                analysis=df.get("analysistxt").toString();
                                        }
                                        String suser=df.get("suser").toString();
                                        String dye = df.get("dye").toString();
                                        String dyeset = df.get("dyeset").toString();

                                        String[] splitMarkers=null;
                                        rsmarkers=stMarkers.executeQuery("select distinct run_tracking_well.markers_assign
ed, run_tracking.plate_type from run_tracking_well inner join run_tracking on run_tracking.run_plate_id=run_tracking_well.
run_plate_id where run_tracking_well.run_plate_id='"+plate_id+"'");
                                        while(rsmarkers.next()){
                                                ptype=rsmarkers.getString(2);
                                                if(rsmarkers.getString(1).contains(",")){
                                                        String[] mdetails0=rsmarkers.getString(1).split(",");
                                                        for(int m=0;m<mdetails0.length;m++){
                                                                String[] mdetails1=mdetails0[m].split(":");
                                                                if(mdetails1.length==3){
                                                                        marker=mdetails1[0];
                                                                        label=mdetails1[1];
                                                                }else{
                                                                        mdetails=mdetails1[0].split("-");
                                                                        label=mdetails[1];
                                                                        marker=mdetails[0];
                                                                }

                                                                if((label.equalsIgnoreCase("6FAM"))||(label.equalsIgnoreCa
se("6-FAM"))||(label.equalsIgnoreCase("FAM")))
                                                                        strCComment="color comment b";
                                                                else if((label.equalsIgnoreCase("VIC"))||(label.equalsIgno
reCase("HEX")))
                                                                        strCComment="color comment g";
                                                                else if(label.equalsIgnoreCase("NED"))
                                                                        strCComment="color comment y";
                                                                else
                                                                        strCComment="color comment r";

```

```
179                                                     stmt1.executeUpdate("insert into ce_electrophoresis values
('" + plate_id + "','"+marker+"','" + label + "','" + strCComment + "','"+project+"', '"+runmod+"','"+analysis+"","+null+"
","+null+","+null+","+3700+","+null+")");
180                                                     }
181                                             }else{
182                                                     String[] strMarkers=rsmarkers.getString(1).split(":");
183                                                     if(strMarkers.length==3){
184                                                             marker=strMarkers[0];
185                                                             label=strMarkers[1];
186                                                     }else{
187                                                             splitMarkers=strMarkers[0].split("-");
188                                                             marker=splitMarkers[0];
189                                                             label=splitMarkers[1];
190                                                     }
191
192                                                     if((label.equalsIgnoreCase("6FAM"))||(label.equalsIgnoreCase("6-FA
M"))||(label.equalsIgnoreCase("FAM")))
193                                                             strCComment="color comment b";
194                                                     else if((label.equalsIgnoreCase("VIC"))||(label.equalsIgnoreCase("
HEX")))
195                                                             strCComment="color comment g";
196                                                     else if(label.equalsIgnoreCase("NED"))
197                                                             strCComment="color comment y";
198                                                     else
199                                                             strCComment="color comment r";
200
201                                                     stmt1.executeUpdate("insert into ce_electrophoresis values('" + pl
ate_id + "','"+marker+"','" + label + "','" + strCComment + "','"+project+"', '"+runmod+"','"+analysis+"","+null+","+null+
","+null+","+3700+","+null+")");
202                                             }
203                                     }
204                                     int columns, rows;
205                                     if(ptype.equalsIgnoreCase("384")){
206                                             columns=25;
207                                             rows=17;
208                                     }else{
209                                             columns=13;
210                                             rows=9;
211                                     }
212
213                                     //System.out.println("SELECT distinct genotype_master.genotype_id, run_tracking_we
ll.row_id, run_tracking_well.col_id, run_tracking_well.markers_assigned from genotype_master inner join run_tracking_well
on genotype_master.lims_id=run_tracking_well.lims_id WHERE run_tracking_well.run_plate_id = '"+plate_id+"' order by run_Tr
acking_Well.Col_Id,run_Tracking_Well.Row_Id");
214                                     rs=stmt.executeQuery("SELECT distinct genotype_master.genotype_id, run_tracking_we
ll.row_id, run_tracking_well.col_id, run_tracking_well.markers_assigned from genotype_master inner join run_tracking_well
on genotype_master.lims_id=run_tracking_well.lims_id WHERE run_tracking_well.run_plate_id = '"+plate_id+"' order by run_Tr
acking_Well.Col_Id,run_Tracking_Well.Row_Id");
```

```
                                    while(rs.next()){
                                            samples=samples+rs.getString(1)+"'~'"+rs.getString(2)+"'~'"+rs.getString(3
)+"'~'"+rs.getString(4)+",~";
                                    }
                                            System.out.println("samples="+samples);
                                    FileOutputStream fout=null;
                                    PrintStream bout;
                                    fout=new FileOutputStream(fname2+"/"+fname);
                                    bout=new PrintStream(fout);
                                    bout.println(1);
                                    bout.println(plate_id+"\tGS"+"\t"+ptype+"-Well"+"\t"+user);
                                    bout.println("Well"+"\tSample Name"+"\tColor Number"+"\tStandard Dye"+"\tDye Set"+
"\tColor Info"+"\tColor Comment"+"\tProject Name"+"\tRun Module"+"\tAnalysis Module");

                                    int i=0;
                                    int intCnum=1;
                                    String colorInfo="";
                                    String colorComment="";
                                    String[] arrList1=samples.split(",~");
                                    int len= arrList1.length;
                                    String tempmarker="";
                                    for (int j=1;j<columns;j++){
                                            for (int k=1;k<rows;k++){
                                                    System.out.println("i="+i+"    "+arrList1[i]);
                                                    if(i<len){

                                                            String[] gSamples=arrList1[i].split("'~'");
                                                            if ((new Character((char)ch).toString().equalsIgnoreCase(g
Samples[1])) && (Integer.parseInt(gSamples[2])==j)){
                                                                    if(gSamples[3].contains(",")){
                                                                            String[] mdetails0=gSamples[3].split(",");
                                                                            for(int m=0;m<mdetails0.length;m++){
                                                                                    mdetails=mdetails0[m].split(":");
                                                                                    if(mdetails.length==3){
                                                                                            temp=mdetails[1];
                                                                                            tempmarker=mdetails[0];
                                                                                    }else{
                                                                                            mdet=mdetails[0].split("-"
);
                                                                                            temp=mdet[1];
                                                                                            tempmarker=mdet[0];
                                                                                    }
                                                                                    if((temp.equalsIgnoreCase("6Fam"))
||(temp.equalsIgnoreCase("Fam"))||(temp.equalsIgnoreCase("6-Fam"))){
                                                                                            temp="6Fam";
                                                                                    }

                                                                                    /** to concatinate markers of same
```

```
 dye **/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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   266                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
emp;
   267                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
comment b";
   268                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
IC"))||(temp.equalsIgnoreCase("HEX"))){
   269                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
emp;
   270                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
comment g";
   271                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
D")){
   272                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
emp;
   273                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
comment y";
   274                                                                                                                                                                                                                                                                                                                                                                                                                                                
T")){
   275                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
emp;
   276                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
comment r";
   277                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   278                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   279                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   280                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   281                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   282                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   283                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
;
   284                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   285                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   286                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   287                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
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288                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
    mdetails=mdetails1[0].split("-");
    temp=mdetails[1];
    //tempmarker=mdetails[0];
}

if((temp.equalsIgnoreCase("6FAM"))||(temp.equalsIgnoreCase("6-FAM"))||(temp.equalsIgnoreCase("FAM"))){
    arrSub[0]=mdetails[0]+"_"+temp;
    strColorComment[0]="color comment b";
}else if((temp.equalsIgnoreCase("VIC"))||(temp.equalsIgnoreCase("HEX"))){
    arrSub[1]=mdetails[0]+"_"+temp;
    strColorComment[1]="color comment g";
}else if(temp.equalsIgnoreCase("NED")){
    arrSub[2]=mdetails[0]+"_"+temp;
    strColorComment[2]="color comment y";
}else if(temp.equalsIgnoreCase("PET")){
    arrSub[3]=mdetails[0]+"_"+temp;
    strColorComment[3]="color comment r";
}

}

for(int ij=0;ij<5;ij++){

    if(ij==4){
        colorInfo="5";
        colorComment=" ";
    }else if(arrSub[ij]==null){
        colorInfo=intCnum+"";
        colorComment=" ";
    }else if((gSamples[0].equals("blank"))||(gSamples[0].equals(" "))){
        colorInfo=intCnum+"";
        colorComment=strColorComment[ij];

    }else{
        colorInfo=gSamples[0]+"_" +arrSub[ij];
        colorComment=strColorComment[ij];
    }
    bout.println(gSamples[1]+gSamples[2]+"\t"+
```

```
gSamples[0]+"\t"+intCnum+"\t"+dye+"\t"+dyeset+"\t"+colorInfo+"\t"+colorComment+"\t"+project+"\t"+runmod+"\t"+analysis);
   322                                                                    //System.out.println(gSamples[1]+gSamples[
2]+"\t"+gSamples[0]+"\t"+intCnum+"\t"+dye+"\t"+dyeset+"\t"+colorInfo+"\t"+colorComment+"\t"+project+"\t"+runmod+"\t"+analy
sis);
   323                                                                    intCnum=intCnum+1;

   324                                                            }

   325                                                            intCnum=1;
   326                                                            arrSub[0]=null;
   327                                                            arrSub[1]=null;
   328                                                            arrSub[2]=null;
   329                                                            arrSub[3]=null;
   330
   331                                                            strColorComment[0]=null;
   332                                                            strColorComment[1]=null;
   333                                                            strColorComment[2]=null;
   334                                                            strColorComment[3]=null;
   335                                                            ch=ch+1;
   336                                                            i=i+1;

   337                                                    }else{
   338                                                            for(int ij=0;ij<5;ij++){

   339                                                                    colorInfo=intCnum+"";
   340                                                                    colorComment=" ";

   341                                                                    bout.println(new Character((char)ch).toStr
ing()+j+"\t"+"blank"+"\t"+intCnum+"\t"+dye+"\t"+dyeset+"\t"+colorInfo+"\t"+colorComment+"\t"+project+"\t"+runmod+"\t"+anal
ysis);
   342                                                                    //System.out.println(new Character((char)c
h).toString()+j+"\t"+"blank"+"\t"+intCnum+"\t"+dye+"\t"+dyeset+"\t"+colorInfo+"\t"+colorComment+"\t"+project+"\t"+runmod+"
\t"+analysis);
   343                                                                    intCnum=intCnum+1;

   344                                                            }
   345                                                            i--;
   346                                                            intCnum=1;
   347                                                            arrSub[0]=null;
   348                                                            arrSub[1]=null;
   349                                                            arrSub[2]=null;
   350                                                            arrSub[3]=null;
   351
   352                                                            strColorComment[0]=null;
   353                                                            strColorComment[1]=null;
   354                                                            strColorComment[2]=null;
   355                                                            strColorComment[3]=null;
   356                                                            ch=ch+1;
```

```
                                                                        if(i==0)
                                                                                i++;

                                                                }
                                                        }else{
                                                                for(int ij=0;ij<5;ij++){

                                                                        colorInfo=intCnum+"";
                                                                        colorComment=" ";
                                                                        bout.println(new Character((char)ch).toString()+j+"\t"+"blank"+"\t"+intCnum+"\t"+dye+"\t"+dyeset+"\t"+colorInfo+"\t"+colorComment+"\t"+project+"\t"+runmod+"\t"+analysis);
                                                                        intCnum=intCnum+1;

                                                                }
                                                                intCnum=1;
                                                                arrSub[0]=null;
                                                                arrSub[1]=null;
                                                                arrSub[2]=null;
                                                                arrSub[3]=null;

                                                                strColorComment[0]=null;
                                                                strColorComment[1]=null;
                                                                strColorComment[2]=null;
                                                                strColorComment[3]=null;
                                                                ch=ch+1;
                                                        }
                                                        }
                                                        ch=65;
                                                }
                                                session.setAttribute("pltfname",fname);
                                                session.setAttribute("pltid", plate_id);
                                                msg="pltfile";
                                        }else if(req.getQueryString().equals("save")){
                                                plate_id=(String)session.getAttribute("pltid");
                                                stmt.executeUpdate("insert into dna_electrophoresis values(’" + plate_id + "’,’Capillary’,’" + userid + "’,’" + elecdate + "’,"+null+")");
                                                msg="save";
                                        }else{
                                                //System.out.println("Before DElete");
                                                plate_id=(String)session.getAttribute("pltid");
                                                String sfname=(String)req.getSession().getAttribute("pltfname");
                                                folderName=study+"_"+crop+"_"+user;
                                                UploadExcel Gxf = new UploadExcel();
                                                String fileName="";

                                                fname2=session.getServletContext().getRealPath("//")+"/"+rootfoldname+"/"+folderName;
                                                fileName=fname2+"/"+sfname;
```

```
400                                         stmt.executeUpdate("delete from ce_electrophoresis where pcr_plate_id='"+p
late_id+"'");
401                                         stmt1.executeUpdate("delete from dna_electrophoresis where pcr_plate_id='"
+plate_id+"'");
402                                         Gxf.deleteFile(fileName);
403                                         msg="delete";
404                                 }
405                         } catch (Exception e) {
406                                 e.printStackTrace();
407                         }
408
409                         finally{
410                                 try{
411                                         if(con!=null) con.close();
412                                 }catch(Exception e){System.out.println(e);}
413
414                         }
415
416                                 //System.out.println("msg="+msg);
417                         return am.findForward(msg);
418                 }
419         }
420                                                                 ./WEB-INF/src/org/icrisat/lims/sampletracking/quan
tification/UploadRoboticsForm.java


  1  package org.icrisat.lims.sampletracking.quantification;
  2  import javax.servlet.http.HttpServletRequest;
  3
  4  import org.apache.struts.action.ActionError;
  5  import org.apache.struts.action.ActionErrors;
  6  import org.apache.struts.action.ActionForm;
  7  import org.apache.struts.action.ActionMapping;
  8  import org.apache.struts.upload.FormFile;
  9
 10  /*
 11   * Created on Jan 24, 2006
 12   *
 13   * TODO To change the template for this generated file go to
 14   * Window - Preferences - Java - Code Style - Code Templates
 15   */
 16
 17  /**
 18   * @author psrikalyani
 19   *
 20   * TODO To change the template for this generated type comment go to
 21   * Window - Preferences - Java - Code Style - Code Templates
 22   */
```

```
public class UploadRoboticsForm  extends ActionForm{

        public ActionErrors validate(ActionMapping am, HttpServletRequest req) {
                // TODO Auto-generated method stub
                ActionErrors ae=new ActionErrors();
                FormFile file = getExcelfile();
                String sfile=String.valueOf(file);
                String ext=sfile.substring(sfile.lastIndexOf(".")+1);

                if(!ext.equalsIgnoreCase("csv")){
                        ae.add("myerrors",new ActionError("prompt.select.csv"));


                }
                return ae;
        }

        private String volume="";
        private FormFile excelfile;


        /**
         * @return Returns the excelfile.
         */
        public FormFile getExcelfile() {
                return excelfile;
        }
        /**
         * @param excelfile The excelfile to set.
         */
        public void setExcelfile(FormFile excelfile) {
                this.excelfile = excelfile;
        }
        /**
         * @return Returns the volume.
         */
        public String getVolume() {
                return volume;
        }
        /**
         * @param volume The volume to set.
         */
        public void setVolume(String volume) {
                this.volume = volume;
        }


}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/quantification/QunatificationPlateAction.java

```
 1  package org.icrisat.lims.sampletracking.quantification;
 2
 3
 4  import java.io.File;
 5  import java.io.InputStream;
 6  import java.sql.Connection;
 7  import java.sql.ResultSet;
 8  import java.sql.Statement;
 9  import java.util.ArrayList;
10
11  import javax.servlet.ServletContext;
12  import javax.servlet.http.HttpServletRequest;
13  import javax.servlet.http.HttpServletResponse;
14  import javax.servlet.http.HttpSession;
15  import javax.sql.DataSource;
16
17  import jxl.Cell;
18  import jxl.Sheet;
19  import jxl.Workbook;
20
21  import org.apache.struts.Globals;
22  import org.apache.struts.action.Action;
23  import org.apache.struts.action.ActionError;
24  import org.apache.struts.action.ActionErrors;
25  import org.apache.struts.action.ActionForm;
26  import org.apache.struts.action.ActionForward;
27  import org.apache.struts.action.ActionMapping;
28  import org.apache.struts.action.DynaActionForm;
29  import org.apache.struts.upload.FormFile;
30  import org.icrisat.lims.common.CreateTemplate;
31  import org.icrisat.lims.common.UploadExcel;
32  import org.icrisat.lims.common.RoundFloatValuesAction;
33
34
35  /**
36   * @author psrikalyani
37   *
38   * TODO To change the template for this generated type comment go to
39   * Window - Preferences - Java - Code Style - Code Templates
40   */
41  public class QunatificationPlateAction extends Action{
42                  // TODO Auto-generated constructor stub
43          Connection con;
44          ResultSet rs, rs1,rs2;
45          Statement stmt, st, stmt1;
```

```
        Statement st1 =null;
        /*
         * retrieves ExperimentName, StudyName, ProjectName, Count of genotypes,
         * platetype from DB for displaying in Quantification pages of SampleTracking
         * */
        public ArrayList ExpList(HttpServletRequest req, Connection con){
                ArrayList explist=new ArrayList();
                HttpSession session = req.getSession(true);

                String userid=(String)req.getSession().getAttribute("upsc");
                try{

                st = con.createStatement();
                        String plate_id=req.getParameter("pid");
                        String exptname="";             String gid = "";        String platetype="";
                        rs1=st.executeQuery("SELECT DNA_Extraction_Exptdetails.Experiment_Name, DNA_Extraction_Tra
cking.Plate_Type, COUNT(DNA_Extraction_Well.LIMS_Id) AS Extracted FROM DNA_Extraction_Tracking INNER JOIN DNA_Extraction_E
xptdetails ON (DNA_Extraction_Tracking.DNA_Plate_Id = DNA_Extraction_Exptdetails.DNA_Plate_Id) INNER JOIN DNA_Extraction_W
ell ON (DNA_Extraction_Exptdetails.DNA_Plate_Id = DNA_Extraction_Well.DNA_Plate_Id) INNER JOIN Experiment_Master ON (DNA_E
xtraction_Exptdetails.Experiment_Name = Experiment_Master.Experiment_Name) WHERE (DNA_Extraction_Tracking.DNA_Plate_Id = '
"+plate_id+"') AND (DNA_Extraction_Tracking.upsc_Id = '"+userid+"') GROUP BY DNA_Extraction_Exptdetails.Experiment_Name, D
NA_Extraction_Tracking.Plate_Type");
                        while(rs1.next()){
                    exptname= rs1.getString(1);
                    platetype= rs1.getString(2);
                    gid=rs1.getString(3);

                    }
                session.setAttribute("exname", exptname);
                session.setAttribute("gid", gid);
                session.setAttribute("pltype",platetype);
                }catch(Exception e){
                        e.printStackTrace();
                      }
                return explist;
        }

        /*
         * retrieves genotype details along with rowid & ColumnId
         * for a particular plate to display in Quantification Pages of SampleTracking module
         * */
        public ArrayList GenotypeList(HttpServletRequest req, Connection con){
                        ArrayList genotypelist=new ArrayList();
                         HttpSession session = req.getSession(true);

                         String userid=(String)req.getSession().getAttribute("upsc");
                try{
                        stmt1 = con.createStatement();
```

```
    88                          String plate_id=req.getParameter("pid");        String values="";
    89                          rs2 = stmt1.executeQuery("SELECT Genotype_Master.Genotype_Id, DNA_Extraction_Well.Row_Id,
DNA_Extraction_Well.Col_Id FROM Genotype_Master INNER JOIN DNA_Extraction_Well ON Genotype_Master.LIMS_Id = DNA_Extraction
_Well.LIMS_Id WHERE (DNA_Extraction_Well.DNA_Plate_Id = '"+plate_id+"') and Genotype_Master.upsc_id='"+userid+"' ORDER BY
DNA_Extraction_Well.Row_Id, DNA_Extraction_Well.Col_Id");
    90                          while(rs2.next()){
    91                                  values = values + rs2.getString(1) + "~" + rs2.getString(2) + "~" + rs2.getInt(3)
 + ",";
    92                   }
    93
    94                  genotypelist.add(values);
    95                  //session.setAttribute("genoRowCol", values);
    96
    97                          }catch(Exception e){
    98                        e.printStackTrace();
    99                         }
   100                  return genotypelist;
   101          }
   102
   103           public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
 res)throws Exception
   104                  {
   105                   ActionErrors ae=new ActionErrors();
   106                          QunatificationPlateAction dbean=new QunatificationPlateAction();
   107                      HttpSession session = req.getSession(true);
   108                      //user identification
   109
   110                          if((String)session.getAttribute("user")==null){
   111
   112                                  String msg="logout";
   113                                 return am.findForward(msg);
   114                          }
   115                          RoundFloatValuesAction rf=new RoundFloatValuesAction();
   116
   117                          String user=(String)req.getSession().getAttribute("upsc");
   118
   119                          String pid = req.getParameter("pid");
   120                      req.getSession().setAttribute("pid",pid);
   121                      String pagetoopen="";
   122                      String controls="";
   123                          String platetype="";
   124                          String prot="";
   125                          String fname="";
   126                          String sheetname="";
   127                          String foldername="";
   128                          String format="";
   129                          String nanodrop="";
   130                          String set="";
```

```
131                             try{
132                                     ServletContext context = servlet.getServletContext();
133                                     DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
134                                     con=dataSource.getConnection();
135                                     st1 =con.createStatement();
136
137                                     String name="";
138                                     /*if(req.getQueryString().equals("edit")){
139
140
141                                     }        */
142                                     if(req.getQueryString().equals("one")){
143                                             ArrayList eList = dbean.ExpList(req,con);
144                                             platetype=(String)session.getAttribute("pltype");
145                                             session.setAttribute("exptlist", eList);
146                                             String protocols[] = req.getParameterValues("protocols");
147
148                                             CreateTemplate file=new CreateTemplate();
149                                     session.setAttribute("protocols",protocols);
150                                     fname=session.getServletContext().getRealPath("//");
151                                     foldername=fname+"//"+"UploadFiles/";
152                                             if(!new File(foldername).exists())
153                                                     new File(foldername).mkdir();
154
155                                             if (protocols[0].equalsIgnoreCase("Spectrophotometry")){
156                                                     if(req.getParameter("nanodrop").equals("no")){
157                                                             sheetname="Spec_ODs";
158                                                             name="UploadFiles/Spec_ODs.xls";
159                                                             String finalFName=fname+"/"+name;
160                                                             session.setAttribute("plateName", name);

161                                                             format="Enter OD readings at 260 nm";
162                                                             file.CreatePlateTemplate(platetype, sheetname, finalFName,
 format);
163                                                     }/*else{
164
165                                                     }*/
166                                                     nanodrop=req.getParameter("nanodrop");
167                                             pagetoopen = "spec";
168                                             prot = "Spectrophotometry";
169                                     }
170                                             else if(protocols[0].equalsIgnoreCase("agarose gel electrophoresis")){
171                                                     sheetname="agarose_conc";
172                                                     name="UploadFiles/Agarose_Conc.xls";
173                                                     String finalFName=fname+"/"+name;
174                                                     session.setAttribute("plateName", name);
175                                                     format="Enter Concentrations as ng per µl(micro litre)";
176                                                     file.CreatePlateTemplate(platetype, sheetname, finalFName, format)
```

```
;
                                        pagetoopen = "agar";
                                        prot = "agarose gel electrophoresis";
                                        nanodrop="no";
                                        session.setAttribute("nanodrop", nanodrop);
                                }else {
                                                String genos="";
                                                String samplesCount="";
                                                st = con.createStatement();
                                                rs1=st.executeQuery("SELECT count(*) FROM Genotype_Master INNER JO
IN DNA_Extraction_Well ON Genotype_Master.LIMS_Id = DNA_Extraction_Well.LIMS_Id WHERE (DNA_Extraction_Well.DNA_Plate_Id =
'Plate03') and Genotype_Master.upsc_id='GCPDiversitySorghumKalyani'");
                                                while(rs1.next()){
                                                        samplesCount=rs1.getString(1);
                                                }
                                                session.setAttribute("sampCount", samplesCount);
                                                rs2=st1.executeQuery("SELECT Genotype_Master.Genotype_Id, DNA_Extr
action_Well.Row_Id, DNA_Extraction_Well.Col_Id FROM Genotype_Master INNER JOIN DNA_Extraction_Well ON Genotype_Master.LIMS
_Id = DNA_Extraction_Well.LIMS_Id WHERE (DNA_Extraction_Well.DNA_Plate_Id = '"+pid+"') and Genotype_Master.upsc_id='"+user
+"' ORDER BY DNA_Extraction_Well.Row_Id, DNA_Extraction_Well.Col_Id");
                                        while(rs2.next()){
                                                genos = genos + rs2.getString(1) + "~!~" + rs2.getString(2) + "~!~
" + rs2.getInt(3) + ",";
                                        }
                                                stmt = con.createStatement();
                                                rs=stmt.executeQuery("SELECT col_id,row_id from dna_extraction_pla
te_controls WHERE (dna_plate_id = '"+pid+"')");
                                                while(rs.next()){
                                                        controls=controls + rs.getString("col_id") +"~!"+ rs.getSt
ring("row_id") +"~!~";
                                                }
                                                session.setAttribute("dnaquantifcontrols",controls);
                                                session.setAttribute("genoRowCol", genos);
                                        pagetoopen = "fluo";
                                        prot = "Fluorescence";
                                }
                                        session.setAttribute("nanodrop", nanodrop);
                                        session.setAttribute("protocolsel", prot);
                                        session.setAttribute("platetype", platetype);
                                }
                                //end req.getQueryString()=one
                                InputStream stream=null;DynaActionForm form = (DynaActionForm)af;
                                UploadExcel Gxf = null;
                                String check="";String content="";
                                String contents="";
                                String purity_ratio="";
                                String genotypes="";
                                String diluFact="";
```

```
                                String protocol="";
                                String geno="";
                                if(req.getQueryString().equals("two")){
                                        if(req.getParameter("op").equals("edit")){
                                                set=req.getParameter("set");
                                        session.setAttribute("set", set);
                                                protocol=(String)session.getAttribute("protocol");

                                                pid=req.getSession().getAttribute("eqpid").toString();

                                        }else{
                                                pid=req.getParameter("pid");
                                                protocol=(String)session.getAttribute("protocolsel");
                                                session.setAttribute("pid", pid);
                                        }
                                        rs2=st1.executeQuery("SELECT Genotype_Master.Genotype_Id, DNA_Extraction_Well.Row_Id, DNA_Extraction_Well.Col_Id FROM Genotype_Master INNER JOIN DNA_Extraction_Well ON Genotype_Master.LIMS_Id = DNA_Extraction_Well.LIMS_Id WHERE (DNA_Extraction_Well.DNA_Plate_Id = '"+pid+"') and Genotype_Master.upsc_id='"+user+"' ORDER BY DNA_Extraction_Well.Row_Id, DNA_Extraction_Well.Col_Id");
                                while(rs2.next()){
                                        geno = geno + rs2.getString(1) + "~!~" + rs2.getString(2) + "~!~" + rs2.getInt(3) + ",";
                                }
                                session.setAttribute("genoRowCol", geno);
                                        FormFile file = (FormFile)form.get("concFile");
                                        stream=file.getInputStream();
                                        InputStream stream1=file.getInputStream();
                                        String sfile=file.getFileName();
                                        String ext=sfile.substring(sfile.lastIndexOf(".")+1);
                                        if(!ext.equalsIgnoreCase("xls")){
                                                ae.add("myerrors",new ActionError("prompt.select.notxls"));
                                                saveErrors(req, ae);
                                                return (new ActionForward(am.getInput()));
                                        }
                                        if(protocol.equals("Spectrophotometry")){
                                                        diluFact=req.getParameter("dilufact");

                                        }
                                        String fileName="";
                                        platetype=(String)session.getAttribute("platetype");
                                        ArrayList glist = dbean.GenotypeList(req,con);
                                        session.setAttribute("genlist", glist);
                                        stmt = con.createStatement();
                                        rs=stmt.executeQuery("SELECT col_id,row_id from dna_extraction_plate_controls WHERE (dna_plate_id = '"+pid+"')");
                                        while(rs.next()){
                                                controls=controls + rs.getString("col_id") +"~!"+ rs.getString("row_id") +"~!~";
```

```
255                                                 }
256                                                 session.setAttribute("dnaquantifcontrols",controls);
257                                                 nanodrop=(String)session.getAttribute("nanodrop");
258                                                 if((nanodrop!=null)&&(nanodrop.equals("yes"))){
259                                                         sheetname=req.getParameter("SheetName");
260                                                         Workbook workbook=Workbook.getWorkbook(stream);
261                                                         Sheet sheet=workbook.getSheet(sheetname);
262                                                         if(sheet==null){
263                                                                 ae.add("myerrors",new ActionError("prompt.Sheet.err"));
264                                                                 saveErrors(req, ae);
265                                                                 return (new ActionForward(am.getInput()));
266                                                         }
267                                                         int rows=sheet.getRows();
268                                                         int cols=sheet.getColumns();
269                                                         String genos=session.getAttribute("genoRowCol").toString();
270                                                         String [] splitGenos=genos.split(",");
271                                                         int totalGenos=splitGenos.length;
272                                                         if(rows==0||cols==0){
273                                                                 ae.add("myerrors", new ActionError("prompt.worksheet"));
274                                                                 saveErrors(req, ae);
275                                                                 return (new ActionForward(am.getInput()));
276                                                         }
277                                                         if(rows<totalGenos){
278                                                                 ae.add("myerrors", new ActionError("prompt.worksheet.sheet
Error"));
279                                                                 saveErrors(req, ae);
280                                                                 return (new ActionForward(am.getInput()));

281                                                         }
282                                                         String sampleId="Sample ID";
283                                                         Cell cell=sheet.findCell(sampleId);
284                                                         if(cell==null){
285                                                                 cell=sheet.findCell("sampleId");
286                                                                 if(cell==null){
287                                                                         ae.add("myerrors", new ActionError("prompt.workshe
et.sheetError_sampleId"));
288                                                                         saveErrors(req, ae);
289                                                                         return (new ActionForward(am.getInput()));
290                                                                 }
291                                                         }
292                                                         int sampleIdRow=cell.getRow();
293                                                         int sampleIdCol=cell.getColumn();
294                                                         cell=sheet.findCell("ng/ul");
295                                                         if(cell==null){
296                                                                 ae.add("myerrors", new ActionError("prompt.worksheet.sheet
Error_ng/ul"));
297                                                                 saveErrors(req, ae);
298                                                                 return (new ActionForward(am.getInput()));
```

```
   299                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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   333                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   334                                                                                                
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}
int ngRow=cell.getRow();
int ngCol=cell.getColumn();
cell=sheet.findCell("260/280");
if(cell==null){
        ae.add("myerrors", new ActionError("prompt.worksheet.sheet

        saveErrors(req, ae);
        return (new ActionForward(am.getInput()));
}
int Row260_280=cell.getRow();
int Col260_280=cell.getColumn();
boolean exists=false;
for(int a=0;a<totalGenos;a++){
        String[]Genodetails=splitGenos[a].split("~");
        exists=false;
        for(int b=sampleIdRow+1;b<rows;b++){
                cell=sheet.getCell(sampleIdCol,b);
                content=cell.getContents();
                if(content.equals(Genodetails[0])){
                        if(sheet.getCell(ngCol,b).getContents().eq

                                ae.add("myerrors", new ActionError

                                saveErrors(req, ae);
                                return (new ActionForward(am.getIn

                        }else if(sheet.getCell(Col260_280,b).getCo

                                ae.add("myerrors", new ActionError

                                saveErrors(req, ae);
                                return (new ActionForward(am.getIn

                        }
                        float ratio=Float.parseFloat(sheet.getCell

                        if(Float.isNaN(ratio)){
                                ae.add("myerrors", new ActionError

                                saveErrors(req, ae);
                                return (new ActionForward(am.getIn

                        }
                        float ng_ul=Float.parseFloat(sheet.getCell

                        float dilutionfactor=Float.parseFloat(dilu
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335                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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336                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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eOf(rf.roundThree(conc)));
338                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                purity_ratio=purity_ratio+sheet.getCell(Co
l260_280,b).getContents()+"!~!";
339                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contents=contents+concentration+"'~~'"+Gen
odetails[1]+"'~~'"+Genodetails[2]+"'!~!'";
340                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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341                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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348                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return (new ActionForward(am.getInput()));
349                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
350                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Statement studyst=con.createStatement();
351                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ResultSet studyrs=studyst.executeQuery("select study_name,crop_nam
e from user_psc where upsc_id =(select upsc_id from dna_extraction_tracking where dna_plate_id='"+pid+"')");
352                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                String studyname="";
353                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                String crop="";
354                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                while (studyrs.next()){
355                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        studyname=studyrs.getString(1);
356                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        crop=studyrs.getString(2);
357                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }
358                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                foldername=session.getServletContext().getRealPath("//")+"/NanoDro
pSpectrophotometerFiles//";
359                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if(!new File(foldername).exists())
360                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        new File(foldername).mkdir();
361
362                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                String filenm=session.getServletContext().getRealPath("//")+"/Nano
DropSpectrophotometerFiles//" + studyname + "_" + crop + "_" + session.getAttribute("user");
363                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if(!new File(filenm).exists())
364                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        new File(filenm).mkdir();
365
366                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fileName=filenm+"//"+pid+".xls";
367                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gxf=new UploadExcel();
368                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                check=Gxf.createFile(stream1,fileName);
369                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                session.setAttribute("PurityRatio",purity_ratio);
370
371                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }else{
372                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                //creating a file in server for uploading form client.

373                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                foldername=session.getServletContext().getRealPath("//")+"/UploadF
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iles//";
if(!new File(foldername).exists())
        new File(foldername).mkdir();
fileName=session.getServletContext().getRealPath("//")+"/UploadFil
es//"+file.getFileName();
Gxf=new UploadExcel();
check=Gxf.createFile(stream,fileName);
File tosave=new File(fileName);

//to read the uploaded file
Workbook workbook=Workbook.getWorkbook(tosave);
Sheet sheet=workbook.getSheet(0);
int row=sheet.getRows();
int columns=sheet.getColumns();
int cha=65;
int s=1;

String rowId="";
int rows=0;
int cols=0;
rows=10;
cols=13;

if(row==0&&columns==0){
        //req.setAttribute("isPlatesAvailable", "upload");
        ae.add("myerrors", new ActionError("prompt.worksheet"));
        saveErrors(req, ae);
        return (new ActionForward(am.getInput()));
}else{
        int noOfRows=sheet.getRows();
        int noOfCols=sheet.getColumns();
        if(noOfCols<cols||noOfRows<rows){
                //req.setAttribute("isPlatesAvailable", "upload");
                ae.add("myerrors", new ActionError("prompt.workshe
et.sheetError"));

                saveErrors(req, ae);
                return (new ActionForward(am.getInput()));
        }
        for(int i=1;i<cols;i++){
                Cell cell=sheet.getCell(i,1);
                content=cell.getContents();
                if(!(content.equals(String.valueOf(i)))){
                        //req.setAttribute("isPlatesAvailable", "u
pload");

                        ae.add("myerrors", new ActionError("prompt
.worksheet.sheetError"));

                        saveErrors(req, ae);
                        return (new ActionForward(am.getInput()));
```

```
                }
        }

        for(int i=2;i<rows;i++){
                Cell cell=sheet.getCell(0,i);
                content=cell.getContents();
                rowId=new Character((char)cha).toString();
                if(!(content.equals(rowId))){
                        //req.setAttribute("isPlatesAvailable", "upload");

                        ae.add("myerrors", new ActionError("prompt.worksheet.sheetError"));

                        saveErrors(req, ae);
                        return (new ActionForward(am.getInput()));

                }
                cha++;
        }

        cha=65;
        for(int i=2;i<rows;i++){

                for(int j=1;j<cols;j++){
                        //message="upload";
                        Cell cell=sheet.getCell(j,i);
                        if(protocol.equals("Spectrophotometry")){
                                //content=String.valueOf(((Float.valueOf(cell.getContents())*50)/Float.valueOf(diluFact)));

                                float ods2=Float.parseFloat(cell.getContents());

                                float ods1=ods2*50;
                                float ods=(ods1/Float.parseFloat(diluFact))*1000;

                                content=String.valueOf(ods);
                                //System.out.println(((Float.valueOf(cell.getContents())*50)/Float.valueOf(diluFact)));

                        }else{
                                content=cell.getContents();
                    }

                    rowId=new Character((char)cha).toString();
                    contents=contents+content+"‘~~‘"+rowId+"‘~~‘"+s+"‘!~!‘";

                    if(!(content.equals(""))){
                            genotypes=genotypes+content+"‘~~‘"+rowId+"‘~~‘"+s+"‘!~!‘";

                    }
```

```
                                                                        s++;
                                                                }
                                                                cha=cha+1;
                                                                s=1;
                                                        }

                                                        String[] genotype=genotypes.split("'!~!'");
                                                        if(genotype.length<=1){
                                                                // req.setAttribute("isPlatesAvailable", "upload");
                                                                ae.add("myerrors", new ActionError("prompt.worksheet.no
Genotypes"));
                                                                saveErrors(req, ae);
                                                                return (new ActionForward(am.getInput()));
                                                        }
                                                }
                                        }
                                        session.setAttribute("genoRowColConc", contents);
                                        session.setAttribute("nanodrop", nanodrop);
                                        session.setAttribute("PltType", platetype);
                                        session.setAttribute("filen",fileName);


                                        if(req.getParameter("op").equals("edit"))
                                                session.setAttribute("edilufact", diluFact);
                                        else
                                                session.setAttribute("dilfact", diluFact);
                                        if(req.getParameter("op").equals("edit")){
                                                pagetoopen="edit";
                                        }else{
                                                pagetoopen="agar1";
                                        }

                                }
                        }catch(Exception e){e.printStackTrace();}
                        finally{
                                try{
                                        if(con!=null) con.close();
                                }catch(Exception e){System.out.println(e);}
                        }
                        return am.findForward(pagetoopen);
                }
  }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/quantification/QuantificationAction.java

```
package org.icrisat.lims.sampletracking.quantification;
//import java.sql.*;
import java.sql.Connection;
```

```
 4  import java.sql.ResultSet;
 5  import java.sql.Statement;
 6  import java.util.*;
 7
 8  import javax.servlet.ServletContext;
 9  import javax.servlet.http.*;
10  import javax.sql.DataSource;
11
12
13
14  import org.apache.struts.Globals;
15  import org.apache.struts.action.*;
16
17  public class QuantificationAction extends Action {
18
19          Connection con;
20          ResultSet rs;
21          Statement stmt;
22
23          /*
24           * retrieves ExtractedPlates from DB(DataBase) to display in DNAQuantification Page Of SampleTracking modu
le
25           * */
26          public ArrayList plateidList(HttpServletRequest req, Connection con)
27             {
28                  ArrayList pidlist=new ArrayList();
29                  HttpSession session = req.getSession(true);
30                  String userid=(String)req.getSession().getAttribute("upsc");
31
32                  try{
33                          stmt = con.createStatement();
34                          rs=stmt.executeQuery("SELECT DISTINCT DNA_Plate_Id FROM DNA_Extraction_Tracking WHERE (DNA
_Plate_Id NOT IN (SELECT DNA_Plate_Id FROM DNA_Quantification_Tracking)) AND (DNA_Plate_Id NOT IN (SELECT DNA_Plate_Id FRO
M LIMS_GwlFiles)) AND (upsc_Id = '"+ userid +"')");
35                  while(rs.next()) {
36                                  pidlist.add(rs.getString(1));
37                     }
38                  }catch(Exception e){
39                                  e.printStackTrace();
40                            }
41                  return pidlist;
42          }
43
44           public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
 res)throws Exception
45                  {
46  //              user identification
47                  HttpSession session=req.getSession(true);
```

```
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }

                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        QuantificationAction dbean=new QuantificationAction();
                        //ArrayList plist = dbean.plateidList(req);
                        ArrayList plist = dbean.plateidList(req, con);
                        //con.close();
                        session.setAttribute("pltid", plist);

                }catch(Exception e){}
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                        return am.findForward("msg");
                }
 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/quantification/EditDetailsAction.java

```
/*
 * Created on Oct 5, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.quantification;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
```

```
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class EditDetailsAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {

                // TODO Auto-generated method stub
                HttpSession session=req.getSession(true);
                String userid=(String)req.getSession().getAttribute("upsc");
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("ednaquantifcontrols");
                        session.removeAttribute("eqdetails");
                        session.removeAttribute("evalues");
                        session.removeAttribute("eqpid");
                }
                String eqplid=req.getParameter("eqpid");
                Connection con=null;
                ResultSet rs=null; ResultSet rs1=null;ResultSet rs2=null;
                Statement stmt=null;Statement st=null;Statement st1=null;


                String values="";String prot="";String dilfact="";
                String result="";String controls="";
                String nanodrop="";
                String str="";
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                stmt = con.createStatement();
                st = con.createStatement();
                stmt = con.createStatement();
                st1 = con.createStatement();
                if(req.getQueryString().equals("one")){
                        rs=st.executeQuery("SELECT distinct DNA_Quantification_Tracking.DNA_Quantification_Set, DN
A_Quantification_Tracking.Protocols_Selected, DNA_Quantification_Tracking.DNA_Quantification_Protocol, DNA_Quantification_
```

```
Tracking.machine_output_file, DNA_Quantification_Tracking.date_of_creation, DNA_Extraction_Tracking.Plate_Type, Genotype_M
aster.Experiment_Name, Experiment_Master.No_Of_Genotypes FROM DNA_Quantification_Tracking INNER JOIN DNA_Extraction_Well O
N DNA_Quantification_Tracking.DNA_Plate_Id = DNA_Extraction_Well.DNA_Plate_Id INNER JOIN DNA_Extraction_Tracking ON DNA_Ex
traction_Well.DNA_Plate_Id = DNA_Extraction_Tracking.DNA_Plate_Id INNER JOIN Genotype_Master ON DNA_Extraction_Well.LIMS_I
d = Genotype_Master.LIMS_Id INNER JOIN Experiment_Master ON Genotype_Master.Experiment_Name = Experiment_Master.Experiment
_Name where dna_quantification_tracking.dna_plate_id='"+eqplid+"'");
    69                          while (rs.next()){
    70                                  prot=rs.getString(3);
    71                                  nanodrop=rs.getString(4);
    72                                  result=rs.getString(1)+"'~'"+rs.getString(2)+"'~'"+rs.getString(3)+"'~'"+rs.getStr
ing(4)+"'~'"+rs.getString(5)+"'~'"+rs.getString(6)+"'~'"+rs.getString(7)+"'~'"+rs.getString(8);
    73                          }
    74                          session.setAttribute("nanodrop", nanodrop);
    75                          session.setAttribute("protocol", prot);
    76                          session.setAttribute("eqdetails",result);
    77                          session.setAttribute("eqpid",eqplid);
    78                          str="one";
    79
    80                          rs1=st1.executeQuery("SELECT col_id,row_id from dna_extraction_plate_controls WHERE (dna_p
late_id = '"+eqplid+"')");
    81                                  while(rs1.next()){
    82                                          controls=controls + rs1.getString("col_id") +"~!"+ rs1.getString("row_id")
 +"!~!";
    83                                  }
    84                                  session.setAttribute("ednaquantifcontrols",controls);
    85                          if(prot.equalsIgnoreCase("Spectrophotometry")){
    86                                  //System.out.println("SELECT Genotype_Master.Genotype_Id, DNA_Quantification_Track
ingdetails.Col_Id, DNA_Quantification_Trackingdetails.Row_Id, DNA_Quantification_Tracking.Dilution_Factor_Value,        DN
A_Quantification_Trackingdetails.dna_concentration FROM DNA_Quantification_Trackingdetails INNER JOIN DNA_Extraction_Well
ON DNA_Quantification_Trackingdetails.Col_Id = DNA_Extraction_Well.Col_Id AND DNA_Quantification_Trackingdetails.Row_Id =
DNA_Extraction_Well.Row_Id AND DNA_Quantification_Trackingdetails.DNA_Plate_Id = DNA_Extraction_Well.DNA_Plate_Id INNER JO
IN Genotype_Master ON DNA_Extraction_Well.LIMS_Id = Genotype_Master.LIMS_Id INNER JOIN DNA_Quantification_Tracking ON DNA_
Quantification_Trackingdetails.DNA_Plate_Id = DNA_Quantification_Tracking.DNA_Plate_Id AND DNA_Quantification_Trackingdeta
ils.DNA_Quantification_Set = DNA_Quantification_Tracking.DNA_Quantification_Set where DNA_Quantification_Trackingdetails.D
NA_Plate_Id ='"+eqplid+"' order by DNA_Quantification_Trackingdetails.Row_Id,DNA_Quantification_Trackingdetails.Col_Id");
    87                                  if((!(nanodrop==null))&&(nanodrop.equals("yes")))
    88                                          rs2=stmt.executeQuery("SELECT Genotype_Master.Genotype_Id, DNA_Quantificat
ion_Trackingdetails.Col_Id, DNA_Quantification_Trackingdetails.Row_Id, DNA_Quantification_Tracking.Dilution_Factor_Value,
DNA_Quantification_Trackingdetails.dna_concentration FROM DNA_Quantification_Trackingdetails INNER JOIN DNA_Extraction_Wel
l ON DNA_Quantification_Trackingdetails.Col_Id = DNA_Extraction_Well.Col_Id AND DNA_Quantification_Trackingdetails.Row_Id
= DNA_Extraction_Well.Row_Id AND DNA_Quantification_Trackingdetails.DNA_Plate_Id = DNA_Extraction_Well.DNA_Plate_Id INNER
JOIN Genotype_Master ON DNA_Extraction_Well.LIMS_Id = Genotype_Master.LIMS_Id INNER JOIN DNA_Quantification_Tracking ON DN
A_Quantification_Trackingdetails.DNA_Plate_Id = DNA_Quantification_Tracking.DNA_Plate_Id AND DNA_Quantification_Trackingde
tails.DNA_Quantification_Set = DNA_Quantification_Tracking.DNA_Quantification_Set where DNA_Quantification_Trackingdetails
.DNA_Plate_Id ='"+eqplid+"' order by DNA_Quantification_Trackingdetails.Row_Id,DNA_Quantification_Trackingdetails.Col_Id")
;
    89                                  else
    90                                          rs2=stmt.executeQuery("SELECT Genotype_Master.Genotype_Id, DNA_Quantificat
```

```
ion_Trackingdetails.Col_Id, DNA_Quantification_Trackingdetails.Row_Id, DNA_Quantification_Tracking.Dilution_Factor_Value,
DNA_Quantification_Trackingdetails.dna_concentration FROM DNA_Quantification_Trackingdetails INNER JOIN DNA_Extraction_Wel
l ON DNA_Quantification_Trackingdetails.Col_Id = DNA_Extraction_Well.Col_Id AND DNA_Quantification_Trackingdetails.Row_Id
= DNA_Extraction_Well.Row_Id AND DNA_Quantification_Trackingdetails.DNA_Plate_Id = DNA_Extraction_Well.DNA_Plate_Id INNER
JOIN Genotype_Master ON DNA_Extraction_Well.LIMS_Id = Genotype_Master.LIMS_Id INNER JOIN DNA_Quantification_Tracking ON DN
A_Quantification_Trackingdetails.DNA_Plate_Id = DNA_Quantification_Tracking.DNA_Plate_Id AND DNA_Quantification_Trackingde
tails.DNA_Quantification_Set = DNA_Quantification_Tracking.DNA_Quantification_Set where DNA_Quantification_Trackingdetails
.DNA_Plate_Id =’"+eqplid+"’ order by DNA_Quantification_Trackingdetails.Row_Id,DNA_Quantification_Trackingdetails.Col_Id")
;
                                    while(rs2.next()) {
                                            dilfact=rs2.getString(4);
                                            //cType=rs2.getString(6);
                                            values=values+rs2.getString(1)+"~!~"+rs2.getString(3)+"~!~"+rs2.getString(
2)+"~!~"+rs2.getString(5)+",";
                                    }
                            }else if(prot.equalsIgnoreCase("Fluorescence")){
                                    rs2=stmt.executeQuery("Select Genotype_Master.Genotype_Id, DNA_Quantification_Trac
kingdetails.Col_Id, DNA_Quantification_Trackingdetails.Row_Id,DNA_Quantification_Tracking.Dilution_Factor_Value From DNA_Q
uantification_Trackingdetails Inner Join DNA_Extraction_Well On DNA_Quantification_Trackingdetails.Col_Id = DNA_Extraction
_Well.Col_Id And DNA_Quantification_Trackingdetails.Row_Id = DNA_Extraction_Well.Row_Id And DNA_Quantification_Trackingdet
ails.DNA_Plate_Id = DNA_Extraction_Well.DNA_Plate_Id Inner Join Genotype_Master On DNA_Extraction_Well.LIMS_Id = Genotype_
Master.LIMS_Id INNER JOIN DNA_Quantification_Tracking ON DNA_Quantification_Trackingdetails.DNA_Plate_Id = DNA_Quantificat
ion_Tracking.DNA_Plate_Id Where DNA_Quantification_Trackingdetails.DNA_Plate_Id = ’"+eqplid+"’ order by  DNA_Extraction_We
ll.Row_Id,  DNA_Extraction_Well.Col_Id ");
                                    while(rs2.next()) {
                                            values=values+rs2.getString(1)+"~!~"+rs2.getString(3)+"~!~"+rs2.getString(
2)+",";
                                            dilfact=rs2.getString(4);
                                    }
                            }
                            else{
                                    rs2=stmt.executeQuery("SELECT Genotype_Master.Genotype_Id, DNA_Quantification_Trac
kingdetails.Col_Id, DNA_Quantification_Trackingdetails.Row_Id, DNA_Quantification_Trackingdetails.dna_concentration FROM D
NA_Quantification_Trackingdetails INNER JOIN DNA_Extraction_Well ON DNA_Quantification_Trackingdetails.Col_Id = DNA_Extrac
tion_Well.Col_Id AND DNA_Quantification_Trackingdetails.Row_Id = DNA_Extraction_Well.Row_Id AND DNA_Quantification_Trackin
gdetails.DNA_Plate_Id = DNA_Extraction_Well.DNA_Plate_Id INNER JOIN Genotype_Master ON DNA_Extraction_Well.LIMS_Id = Genot
ype_Master.LIMS_Id INNER JOIN DNA_Quantification_Tracking ON DNA_Quantification_Trackingdetails.DNA_Plate_Id = DNA_Quantif
ication_Tracking.DNA_Plate_Id AND DNA_Quantification_Trackingdetails.DNA_Quantification_Set = DNA_Quantification_Tracking.
DNA_Quantification_Set where DNA_Quantification_Trackingdetails.DNA_Plate_Id =’"+eqplid+"’ order by DNA_Quantification_Tra
ckingdetails.Row_Id, DNA_Quantification_Trackingdetails.Col_Id ");
                                    while(rs2.next()) {
                                            values=values+rs2.getString(1)+"~!~"+rs2.getString(3)+"~!~"+rs2.getString(
2)+"~!~"+rs2.getString(4)+",";
                                    }
                            }
                            session.setAttribute("dilfact",dilfact);
                            session.setAttribute("genoRowCol",values);
                    }
```

```
                }catch (Exception e){
                        e.printStackTrace();
                }
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return am.findForward(str);
        }
 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/quantification/EditQuantificationAction.java

```
/*
 * Created on Oct 5, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.quantification;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;



import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class EditQuantificationAction extends Action {
```

```

        Connection con;
        ResultSet rs;
        Statement stmt;
        /*
         * retrieves Quantifiedplates from database for editing
         */
        public ArrayList editQuantifPlates(HttpServletRequest req, Connection con){
                ArrayList eqplatelist = new ArrayList();
                HttpSession session = req.getSession(true);
                String userid=(String)req.getSession().getAttribute("upsc");
                try{
                        stmt = con.createStatement();
                rs=stmt.executeQuery("select dna_plate_id from dna_quantification_tracking where dna_plate_id not in(select dna_plate_id from dna_dilution) and upsc_id='"+userid+"'");
                //System.out.println("select dna_plate_id from dna_quantification_tracking where upsc_id='"+userid+"'");
                while (rs.next()){
                        //System.out.println(rs.getString("dna_plate_id"));
                        eqplatelist.add(rs.getString("dna_plate_id"));
                }
                }catch(Exception e){ e.printStackTrace();}
            return eqplatelist;
        }
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                HttpSession session = req.getSession(true);
//              user identification

                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                        ArrayList editqpList =  new ArrayList();
                        EditQuantificationAction db = new EditQuantificationAction();
                        editqpList=db.editQuantifPlates(req, con);
                        //con.close();
                        req.getSession().setAttribute("eqplist",editqpList);

                }catch(Exception e){}
                finally{
                      try{
```

```
                                if(con!=null) con.close();
                            }catch(Exception e){System.out.println(e);}
                           }
                   return am.findForward("editQuantif");
           }
   }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/quantification/UploadRoboticsAction.java

```
/*
 * Created on Sep 2, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.quantification;

import java.io.BufferedReader;
import java.io.File;
import java.io.FileReader;
import java.io.InputStream;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.text.DateFormat;
import java.util.StringTokenizer;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import org.apache.struts.upload.FormFile;
import org.icrisat.lims.common.UploadExcel;
import org.icrisat.lims.common.RoundFloatValuesAction;

/**
 * @author psrikalyani
```

```
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */

public class UploadRoboticsAction extends Action{

        Connection con=null;
        ResultSet rs = null;
        ResultSet rs1=null;
        ResultSet rs2=null;
        Statement stmt=null;
        Statement stmt1 = null;
        Statement stmt2= null;
        Statement st = null;
        Statement st1= null;
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
                {
                        HttpSession session = req.getSession(true);
//                      user identification

                        if((String)session.getAttribute("user")==null){
                                 String msg="logout";
                                return am.findForward(msg);
                        }
                        if(session!=null){
                                session.removeAttribute("flag");
                                //session.removeAttribute("protocolsel");
                        }
                        InputStream stream=null;
                        // GenotypeXmlFile is a user defined class which creates file in the server.
                        UploadExcel Gxf = null;
                        String fileName="";String saveFtoServer="";String saveF="";
                        String plate_id = "";
                        String[] pro=null;
                        //String genos="";
                        String protocol="";
                        String protsel="";
                        int cha=65;
                        int len=0;
                        String v ="";
                        String strSamples1="";
                    DynaActionForm form = (DynaActionForm)af;
                    FormFile file = (FormFile) form.get("excelfile");
                stream=file.getInputStream();
                saveFtoServer="UploadFiles";
                saveF=session.getServletContext().getRealPath("//")+"/"+saveFtoServer;
```

```
                    if(!new File(saveF).exists())
                            new File(saveF).mkdir();
                       fileName=saveF+"/"+file.getFileName();
                       Gxf=new UploadExcel();
                       Gxf.createFile(stream,fileName);
                       String op=req.getParameter("op");
                       float  volume ;
                       if(op.equalsIgnoreCase("edit")){
                               plate_id=(String)req.getSession().getAttribute("eqpid");
                               v = req.getParameter("dilufact");
                               volume = Float.valueOf(v.trim()).floatValue();
                               session.setAttribute("edilufact", Float.valueOf(volume));
                       }else{
                               v = req.getParameter("dilufact");
                               plate_id =(String)req.getSession().getAttribute("pid");
                               pro=(String [])req.getSession().getAttribute("protocols");
                               protocol=(String)session.getAttribute("protocolsel");
                               len = pro.length;
                               if (pro.length==2)
                                       protsel = pro[0]+","+pro[1];
                               else
                                       protsel =  protocol;
                               volume = Float.valueOf(v.trim()).floatValue();
                               session.setAttribute("dilfact", v);
                       }
                       String user=(String)req.getSession().getAttribute("upsc");
                       String msg="";
                       String str1="";
                       int intTokenCount = 0;
                       String bground = "";
                       String sample1 = "";
                       String set = "";
                       String strSamples="";
                       //System.out.println("request.getQueryString()="+req.getQueryString());
                       try{
                               ActionErrors ae= new ActionErrors();
                               java.util.Date theDate = new java.util.Date();
                               java.text.DateFormat df1 = DateFormat.getDateTimeInstance(DateFormat.SHORT, DateFormat.
SHORT);
                               String quantifDate = df1.format(theDate);

                               //Connecting to database
                               ServletContext context = servlet.getServletContext();
                               DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                               con=dataSource.getConnection();

                               stmt = con.createStatement();
                               stmt1=con.createStatement();
```

```
                            stmt2 = con.createStatement();
                            st1=con.createStatement();
                            st = con.createStatement();

                    if(op.equalsIgnoreCase("Edit")){
                            set=req.getParameter("set");
                            session.setAttribute("set", set);
                    }else{
                            if (pro[0].equalsIgnoreCase("Fluorescence"))
                                            set = "set1";
                                    else if (pro[1].equalsIgnoreCase("Fluorescence"))
                                            set = "set2";
                    }
                            /*if(op.equalsIgnoreCase("Edit")){
                                    //stmt1.executeUpdate("update dna_quantification_tracking set date_of_correction='"+quantifDate+"' where dna_plate_id='"+plate_id+"'");
                                    //st1.execute("delete from dna_quantification_trackingdetails where dna_plate_id='"+plate_id+"'");
                            }else{*/
                                    //stmt1.executeUpdate("insert into DNA_Quantification_Tracking values('"+plate_id+"','"+set+"','"+protsel+"','"+pro[0]+"',"+null+","+null+",'"+user+"','"+quantifDate+"',"+null+")");
                            //}
                            RoundFloatValuesAction round=new RoundFloatValuesAction();
                            BufferedReader buf = new BufferedReader(new FileReader(fileName));
                    while ( (msg = buf.readLine()) != null) {
                                    StringTokenizer stk =new StringTokenizer(msg,",");
                                    int count= stk.countTokens();
                                    //if(count==8){
                                    while(stk.hasMoreTokens()){
                                            intTokenCount++;
                                                    if(intTokenCount<=96){
                                                            bground = bground+stk.nextToken()+"::";

                                                    }
                                                    else if(intTokenCount>96&&intTokenCount<=192){
                                                            sample1 = sample1+stk.nextToken()+"&&";
                                                    }
                                                    else{
                                                            break;
                                                    }
                                    }
                                    /*}else{
                                            ae.add("myerro",new ActionError("prompt.invalid.file"));
                                    saveErrors(req, ae);
                                    return (new ActionForward(am.getInput()));
                                    }*/
                            }
                    String strTest1 = bground+"--"+sample1;
```

```
                String strTest2  = strTest1.substring(0,strTest1.lastIndexOf("::"));
                String strTest3  = strTest1.substring(strTest1.lastIndexOf("--")+2,strTest1.lastIndexOf("&&"));

                String background[] = new String[96];
                String sample[] = new String[96];
                    StringTokenizer stk3 =  new StringTokenizer(strTest2,"::");
                    int j=0;
                while(stk3.hasMoreTokens()){
                        background[j] = stk3.nextToken();
                        if(background[j]==null)
                        background[j]="";
                        j++;
                 }

                 StringTokenizer stk4 =  new StringTokenizer(strTest3,"&&");
                 int i=0;
                 while(stk4.hasMoreTokens()){
                        sample[i] = stk4.nextToken();
                        if(background[i]==null)
                        background[i]="";
                        i++;
                 }
                 int a = 0;
                 //System.out.println("background.length="+background.length+"   sample.length="+sample.length+"
sampCount="+session.getAttribute("sampCount"));
                 for(int k=1;k<13;k++){
                        for(int m=1;m<9;m++){
                                if (a<background.length && a<sample.length){
                                        //System.out.println("background :"+background[a]+"   Samples:"+sample[a])
;
                                        if(background[a].equalsIgnoreCase("overflow")){
                                                ae.add("myerro",new ActionError("prompt.invalid.backgrounds"));
                                                saveErrors(req, ae);
                                                return (new ActionForward(am.getInput()));

                                        }else if(sample[a].equalsIgnoreCase("overflow")){
                                                ae.add("myerro",new ActionError("prompt.invalid.samples"));
                                                saveErrors(req, ae);
                                                return (new ActionForward(am.getInput()));

                                        }else{
                                                String rowv =  new Character((char)cha).toString();
                                                double val=  (-2.78273+0.002019*(Integer.parseInt(sample[a]) - Int
eger.parseInt(background[a])));
                                                val = val * volume;
                                                val = round.roundTwo(val);
                                                //stmt.executeUpdate("insert into DNA_Quantification_Trackingdetai
ls values('"+set+"', '" + plate_id + "' ,"+k+",'"+ rowv +"','"+val+"," + Integer.parseInt(background[a]) + " , " + Integer.
```

```
parseInt(sample[a]) + " )");
                                                        strSamples1=strSamples1+k+"!~!"+rowv +"!~!"+val+"!~!"+Integer.pars
eInt(background[a]) + "!~!" + Integer.parseInt(sample[a]) + ",";

                                                        //strSamples=strSamples+k+"!~!"+rowv +"!~!"+val+"!~!"+Integer.pars
eInt(background[a]) + "!~!" + Integer.parseInt(sample[a]) + ",";
                                                        strSamples=strSamples+val+"'~~'"+rowv+"'~~'"+k+"'!~!'";

                                                        a=a+1;
                                                }
                                        }
                                        cha =cha+1;
                                }
                                cha = 65;
                        }

                        // above strSamples are in column wise order so the below code is converting column wise to row wi
se............

                        String[] splitStr1=strSamples.split("'!~!'");
                        String reArragedSamples="";
                        int count=0;
                        for(int row=1;row<9;row++){
                                int c = 0;
                                for(int col=1;col<13;col++){
                                        reArragedSamples=reArragedSamples+splitStr1[count]+"'!~!'";

                                        count=count+8;
                                        c = -96;
                                }
                                count = count + c +1;
                        }
                        session.setAttribute("genoRowColConc", reArragedSamples);
                        if(op.equalsIgnoreCase("edit"))
                                str1="edit";
                        else
                                str1="success1";

                }catch(Exception e){
                        e.printStackTrace();
                }finally{
                        try{
                                if(con!=null) con.close();
                        }catch(Exception e){System.out.println(e);}
                        }
                Gxf.deleteFile(fileName);
                        //System.out.println("File Created");
                        if(new File(saveF).exists())
```

```
                 new File(saveF).delete();
            return am.findForward(str1);
         }
  }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/quantification/QuantificationInsertAction.java

```
/*
 * Created on Sep 22, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.quantification;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.text.DateFormat;
//import java.text.DecimalFormat;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class QuantificationInsertAction extends Action {


public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res)throws Exception
{
        HttpSession session = req.getSession(true);
        //      user identification
        if((String)session.getAttribute("user")==null){
```

```
                 String msg="logout";
                return am.findForward(msg);
        }
        if(session!=null){
                session.removeAttribute("flag");
                //session.removeAttribute("protocolsel");
        }
        Connection con = null;
        ResultSet rs2 = null;
        Statement stmt = null;
        Statement stmt1 = null;
        Statement stmt2 = null;
        String str1 = "";
        String protsel ="";
        String value;
        String set = "";
        float cvalue;
        String plate_id ="";
        String protocol="";
        String[] pro=null;
        String userid=session.getAttribute("upsc").toString();
        String conVal="";
        int len = 0;
        String op=req.getParameter("op");
        if(op.equals("edit")){
                plate_id=(String)req.getSession().getAttribute("eqpid");
                conVal=req.getParameter("ehconc");
                protocol=session.getAttribute("protocol").toString();
        }else{
                pro=(String [])req.getSession().getAttribute("protocols");
                protocol=(String)session.getAttribute("protocolsel");
                plate_id = (String)req.getSession().getAttribute("pid");
                len = pro.length;
                if (pro.length==2){
                        protsel = pro[0]+","+pro[1];
                }       else{
                         protsel =  protocol;
                }
                conVal=req.getParameter("hconc");
        }
        String dilfact ="";
        String[] arrG=conVal.split(",");
        int conValLen=arrG.length;

        try{
            //retreiving System Date
                java.util.Date theDate = new java.util.Date();
        java.text.DateFormat dateFormatter = DateFormat.getDateTimeInstance(DateFormat.SHORT, DateFormat.SHORT);
```

```
                    String quantifDate = dateFormatter.format(theDate);

                //creating connection
                    ServletContext context = servlet.getServletContext();
                    DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                    con=dataSource.getConnection();

            stmt = con.createStatement();
            stmt1 = con.createStatement();
            stmt2 = con.createStatement();
            if (protocol.equalsIgnoreCase("Spectrophotometry")){
                            if(op.equals("edit")){
                                    set=session.getAttribute("set").toString();
                                    dilfact=(String)req.getParameter("edilufact");
                                    stmt.executeUpdate("update DNA_Quantification_Tracking set dilution_factor_value="
+Float.parseFloat(dilfact)+" , date_of_correction='"+quantifDate+"' where dna_plate_id='"+plate_id+"'");
                                    str1="editSuccess";
                            }else{
                                    dilfact=(String)session.getAttribute("dilfact");
                                    if (pro.length==2){
                                            if (pro[0].equalsIgnoreCase("Spectrophotometry"))
                                                    set = "set1";
                                            else if (pro[1].equalsIgnoreCase("Spectrophotometry"))
                                                    set = "set2";
                                    }else
                                            set="set1";
                                    stmt.executeUpdate("insert into DNA_Quantification_Tracking values('" + plate_id +
 "','"+ set +"','"+protsel+"','" + protocol + "","+ dilfact +","+null+",'"+ userid +"','"+ quantifDate +"","+null+",'"+ses
sion.getAttribute("nanodrop")+"')");
                                    str1="success";
                            }

                    }else if (protocol.equalsIgnoreCase("agarose gel electrophoresis")){
                            if(op.equals("edit")){
                                    set=session.getAttribute("set").toString();
                                    stmt.executeUpdate("update DNA_Quantification_Tracking set date_of_correction='"+q
uantifDate+"' where dna_plate_id='"+plate_id+"'");
                                    str1="editSuccess";
                            }else{
                                    if (pro.length==2){
                                            if (pro[0].equalsIgnoreCase("agarose gel electrophoresis"))
                                                    set = "set1";
                                            else if (pro[1].equalsIgnoreCase("agarose gel electrophoresis"))
                                                    set = "set2";
                                    }else
                                            set="set1";
                                    stmt.executeUpdate("insert into DNA_Quantification_Tracking values('"+ plate_id +"
','"+ set +"','"+protsel+"','" +  protocol + "","+ null +","+ null +",'"+ userid +"','"+ quantifDate +"","+null+","+null+"
```

```
)");
   132                                     str1="success";
   133                             }
   134                     }else{
   135                             if(op.equals("edit")){
   136                                     dilfact=(String)req.getParameter("edilufact");
   137                                     set=session.getAttribute("set").toString();
   138                                     stmt.executeUpdate("update DNA_Quantification_Tracking set dilution_factor_value="
+Float.parseFloat(dilfact)+" , date_of_correction='"+quantifDate+"' where dna_plate_id='"+plate_id+"'");
   139                                     str1="editSuccess";
   140                             }else{
   141                                     dilfact=(String)session.getAttribute("dilfact");
   142                                     if (pro.length==2){
   143                                             if (pro[0].equalsIgnoreCase("Fluorescence"))
   144                                                     set = "set1";
   145                                             else if (pro[1].equalsIgnoreCase("Fluorescence"))
   146                                                     set = "set2";
   147                                     }else
   148                                             set="set1";
   149                                     stmt.executeUpdate("insert into DNA_Quantification_Tracking values('"+ plate_id +"
','"+ set +"','"+protsel+"','" +  protocol + "',"+ dilfact +","+ null +",'"+ userid +"','"+ quantifDate +"',"+null+","+nul
l+")");
   150                                     str1="success";
   151                             }
   152                             //stmt.executeUpdate("insert into DNA_Quantification_Tracking values('"+ plate_id +"','"+
set +"','"+protsel+"','" +  protocol + "',"+ dilfact +","+ null +",'"+ userid +"','"+ quantifDate +"',"+null+","+null+")")
;
   153                     }
   154                     if(op.equals("edit"))
   155                             stmt.executeUpdate("delete from dna_quantification_trackingdetails where dna_plate_id='"+p
late_id+"'");
   156
   157
   158                     //if(protocol.equalsIgnoreCase("Spectrophotometry") && session.getAttribute("nanodrop").equals("ye
s")){
   159                     if((session.getAttribute("nanodrop")!=null)&&(session.getAttribute("nanodrop").equals("yes"))){
   160                             float ratio;
   161                             String[]purityRatio=((String)session.getAttribute("PurityRatio")).split("!~!");
   162                             for (int i=0;i<conValLen;i++){
   163                                     String[] val=arrG[i].split("~");
   164                                     ratio=Float.parseFloat(purityRatio[i]);
   165                                     value=val[0];
   166                                     cvalue = Float.valueOf(value.trim()).floatValue();

   167                                     //stmt1.executeUpdate("insert into DNA_Quantification_Trackingdetails values('"+se
t+"','"+plate_id+"","+val[2]+",'"+val[1]+"","+cvalue+","+ratio+","+null+","+null+")");
   168                                     stmt1.executeUpdate("insert into DNA_Quantification_Trackingdetails (dna_quantific
ation_set,dna_plate_id,col_id,row_id,dna_concentration,purity_ratio) values('"+set+"','"+plate_id+"","+val[2]+",'"+val[1]+
```

```
"’,"+cvalue+","+ratio+")");
   169                          }
   170                  }else{
   171                          for (int i=0;i<conValLen;i++){
   172                                  String[] val=arrG[i].split("~");
   173                                  value=val[0];
   174                                  cvalue = Float.valueOf(value.trim()).floatValue();

   175                                  stmt1.executeUpdate("insert into DNA_Quantification_Trackingdetails (dna_quantific
ation_set,dna_plate_id,col_id,row_id,dna_concentration) values(’"+set+"’,’"+plate_id+"’,"+val[2]+",’"+val[1]+"’,"+cvalue+"
)");
   176                          }
   177                  }
   178                  if(!(op.equals("edit"))){
   179                          if(len==1){
   180                                  str1="success";
   181                          }else{
   182                                  rs2=stmt2.executeQuery("SELECT * FROM DNA_Quantification_Tracking WHERE DNA_Quanti
fication_Protocol= ’"+pro[1]+"’ AND upsc_id = ’" +userid+ "’");
   183                                  if(rs2.next()){
   184                                  req.getSession().setAttribute("flag","true");
   185                                  str1="success";
   186                          }else{
   187                                  session.setAttribute("protocolsel",pro[1]);
   188                                  req.getSession().setAttribute("flag","false");
   189                                  set = "set2";
   190                                  str1="ins";
   191                          }
   192                  }
   193                  }
   194                  //else
   195                          //str1="success";
   196
   197
   198      }catch(Exception e){
   199                  e.printStackTrace();
   200          }
   201          finally{
   202                 try{
   203                          if(con!=null) con.close();
   204                   }catch(Exception e){System.out.println(e);}
   205                  }
   206          return am.findForward(str1);
   207          }
   208  }./WEB-INF/src/org/icrisat/lims/sampletracking/quantification/EditQuantificationUpdateAction.java


     1  /*
```

```
 * Created on Oct 10, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.quantification;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.text.DateFormat;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class EditQuantificationUpdateAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                HttpSession session = req.getSession(true);
    //user identification
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                Connection con = null;
                Statement stmt = null;
                Statement stmt1 = null;
                Statement stmt2 = null;
                String dilfact="";

                /*String plate_id = req.getSession().getAttribute("eqpid").toString();
```

```
                String eqdetails=(String)req.getSession().getAttribute("eqdetails");

                String[] qdetails=eqdetails.split("'~'");
                String set=qdetails[0];
                String protocol=qdetails[2];
                String ctype=(String)session.getAttribute("ctype");
                if((protocol.equalsIgnoreCase("spectrophotometry"))&&(ctype.equals("optd"))){

                        dilfact = req.getParameter("edilufact");
                        System.out.println("EDIT SPEC="+dilfact);
                }
                String conVal=req.getParameter("ehconc");

                String[] arrG=conVal.split(",");
                int conValLen=arrG.length;
                String value;float cvalue;
  */
                //System.out.println("************************* IN EDIT QUantification");
                float difac;
                try{
                        //retreiving System Date
                        java.util.Date theDate = new java.util.Date();
                java.text.DateFormat dateFormatter = DateFormat.getDateTimeInstance(DateFormat.SHORT, DateFormat.SHORT);
                        String edate = dateFormatter.format(theDate);

                        //creating connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                    stmt = con.createStatement();
                    stmt1 = con.createStatement();
                        stmt2 = con.createStatement();
                        /*if(protocol.equalsIgnoreCase("Spectrophotometry")){
                                if(ctype.equals("optd"))
                                        stmt.executeUpdate("update dna_quantification_tracking set dilution_factor_value="+Float.parseFloat(dilfact)+" , date_of_correction='"+edate+"' where dna_plate_id='"+plate_id+"'");

                                else
                                        stmt.executeUpdate("update dna_quantification_tracking set date_of_correction='"+edate+"' where dna_plate_id='"+plate_id+"'");
                        }else{
                                stmt.executeUpdate("update dna_quantification_tracking set date_of_correction='"+edate+"' where dna_plate_id='"+plate_id+"'");
                        }
                        stmt2.execute("delete from dna_quantification_trackingdetails where dna_plate_id='"+plate_id+"'");
```

```
                        for (int i=0;i<conValLen;i++){
                                String[] val=arrG[i].split("~");
                                value=val[0];
                                cvalue = Float.valueOf(value.trim()).floatValue();
                                stmt1.executeUpdate("insert into DNA_Quantification_Trackingdetails values('"+set+
"','"+plate_id+"','"+val[2]+",'"+val[1]+"','"+value+","+null+", "+null+")");
                        }*/

                }catch(Exception e){
                        e.printStackTrace();
                }
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return am.findForward("updated");
        }
}
```

./WEB-INF/src/org/icrisat/lims/sampletracking/extraction/ExtractionAction.java

```
/*
 * Created on Sep 6, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.extraction;

import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;


import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
```

```
import org.apache.struts.action.ActionMapping;


/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class ExtractionAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                HttpSession session = req.getSession(true);
//              user identification
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                Connection con=null;
                try{

                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                        if(req.getParameter("ChkPlateids")==null || req.getParameter("ChkPlateids")==""){

                        Statement st = con.createStatement();
                        ResultSet rs = st.executeQuery("SELECT DISTINCT (Experiment_Master.Experiment_Name),Experi
ment_Master.No_Of_Genotypes FROM  Genotype_Master INNER JOIN  Experiment_Master ON Genotype_Master.Experiment_Name = Exper
iment_Master.Experiment_Name WHERE     (Genotype_Master.Experiment_Name NOT IN (SELECT DISTINCT (experiment_name)  FROM
       DNA_Extraction_Exptdetails)) and (Experiment_Master.upsc_id = '"+ session.getAttribute("upsc")+"')");

                        //retrieve dna protocols
                        Statement stprotocols=con.createStatement();
                        ResultSet rsprotocols=stprotocols.executeQuery("select Protocol_Name from DNA_Protocols wh
ere Protocol_Type='Extraction'");

                        String strProtocols="";
                        while(rsprotocols.next()){
                                strProtocols=strProtocols + rsprotocols.getString("Protocol_Name") + "''~!";
                        }
                        session.setAttribute("eprotocols", strProtocols);
                        String values="";
                        String strNoofGenotypes="";
                        while(rs.next()){
                                if(!(rs.getString("Experiment_Name").endsWith("~~~PCR"))){
```

```
                                        values = values + rs.getString("Experiment_Name")+"’’~!";
                                        strNoofGenotypes=strNoofGenotypes + rs.getString("No_of_Genotypes") + "’’~!";
                                }
                        }
                        session.setAttribute("exptnamesList",values);
                        session.setAttribute("noofGenotypes",strNoofGenotypes);

                        // check the records
                        if(values=="" || strNoofGenotypes==""){
                                req.setAttribute("NoExpt","NoExperiments");

                        }else if(strProtocols==""){
                                        req.setAttribute("NoExpt","ProtocolsNotAvailable");
                        }else{
                                session.setAttribute("NoExpt","Dispage");
                        }
                }else{
                                //*********Ajax Plain Text Response ***********//

                                PrintWriter writer=res.getWriter();
                                res.setContentType("text/xml");
                                res.setHeader("Cache-Control", "no-cache");

                                        Statement stmt1=con.createStatement();
                                        ResultSet rs1=stmt1.executeQuery("select DNA_Plate_Id from DNA_Extraction_Tracking where lower(DNA_Plate_Id)=’"+req.getParameter("ChkPlateids").toLowerCase()+"’");

                                        if(rs1.next()){

                                                        //writer.println("<Availableplate><[!CDATA [" + arrplateids + "]]></Availableplate>");
                                                        writer.println("1");

                                                return null;
                                        }

                        }
                }catch(Exception e){
                        System.out.println(e);
                        e.printStackTrace();
                }
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return am.findForward("ins");
```

```
        }
 }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/extraction/ExtractionPlateControlsAction.java

```
package org.icrisat.lims.sampletracking.extraction;

import org.apache.struts.Globals;
import org.apache.struts.action.*;

import javax.servlet.ServletContext;
import javax.servlet.http.*;
import javax.sql.DataSource;

import java.sql.Statement;
import java.sql.ResultSet;
import java.sql.Connection;

public class ExtractionPlateControlsAction extends Action{
        /**
         * @author GMeenakshi
         *
         **/
        public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse res)throws Exception{
                HttpSession session=req.getSession(true);
                String msg="";


                //user Authentication
                if((String)session.getAttribute("user")==null){
                        msg="logout";
                        return map.findForward(msg);
                }

                String strsGeno;
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                String plcontrols="";
                strsGeno=session.getAttribute("genotypeList").toString();
                String[] genotypes=strsGeno.split("‘‘~!");

                String platenamelist=req.getParameter("dnaPN");
                String[]plateNames=platenamelist.split("‘‘~!");

                String PlateControlsList=req.getParameter("hidChkCon");
                String[]PCL=PlateControlsList.split("‘‘~!");
```

```
                if(PCL.length>0){
                        try{
                                for(int l=1;l<13;l++){
                        for(int f=0;f<PCL.length;f++){
                                String[]str=PCL[f].split("‘˜!");
                                int j=Integer.parseInt(str[3]);
                                if(j==l){
                                        plcontrols=plcontrols+PCL[f]+"‘‘˜!";
                                }
                        }
                }
                String[]plateControls=plcontrols.split("‘‘˜!");

                String ExtractionOn=req.getParameter("eonto");

                int ll=0;
                int plateNo,ca,jj,rr,gen,k;

                        ServletContext context = servlet.getServletContext();
                DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        int genotypescount=genotypes.length+((plateNames.length)*(plateControls.length))-plateCont
rols.length;
                        int noofplates=plateNames.length;
                        int count;
                        String type=session.getAttribute("type").toString();
                        int row=0;
                        int rowno=0;
                        if(Integer.parseInt(ExtractionOn)==96){
                                row=8;
                                count=(noofplates*96);
                                if(count< genotypescount){
                                        for(int i=count;i<=genotypescount;i=i+96){
                                                noofplates++;
                                                genotypescount=genotypes.length+((noofplates)*(plateControls.lengt
h))-plateControls.length;
                                        }
                                }
                                for(int s=0;s<noofplates;s++){
                                        for(int m=0;m<plateControls.length;m++){
                                                k=ll;
                                                rowno=row*s;
                                                String[]controls=plateControls[m].split("‘˜!");
                                                plateNo=Integer.parseInt(controls[1]);
                                                if(!(plateNo==s)){
                                                        strsGeno="";
                                                        for(ca=65;ca<73;ca++){
```

```
                                                                                if((new Character((char)ca).toString()).equals(con
trols[2])){
                                                                                        jj=Integer.parseInt(controls[3]);
                                                                                        if(type.equals("row")){

                                                                                                rr=(rowno*12)+jj-1;
                                                                                        }else{
                                                                                                rr=k+((jj-1)*8);
                                                                                        }
                                                                                        rs=st.executeQuery("Select Genotype_Id fro
m genotype_master where Lims_id='"+controls[0]+"'");
                                                                                        rs.next();
                                                                                        if(rr==genotypes.length && genotypes.lengt
h<(noofplates*96)){
                                                                                                genotypes[rr-1]=genotypes[rr-1]+"'
'~!"+rs.getString(1)+"~''!"+controls[0];
                                                                                        }else{
                                                                                                genotypes[rr]=rs.getString(1)+"~''
!"+controls[0]+"''~!"+genotypes[rr];
                                                                                        }
                                                                                }
                                                                                k++;
                                                                                rowno++;
                                                                        }
                                                                        for(gen=0;gen<genotypes.length;gen++){
                                                                                strsGeno=strsGeno+genotypes[gen]+"''~!";
                                                                        }
                                                                        genotypes=strsGeno.split("''~!");
                                                                }
                                                        }
                                                        ll=ll+96;
                                                }

                                        }else{
                                                count=(noofplates*16);
                                                if(count< genotypescount){
                                                        for(int i=count;i<=genotypescount;i=i+16){
                                                                noofplates++;
                                                                genotypescount=genotypes.length+((noofplates)*(plateControls.lengt
h))-plateControls.length;
                                                        }
                                                }
                                                for(int s=0;s<noofplates;s++){
                                                        for(int m=0;m<plateControls.length;m++){
                                                                k=ll;
                                                                String[]controls=plateControls[m].split("'~!");
                                                                plateNo=Integer.parseInt(controls[1]);
                                                                if(!(plateNo==s)){
```

```
                                                                strsGeno="";

                                                                        if((new Character((char)65).toString()).equals(con
trols[2])){
                                                                                jj=Integer.parseInt(controls[3]);
                                                                                rr=k+jj-1;
                                                                                rs=st.executeQuery("Select Genotype_Id fro
m genotype_master where Lims_id='"+controls[0]+"'");
                                                                                rs.next();
                                                                                genotypes[rr]=rs.getString(1)+"~''!"+contr
ols[0]+"''~!"+genotypes[rr];
                                                                        }

                                                                for(gen=0;gen<genotypes.length;gen++){
                                                                        strsGeno=strsGeno+genotypes[gen]+"''~!";
                                                                }
                                                                genotypes=strsGeno.split("''~!");
                                                        }
                                                }
                                                ll=ll+16;
                                        }

                                }
                                session.setAttribute("genotypes", strsGeno);
                                msg="ins";

                        }catch(Exception e){
                                msg="error";
                                System.out.println("exception at ExtractionPlateControlAction is  "+e);
                        }finally{
                                 try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                        }
                        }

                        return map.findForward(msg);
                }

        }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/extraction/EditExtractionAction.java

```
/*
 * Created on Nov 21, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
```

```
 */
package org.icrisat.lims.sampletracking.extraction;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
import java.sql.Timestamp;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;



import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
/**
 * @author tpraveenreddy
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class EditExtractionAction extends Action{

        Connection con=null;
        public ArrayList dnaPlateidList(String un,HttpServletRequest req, Connection con){

                ArrayList disEptNameList=new ArrayList();
                try{
                        Statement st = con.createStatement();
                        ResultSet rs = st.executeQuery("SELECT DISTINCT DNA_Extraction_Tracking.DNA_Plate_Id FROM
 DNA_Extraction_Tracking  WHERE     (DNA_Extraction_Tracking.upsc_id =  '"+ un +"') AND (DNA_Extraction_Tracking.DNA_Plate
_Id NOT IN    (SELECT     DNA_Quantification_Tracking.DNA_Plate_Id   FROM  DNA_Quantification_Tracking)) AND (DNA_Extracti
on_Tracking.DNA_Plate_Id NOT IN  (SELECT  LIMS_GwlFiles.DNA_Plate_Id   FROM LIMS_GwlFiles))");
                        while(rs.next()){
                                disEptNameList.add(rs.getString("DNA_Plate_id"));
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }

```

```
51                  return disEptNameList;
52          }
53          public String getRetData(String un,String pid,HttpServletRequest req, Connection con){
54                          String retdata="";
55                          String strPltNT="";
56                          HttpSession session = req.getSession(true);
57                          try{
58                                  Statement st = con.createStatement();
59                                  Statement stmt=con.createStatement();
60                                  ResultSet rs = st.executeQuery("SELECT DNA_Extraction_Well.DNA_Plate_Id,DNA_Extrac
tion_Well.Col_Id,DNA_Extraction_Well.Row_Id,Genotype_Master.Genotype_Id,DNA_Extraction_Well.LIMS_Id FROM DNA_Extraction_We
ll INNER JOIN Genotype_Master ON DNA_Extraction_Well.LIMS_Id = Genotype_Master.LIMS_Id WHERE DNA_Extraction_Well.DNA_Plate
_Id='"+ pid +"' order by DNA_Extraction_Well.Row_Id,DNA_Extraction_Well.Col_Id");
61                                  ResultSet rsPltNT=stmt.executeQuery("SELECT DNA_Extraction_Tracking.DNA_Plate_Id,
DNA_Extraction_Tracking.Plate_Type, DNA_Extraction_Plate_Controls.Col_Id, DNA_Extraction_Plate_Controls.Row_Id FROM DNA_Ex
traction_Tracking LEFT OUTER JOIN DNA_Extraction_Plate_Controls ON DNA_Extraction_Tracking.DNA_Plate_Id = DNA_Extraction_P
late_Controls.DNA_Plate_Id WHERE (DNA_Extraction_Tracking.upsc_id = '"+ un +"') AND (DNA_Extraction_Tracking.DNA_Plate_Id
= '"+ pid +"') ORDER BY DNA_Extraction_Plate_Controls.Row_Id, DNA_Extraction_Plate_Controls.Col_Id");
62                                  while(rs.next()){
63                                          retdata=retdata + rs.getString("DNA_Plate_Id") + "~''!" + rs.getString("Co
l_Id") + "~''!" + rs.getString("Row_Id") + "~''!" + rs.getString("Genotype_Id") + "~''!" + rs.getString("LIMS_Id") + "''~!
";
64                                  }
65                                  while(rsPltNT.next()){
66                                          strPltNT=strPltNT + rsPltNT.getString("DNA_Plate_Id") + "~''!" + rsPltNT.g
etString("Plate_Type") + "~''!" + rsPltNT.getString("Col_Id") + "~''!" + rsPltNT.getString("Row_Id") + "''~!";
67                                  }
68                                  session.setAttribute("pltidtype",strPltNT);
69                          }catch(Exception e){
70                                  e.printStackTrace();
71                          }
72                  return retdata;
73          }
74
75          public String upPlateid(HttpSession session, ActionForm form, HttpServletRequest req, String un, Connectio
n con){
76                  String msg="";
77                  String plttype=session.getAttribute("pltidtype").toString();
78                  String[] strPlatetype=plttype.split("~''!");
79                  String strGenotypeids=req.getParameter("hstrGenoid");
80
81                  try{
82                                  int nn;
83                                  int mm;
84                                  int mk;
85                                  if (strPlatetype[1].equals("96")){
86                                   nn=9;
87                                   mm=13;
```

```
 mk=1;
}else{
        nn=2;
        mm=17;
        mk=1;
}
int a=0;
        int cha=65;

        Statement stmtDelPlateid=con.createStatement();
        boolean bDel=stmtDelPlateid.execute("delete from DNA_Extraction_Well where DNA_Plate_Id='"+ strPlatetype[0] +"'");

        boolean bDelControls=stmtDelPlateid.execute("delete from DNA_Extraction_Plate_Controls where DNA_Plate_Id='"+ strPlatetype[0] +"'");
        PreparedStatement pstmt1=con.prepareStatement("insert into DNA_Extraction_Well values(?,?,?,?)");
        PreparedStatement pstmt2=con.prepareStatement("insert into DNA_Extraction_Plate_Controls values(?,?,?,?)");
                                                for (int j=1;j<nn;j++){
                                                        for(int k=mk;k<mm;k++){
                                                                String[] strGenos=strGenotypeids.split("''~!");
                                                                if (strGenos[a].equals("NULL")){
                                                                        a=a+1;
                                                                }else{
                                                                        pstmt1.setString(1,strPlatetype[0]);
                                                                        pstmt1.setString(2,strGenos[a]);
                                                                        pstmt1.setInt(3,k);
                                                                        pstmt1.setString(4,new Character((char)cha).toString());
                                                                        pstmt1.addBatch();


  //                                                                    //Update control values
                                                                        String strControl= req.getParameter("chk" + new Character((char)cha).toString() + k);
                                                                        if(strControl==null)
                                                                        {
                                                                                strControl="off";
                                                                        }

                                                                        if (strControl.equals("on")){

                                                                                pstmt2.setString(1
```

```
,strPlatetype[0]);
   125                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
,strGenos[a]);
   126                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
;
   127                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
,new Character((char)cha).toString());
   128                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   129                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   130                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   131                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   132                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   133                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   134                                                                                                                                                                                                                                                                                                                                                                                                                                                
   135                                                                                                                                                                                                                                                                                                                                                                                                                                                
   136                                                                                                                                                                                                                                                                                                                                                                                                                                                
   137                                                                                                                                                                                                                                                                                                                                                                                                                                                
   138                                                                                                                                                                                                                                                                                                                                                                                                                                                
Extraction_Tracking SET Date_Of_Correction=? where DNA_Plate_Id='"+ strPlatetype[0] +"'");
   139                                                                                                                                                                                                                                                                                                                                                
is()));
   140                                                                                                                                                                                                                                                                                                                                                
   141                                                                                                                                                                                                                                                                                                                                                
   142
   143
   144                                                                                                                                                                                                                                                                                                                                                
   145
   146
   147
   148
   149
resp)throws Exception
   150
   151
   152  //
   153
   154
   155
   156
   157
   158
   159
   160
   161
   162
```

```
                                con=dataSource.getConnection();
                                ArrayList disenList = dnaPlateidList(uname,req,con);
                                if (req.getQueryString().equals("upd")){
                                        String retPlateid=upPlateid(session,form,req,uname,con);
                                        msg=retPlateid;
                                }else if (req.getQueryString().equals("retplateid")){
                                        String retData=getRetData(uname,req.getParameter("exptnames"),req,con);
                                        session.setAttribute("retED",retData);
                                        msg="disgeno";
                                }else{
                                        if(!disenList.isEmpty()){
                                                msg="dis";
                                                session.setAttribute("Plateids", disenList);
                                                req.setAttribute("isPlatesAvailable","PlatesAvailable");
                                        }
                                        else
                                        {

                                                msg="dis";
                                                req.setAttribute("isPlatesAvailable","");
                                        }
                                }
                                //con.close();
                        }catch(Exception e){
                                System.out.println(e);
                        }finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                        return map.findForward(msg);
                }
        }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/extraction/ExtractionInsertAction.java

```
/*
 * Created on Sep 6, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.extraction;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
```

```
import java.sql.Timestamp;
import java.text.SimpleDateFormat;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;


/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class ExtractionInsertAction extends Action{

        public ActionForward execute(ActionMapping map, ActionForm form,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub

                HttpSession session=req.getSession(true);
//              user identification

                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return map.findForward(msg);
                }

                ActionErrors ae = new ActionErrors();
                String dnaProtocol=req.getParameter("dnaProtocol");

                String[] arrCPID=req.getParameter("dnaPN").split("‘‘~!");
                String strCPID="";
                for (int i=0;i<arrCPID.length;i++){
                        strCPID=strCPID + "’" + arrCPID[i] + "’,";
                }
                String[] strPlateid=req.getParameter("dnaPN").split("‘‘~!");
                String strPlatetype=req.getParameter("eonto");
```

```
                  String[] arrExptname=req.getParameter("exptname").split("‘‘~!");

                  String[] arrTM=req.getParameter("hidts").split("‘‘~!");

                  String[] arrAM=req.getParameter("hidam").split("‘‘~!");
                  String[] strGenotypeids=req.getParameter("hidGenoRowCol").split("‘‘~!");

                  //date
                  java.util.Date udate=null;
                  Timestamp ts=null;
          try {
                  SimpleDateFormat df=new SimpleDateFormat("dd-MM-yy");
                  udate=df.parse(req.getParameter("dnadate").toString());

                  java.util.Date utilDate=new java.util.Date(udate.getTime());
                          Timestamp sqldate=new Timestamp(utilDate.getTime());
                          ts=new Timestamp(sqldate.getTime());
                   }catch (Exception err) {
                  System.out.println("err"+ err.toString());
              }
                  String upscid=(String) session.getAttribute("upsc");
                  String msg="";
                  Connection con=null;
                  try{
                          ServletContext context = servlet.getServletContext();
                  DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                          con=dataSource.getConnection();

                          Statement stmtChkPID=con.createStatement();
                          ResultSet rsChkPID=stmtChkPID.executeQuery("select DNA_Plate_Id from DNA_Extraction_Tracki
ng where (lower(DNA_Plate_Id) IN ("+ strCPID.substring(0,strCPID.length()-1).toLowerCase() +"))");

                          //checking duplicate
                          int intChkCount=0;
                          while(rsChkPID.next()){
                                  intChkCount=intChkCount+1;
                          }

                          if (intChkCount==0){

                          //store the dna extraction tracking data into database
                          PreparedStatement pstmt=con.prepareStatement("insert into DNA_Extraction_Tracking values(?
,?,?,?,?,?)");

                          //store the dna extraction experiment details data into database
                          PreparedStatement pstmtExptDetails=con.prepareStatement("insert into DNA_Extraction_Exptde
tails values(?,?,?,?)");
```

```
106                             for (int pid=0;pid<Integer.parseInt(req.getParameter("hidNoofPlates"));pid++){
107                                     pstmt.setString(1,strPlateid[pid]);
108                                     pstmt.setString(2,dnaProtocol);
109                                     pstmt.setString(3,strPlatetype);
110                                     pstmt.setString(4,upscid);
111                                     pstmt.setTimestamp(5,ts);
112                                     pstmt.setTimestamp(6,null);
113                                     pstmt.addBatch();
114
115
116                                     for (int expt=0;expt<arrExptname.length;expt++){
117                                             pstmtExptDetails.setString(1,strPlateid[pid]);
118                                             pstmtExptDetails.setString(2,arrExptname[expt]);
119                                             pstmtExptDetails.setString(3,arrTM[expt]);
120                                             pstmtExptDetails.setString(4,arrAM[expt]);
121                                             pstmtExptDetails.addBatch();
122                                     }
123                             }
124                             ///////////////////add dna extraction tracking and plate controls data into database
125
126                             PreparedStatement pstmt1=con.prepareStatement("insert into DNA_Extraction_Well values(?,?,
?,?)");
127                             PreparedStatement pstmt2=con.prepareStatement("insert into DNA_Extraction_Plate_Controls v
alues(?,?,?,?)");
128                                     int nn;
129                                     int mm;
130                                     int mk;
131                                     if (strPlatetype.equals("96")){
132                                      nn=9;
133                                      mm=13;
134                                      mk=1;
135                                     }else{
136                                              nn=2;
137                                              mm=17;
138                                              mk=1;
139                                     }
140                                     int a=0;
141                                             int cha=65;
142
143                                             for(int i=0;i<Integer.parseInt(req.getParameter("hidNoofPlates"));i++)
144                                                     {
145                                                             for (int j=1;j<nn;j++){
146                                                                     for(int k=mk;k<mm;k++){
147                                                                             String strGenos=strGenotypeids[a];
148                                                                             //insert statement
149                                                                             if (strGenos.equals("NULL")){
150                                                                                             a=a+1;
151                                                                                     }else{
```

```
   152                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   153                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   154                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                String ab=strPlateid[i];
   155                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pstmt1.setString(1,ab);
   156                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pstmt1.setString(2,strGeno
s);
   157                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pstmt1.setInt(3,k);
   158                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pstmt1.setString(4,new Cha
racter((char)cha).toString());
   159                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pstmt1.addBatch();
   160                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   161                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   162                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   163                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   164                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   165                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   166                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   167                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   168                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   169                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   170                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   171                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   172                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   173                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   174                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   175                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   176                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   177                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   178                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   179                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   180                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   181                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   182                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   183                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   184                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   185                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   186                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   187                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   188                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   189                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   190                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
```

```
                                                        pstmt.executeBatch();
                                                        pstmtExptDetails.executeBatch();
                                                        pstmt1.executeBatch();
                                                        pstmt2.executeBatch();
                                                        con.commit();

                                                }catch(Exception e){
                                                        con.rollback();

                                                }
                                                msg="ins";
                                        }else{
                                                ae.add("myerrors", new ActionError("PlateId.already.exists"));
                                                saveErrors(req, ae);
                                                //msg="chkPlateid";
                                                return (new ActionForward(map.getInput()));
                                        }
                                        //con.close();
                                }catch(Exception e){
                                        e.printStackTrace();
                                }
                                finally{
                                      try{
                                                if(con!=null) con.close();
                                         }catch(Exception e){System.out.println(e);}
                                        }
                                String genos1=(String) req.getParameter("hidGenos");
                                return map.findForward(msg);
                }

                }
```

./WEB-INF/src/org/icrisat/lims/sampletracking/extraction/ExtractionPlateAction.java

```
/*
 * Created on Sep 6, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.sampletracking.extraction;

```

```
 9  import java.sql.Connection;
10  import java.sql.ResultSet;
11  import java.sql.Statement;
12  import java.util.ArrayList;
13
14  import javax.servlet.ServletContext;
15  import javax.servlet.http.HttpServletRequest;
16  import javax.servlet.http.HttpServletResponse;
17  import javax.servlet.http.HttpSession;
18  import javax.sql.DataSource;
19
20
21
22  import org.apache.struts.Globals;
23  import org.apache.struts.action.Action;
24  import org.apache.struts.action.ActionForm;
25  import org.apache.struts.action.ActionForward;
26  import org.apache.struts.action.ActionMapping;
27
28
29  /**
30   * @author lswarupa
31   *
32   * TODO To change the template for this generated type comment go to
33   * Window - Preferences - Java - Code Style - Code Templates
34   */
35  public class ExtractionPlateAction extends Action{
36          public ActionForward execute(ActionMapping map, ActionForm form,
37                          HttpServletRequest req, HttpServletResponse res) throws Exception {
38                  // TODO Auto-generated method stub
39                  HttpSession session = req.getSession(true);
40  //              user identification
41
42                  if((String)session.getAttribute("user")==null){
43
44                           String msg="logout";
45                          return map.findForward(msg);
46                  }
47                  //
48                  ArrayList al=new ArrayList();
49                          String msg="";
50                          String expt=req.getParameter("cnames");
51
52                          String[] exptnames=expt.split("!‘~!");
53                          String enames="";
54                          for (int ex=0;ex<exptnames.length;ex=ex+1){
55                                  if (ex==exptnames.length){
56                                          enames=enames + exptnames[ex];
```

```
                                }else{
                                enames=enames + exptnames[ex] + "’’~!";
                                }

                        }

                        String[] enamesarr=enames.split("’’~!");
                        String enames1="";
                        for (int ex1=0;ex1<enamesarr.length;ex1=ex1+2){
                                if (ex1==enamesarr.length){
                                        enames1=enames1 + "’" + enamesarr[ex1] + "’";
                                }else{
                                enames1=enames1 + "’" + enamesarr[ex1] + "’" + ",";
                                }
                        }

                        String enames2=enames1.substring(0,enames1.length()-1);


                        Connection con=null;
                        try{
                        ServletContext context = servlet.getServletContext();
                DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                        Statement st = con.createStatement();
                        ResultSet rs = st.executeQuery("select Genotype_Id,LIMS_Id from Genotype_Master where Experiment_Name in ("+ enames2 +") and upsc_id=’"+ session.getAttribute("upsc")+"’");
                        String values="";
                        String strNoofGenotypes="";
                        while(rs.next()){
                                values = values + rs.getString("Genotype_Id")+ "~’’!" + rs.getString("LIMS_Id") +"’’~!";
                                al.add(rs.getString("Genotype_Id"));
                        }
                        //con.close();
                        //System.out.println("*****   "+req.getParameter("fillType"));
                        session.setAttribute("type", req.getParameter("fillType"));
                        session.setAttribute("genotypeList",values);
                        session.setAttribute("alList",al);
                        msg="ins";
                        }catch(Exception e){}
                        finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                        return map.findForward(msg);
```

```
        }
 }
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrprotocols/TouchdownProgramsAction.java

```
/*
 * Created on Nov 16, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrprotocols;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class TouchdownProgramsAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                String temp="touchdown";
                Connection con=null;
                Statement st=null;
```

```
                  ResultSet rs=null;
                  String pflag="false";
                  try{
//                        creating connection
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                        st=con.createStatement();
                        DynaActionForm df=(DynaActionForm)af;
                        String programname=df.get("pname").toString();
                        rs=st.executeQuery("select * from LIMS_PCR_Protocols where PCR_Program_Id='"+req.getParame
ter("pname")+"'");
                        if(rs.next())    pflag="true";
                        req.getSession().setAttribute("program",temp);
                        req.getSession().setAttribute("pflag", pflag);
                        //con.close();
                  }catch(Exception e){System.out.println(e);}
                  finally{
                        try{
                                  if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                  return am.findForward("showtouchdownprograms");
          }
  }
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrprotocols/ConcentrationCalcAction.java

```
/*
 * Created on Dec 8, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrprotocols;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

import org.icrisat.lims.common.RoundFloatValuesAction;

```

```
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class ConcentrationCalcAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                String str="";
                //
                RoundFloatValuesAction round=new RoundFloatValuesAction();
                //String premix=req.getParameter("premix");
                String premix=session.getAttribute("pmix").toString();
                double totvol=Double.parseDouble(req.getParameter("totvol"));
                session.setAttribute("premix", premix);
                if(premix.equals("no")){
                        double conc=Double.parseDouble(req.getParameter("pconc"));
                        double pristco=Double.parseDouble(req.getParameter("pstconc"));
                        double dconc=Double.parseDouble(req.getParameter("dconc"));
                        double dvol=Double.parseDouble(req.getParameter("dstconc"));
                        double mgcon=Double.parseDouble(req.getParameter("mgconc"));
                        double mgscon=Double.parseDouble(req.getParameter("mgstconc"));
                        double taqc=Double.parseDouble(req.getParameter("taqc"));
                        double tacvol=Double.parseDouble(req.getParameter("taqstconc"));
                        double dna=Double.parseDouble(req.getParameter("dna"));
                        double dnasc=Double.parseDouble(req.getParameter("dnastconc"));

                        double ppo=round.roundThree((conc*pristco)/totvol);
                        req.getSession().setAttribute("concentration",String.valueOf(ppo));

                        double dnpcon=round.roundThree((dvol*dconc)/totvol);
                        req.getSession().setAttribute("dnpcon",String.valueOf(dnpcon));

                        double bufcon=round.roundThree(0.1*totvol);
                        req.getSession().setAttribute("buhid",String.valueOf(bufcon));

                        double mghcon=round.roundThree((mgscon*mgcon)/totvol);
                        req.getSession().setAttribute("mghid",String.valueOf(mghcon));

```

```
                        double taqhcon=round.roundThree(tacvol*taqc);
                        req.getSession().setAttribute("taqhid",String.valueOf(taqhcon));

                        double dnahcon=round.roundThree(dnasc*dna);
                        req.getSession().setAttribute("dnahid",String.valueOf(dnahcon));

                        double xw=round.roundThree(conc*2);
                        req.getSession().setAttribute("xw",String.valueOf(xw));

                        //double wat=round.roundThree(totvol-(xw+dconc+mgcon+taqc+dna+bufcon));
                        double wat=round.roundThree(totvol-(conc+dconc+mgcon+taqc+dna+bufcon));

                        req.getSession().setAttribute("wat",String.valueOf(wat));

                        double tvols=round.roundThree(conc+dconc+1+mgcon+taqc+dna);
                        req.getSession().setAttribute("tvols",String.valueOf(tvols));


                        str="notPremix";

                }else{
                        //System.out.println("Premix = yes");
                        double premixsol=Double.parseDouble(req.getParameter("premixsol"));
                        req.getSession().setAttribute("premixsol",String.valueOf(premixsol));
                        double pconc=Double.parseDouble(req.getParameter("pconc"));
                        req.getSession().setAttribute("pconc",String.valueOf(pconc));
                        double dnasc=Double.parseDouble(req.getParameter("dnasc"));
                        req.getSession().setAttribute("dnasc",String.valueOf(dnasc));
                        //double total=Double.parseDouble(req.getParameter("totvol"));
                        double tvols=round.roundThree(premixsol+pconc+dnasc);

                        req.getSession().setAttribute("tvols",String.valueOf(tvols));
                        double water=totvol-(premixsol+pconc+dnasc);
                        req.getSession().setAttribute("water",String.valueOf(water));
                        str="Premix";
                }
                        req.getSession().setAttribute("pmo",req.getParameter("primer"));
                        return am.findForward(str);

        }
 }
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrprotocols/FixedInsertAction.java

```
/*
 * Created on Nov 16, 2005
 *
 * TODO To change the template for this generated file go to
```

```
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrprotocols;

import java.sql.Connection;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class FixedInsertAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){

            session.removeAttribute("pcr");
            session.removeAttribute("cflag");
                }
                //
                Connection con=null;
                Statement st1=null;
                String pflag="false";
                int x;
                String program=(String)req.getSession().getAttribute("program");
                String pcr="program";
                try{
```

```
53  //                        creating connection
54                            ServletContext context=servlet.getServletContext();
55                            DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
56                            con=datasource.getConnection();
57
58                              st1=con.createStatement();
59
60                                    if(program.equalsIgnoreCase("fixed")){
61                                     x=st1.executeUpdate("insert into LIMS_PCR_Protocols(PCR_Program_Id,Crop,User_Id,I
nitial_Denaturation_Temp_In_DegreeC,Initial_Denaturation_Time_In_Mins,Cycle_Fixed_Denat_Temp_In_DegreeC,Cycle_Fixed_Denat_
Time_In_Secs,Cycle_Fixed_Temp_In_DegreeC,Cycle_Fixed_Time_In_Secs,Cycle_Fixed_Num_Of_Cycles,Fixed_Extension_Temp_In_Degree
C,Fixed_Extension_Time_In_Mins,Final_Extension_Temp_In_DegreeC,Final_Extension_Time_In_Mins,final_hold_forever_in_degreec)
 values ('"+req.getParameter("pname")+"','"+(String)session.getAttribute("crop")+"','"+req.getSession().getAttribute("user
")+"','"+req.getParameter("dtemp")+"','"+req.getParameter("idtime")+"','"+req.getParameter("dentemp")+"','"+req.getParamet
er("dtime")+"','"+req.getParameter("ann")+"','"+req.getParameter("annt")+"','"+req.getParameter("cyc")+"','"+req.getParame
ter("ext")+"','"+req.getParameter("extt")+"','"+req.getParameter("fext")+"','"+req.getParameter("fextt")+"','"+req.getPara
meter("ffinalhold")+"')");
62                                          if(x==1){
63                                                  pflag="insert";
64                                          }
65                                    }
66                                    else if(program.equalsIgnoreCase("touchdown")){
67                                     x=st1.executeUpdate("insert into LIMS_PCR_Protocols(PCR_Program_Id,Crop,User_Id,I
nitial_Denaturation_Temp_In_DegreeC,Initial_Denaturation_Time_In_Mins,Cycle_Fixed_Denat_Temp_In_DegreeC,Cycle_Fixed_Denat_
Time_In_Secs,Cycle_Fixed_Temp_In_DegreeC,Cycle_Fixed_Time_In_Secs,Fixed_Extension_Temp_In_DegreeC,Fixed_Extension_Time_In_
Mins,Cycle_Fixed_Num_Of_Cycles,Cycle_Touchdown_Denat_Temp_In_DegreeC,Cycle_Touchdown_Denat_Time_In_Secs,Cycle_Touchdown_Te
mp_From_In_DegreeC,Cycle_Touchdown_Temp_To_In_DegreeC,Cycle_Touchdown_Increment_Decrement_In_Degree,Touchdown_Extension_Te
mp_In_DegreeC,Touchdown_Extension_Time_In_Mins,Cycle_Touchdown_Num_Of_Cycles_At_Fixed_Final_Temp,Final_Extension_Temp_In_D
egreeC,Final_Extension_Time_In_Mins,final_hold_forever_in_degreec) values ('"+req.getParameter("pname")+"','"+(String)sess
ion.getAttribute("crop")+"','"+req.getSession().getAttribute("user")+"','"+req.getParameter("identemp")+"','"+req.getParam
eter("identime")+"','"+req.getParameter("fcdentemp")+"','"+req.getParameter("fcdentime")+"','"+req.getParameter("fcanntemp
")+"','"+req.getParameter("fcanntime")+"','"+req.getParameter("fcexttemp")+"','"+req.getParameter("fcexttime")+"','"+req.g
etParameter("fccyctemp")+"','"+req.getParameter("tcdentemp")+"','"+req.getParameter("tcdentime")+"','"+req.getParameter("t
canntemp")+"','"+req.getParameter("tcanntime")+"','"+req.getParameter("tcannidc")+"','"+req.getParameter("tcexttemp")+"','
"+req.getParameter("tcexttime")+"','"+req.getParameter("tccyctemp")+"','"+req.getParameter("exttemp")+"','"+req.getParamet
er("exttime")+"','"+req.getParameter("tdfhold")+"')");
68                                     if(x==1){
69                                            pflag="insert";
70                                     }
71                                    }
72
73
74                                    req.setAttribute("pflag", pflag);
75                              req.getSession().setAttribute("pcr", pcr);
76                        //con.close();
77                    }catch(Exception e){System.out.println(e);}
78                    finally{
79                          try{
```

```
                                if(con!=null) con.close();
                            }catch(Exception e){System.out.println(e);}
                           }
                    return am.findForward("insert");
            }
    }
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrprotocols/FixedProgramsAction.java

```
/*
 * Created on Nov 15, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrprotocols;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class FixedProgramsAction extends Action{

        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
```

```

                         String msg="logout";
                        return am.findForward(msg);
                }
                //
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                String pflag="false";
                try{
//                      creating connection
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                          st=con.createStatement();
                                DynaActionForm df=(DynaActionForm)af;
                                String programname=df.get("pname").toString();
                                 rs=st.executeQuery("select * from LIMS_PCR_Protocols where PCR_Program_Id='"+req.
getParameter("pname")+"'");
                                  if(rs.next())  pflag="true";
                                        //str="exists";
                        req.getSession().setAttribute("program","fixed");
                        req.getSession().setAttribute("pflag", pflag);
                //con.close();
                }catch(Exception e){System.out.println(e);}
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return am.findForward("showfixedprograms");

        }
}
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrprotocols/RetriveAction.java

```
/*
 * Created on Nov 16, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrprotocols;

import java.sql.Connection;
import java.sql.ResultSet;
```

```
11  import java.sql.Statement;
12  import java.util.ArrayList;
13
14  import javax.servlet.ServletContext;
15  import javax.servlet.http.HttpServletRequest;
16  import javax.servlet.http.HttpServletResponse;
17  import javax.servlet.http.HttpSession;
18  import javax.sql.DataSource;
19
20  import org.apache.struts.Globals;
21  import org.apache.struts.action.Action;
22  import org.apache.struts.action.ActionError;
23  import org.apache.struts.action.ActionErrors;
24  import org.apache.struts.action.ActionForm;
25  import org.apache.struts.action.ActionForward;
26  import org.apache.struts.action.ActionMapping;
27
28  /**
29   * @author lswarupa
30   *
31   * TODO To change the template for this generated type comment go to
32   * Window - Preferences - Java - Code Style - Code Templates
33   */
34  public class RetriveAction extends Action{
35          public ActionForward execute(ActionMapping am, ActionForm af,
36                          HttpServletRequest req, HttpServletResponse res) throws Exception {
37  //              user identification
38                  HttpSession session=req.getSession(true);
39                  if((String)session.getAttribute("user")==null){
40                           String msg="logout";
41                          return am.findForward(msg);
42                  }
43                  // TODO Auto-generated method stub
44                  String pcrmix=req.getParameter("premix");
45                  String str="";
46                  Connection con=null;
47                  Statement st=null;
48                  ResultSet rs=null;
49                  Statement st1=null;
50                  ResultSet rs1=null;
51                  ResultSet rs2=null;
52                  Statement st2=null;
53                  ResultSet rs3=null;
54                  Statement stmt=null;
55
56                  ActionErrors ae=new ActionErrors();
57                  ArrayList a=new ArrayList();
58                  ArrayList b=new ArrayList();
```

```
                    ArrayList c=new ArrayList();
                    try{
                            String parameter=req.getParameter("reaction");
                            if(parameter.equalsIgnoreCase("concentration"))str="mole";
                            else if(parameter.equalsIgnoreCase("volume"))str="vol";
  //                        creating connection
                            ServletContext context=servlet.getServletContext();
                            DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                            con=datasource.getConnection();

                            st=con.createStatement();
                            stmt = con.createStatement();
                            session.setAttribute("totvol", req.getParameter("totvol"));
                            rs=st.executeQuery("select distinct crop_name from user_psc where user_id='"+req.getSessio
n().getAttribute("user")+"'");
                            while(rs.next())
                                    a.add(rs.getString(1));
                                req.getSession().setAttribute("conccrop",a);
                                rs3=stmt.executeQuery("select *  from LIMS_PCR_Reactors where PCR_Reaction_Id='"+req.g
etParameter("pcrid")+"'");
                                if(rs3.next()){
                                            ae.add("error",new ActionError("reactionid.Already.exists"));
                                            saveErrors(req,ae);
                                            return am.findForward(parameter);
                                    }else{
                                        st1=con.createStatement();
                                        rs1=st1.executeQuery("select distinct Taq_buffer_Manufacturer from LIMS_PCR_Re
actors where Taq_buffer_Manufacturer<>'' ");
                                        while(rs1.next())
                                            b.add(rs1.getString(1));
                                        req.getSession().setAttribute("consupplier",b);
                                            req.getSession().setAttribute("pmix",pcrmix);
                                    }
                            }catch(Exception e){e.printStackTrace();}
                            finally{
                                  try{
                                            if(con!=null) con.close();
                                     }catch(Exception e){System.out.println(e);}
                                    }
                      return am.findForward(str);
          }
  }
./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrprotocols/VolumeCalcAction.java


 /*
  * Created on Nov 17, 2005
  *
```

```
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrprotocols;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

import org.icrisat.lims.common.RoundFloatValuesAction;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class VolumeCalcAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                String supplier="";
                //
                //System.out.println(+req.getParameter("reaction"));
                RoundFloatValuesAction round=new RoundFloatValuesAction();
                double conc=Double.parseDouble(req.getParameter("pconc"));
                double totvol=Double.parseDouble(req.getParameter("totvol"));
                double pristco=Double.parseDouble(req.getParameter("pstconc"));
                double dconc=Double.parseDouble(req.getParameter("dconc"));
                double dvol=Double.parseDouble(req.getParameter("dstconc"));
                double mgcon=Double.parseDouble(req.getParameter("mgconc"));
                double mgscon=Double.parseDouble(req.getParameter("mgstconc"));
                double taqc=Double.parseDouble(req.getParameter("taqc"));
                double tacvol=Double.parseDouble(req.getParameter("taqstconc"));
                double dna=Double.parseDouble(req.getParameter("dna"));
                double dnasc=Double.parseDouble(req.getParameter("dnastconc"));
```

```

                double con=round.roundThree((conc*totvol)/pristco);
                req.getSession().setAttribute("concentration",String.valueOf(con));
                double dnpcon=round.roundThree((totvol*dconc)/dvol);
                req.getSession().setAttribute("dnpcon",String.valueOf(dnpcon));
                double bufcon=(totvol*0.1);

                req.getSession().setAttribute("buhid",String.valueOf(bufcon));
                //double mghcon=round.roundThree((totvol*mgcon)/mgscon);
                double mghcon=round.roundThree((totvol*mgcon)/mgscon);
                req.getSession().setAttribute("mghid",String.valueOf(mghcon));
                double taqhcon=round.roundThree(taqc/tacvol);
                req.getSession().setAttribute("taqhid",String.valueOf(taqhcon));
                double dnahcon=round.roundThree(dna/dnasc);

                req.getSession().setAttribute("dnahid",String.valueOf(dnahcon));
                double xw=round.roundThree(con*2);
                req.getSession().setAttribute("xw",String.valueOf(xw));
                double wat=round.roundThree(totvol-(con+dnpcon+mghcon+taqhcon+dnahcon+bufcon));

                //double wat=round.roundThree(totvol-(con+dnpcon+mghcon+taqhcon+dnahcon+bufcon));
                req.getSession().setAttribute("wat",String.valueOf(wat));
                double tvols=round.roundThree(xw+dnpcon+mghcon+taqhcon+dnahcon+bufcon);
                req.getSession().setAttribute("tvols",String.valueOf(tvols));


                if(req.getParameter("tag").equalsIgnoreCase("Add New"))
                        supplier=req.getParameter("newsupplier");
                else
                        supplier=req.getParameter("tag");
                session.setAttribute("tag", supplier);

                /*String name="";

                if(req.getParameter("padn")==null)
                        name="none";
                else if(req.getParameter("padn").equalsIgnoreCase("Add New"))
                        name=req.getParameter("newname");
                else
                        name=req.getParameter("padn");*/
            // req.getSession().setAttribute("name",name);
            /* String units=req.getParameter("ouni");
             if(!units.equalsIgnoreCase(""))
                        units=req.getParameter("ouni");
                else
                        units=req.getParameter("pac");
                req.getSession().setAttribute("units",units);*/
                //System.out.println("%%%%%   "+req.getParameter("primer"));
```

```
                req.getSession().setAttribute("pmo",req.getParameter("primer"));
                String premix=req.getParameter("premix");
                //System.out.println(" .......................   VolumeCalcAction.Java="+premix);
                session.setAttribute("premix", premix);
                return am.findForward("blank");
        }
}
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrprotocols/VolumeInsertAction.java

```
/*
 * Created on Dec 5, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrprotocols;

import java.sql.Statement;
import java.sql.Connection;
import java.sql.PreparedStatement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class VolumeInsertAction extends Action{
                public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
```

```
                        return am.findForward(msg);
                }
                if(session!=null){
                           session.removeAttribute("pcr");
                }
                Connection con=null;
                PreparedStatement st=null;
                Statement stmt=null;
                //ResultSet rs=null;
                String temp="";
                String pcr="reaction";
                String flag="false";
                String supplier="";
                try{
 //                      creating connection
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();
                        stmt=con.createStatement();
                                String pmo=(String)req.getSession().getAttribute("pmo");
                                temp="pmole";
                                if(session.getAttribute("premix").equals("no")){
                                        /*if(req.getParameter("tag").equalsIgnoreCase("Add New"))
                                                supplier=req.getParameter("newsupplier");
                                        else
                                                supplier=req.getParameter("tag");*/
                                        //supplier=(String)session.getAttribute("tag");
                                        st=con.prepareStatement("insert into LIMS_PCR_Reactors values ('"+req.getP
arameter("pcrid")+"','"+session.getAttribute("crop")+"','"+req.getSession().getAttribute("user")+"',"+req.getParameter("to
tvol")+","+req.getParameter("pconc")+",'"+temp+"',"+req.getParameter("pstconc")+","+req.getSession().getAttribute("concent
ration")+","+req.getParameter("dconc")+","+req.getParameter("dstconc")+","+req.getSession().getAttribute("dnpcon")+",1,10,
"+req.getSession().getAttribute("buhid")+","+req.getParameter("mgconc")+","+req.getParameter("mgscon")+","+req.getSession(
).getAttribute("mghid")+","+req.getParameter("taqc")+","+req.getParameter("tacvol")+","+req.getSession().getAttribute("taq
hid")+","+req.getParameter("dna")+","+req.getParameter("dnasc")+","+req.getSession().getAttribute("dnahid")+","+req.getSes
sion().getAttribute("wat")+",'"+req.getSession().getAttribute("tag")+"','no')");
                                }else{
                                        st=con.prepareStatement("insert into LIMS_PCR_Reactors (pcr_reaction_id, c
rop, user_id, total_volume,primer_volume,primer_unit,dna_volume,ready_made_pcr_mix,premix_sol,water) values ('"+req.getPar
ameter("pcrid")+"','"+req.getParameter("crop")+"','"+req.getSession().getAttribute("user")+"',"+req.getParameter("totvol")
+","+req.getParameter("pconc")+",'"+temp+"',"+req.getParameter("dnasc")+",'"+session.getAttribute("premix")+"',"+req.getPa
rameter("premixsol")+","+req.getParameter("water")+")");
                                }
                                st.execute();
                        req.getSession().setAttribute("cflag",flag);
                        req.getSession().setAttribute("pcr", pcr);
                }catch(Exception e){
                        e.printStackTrace();
                }finally{
```

```
                        try{
                                if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                 return am.findForward("concinsert");
         }
 }
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrprotocols/PCRProgramsAction.java

```
/*
 * Created on Nov 24, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrprotocols;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class PCRProgramsAction extends Action {

         /* (non-Javadoc)
          * @see org.apache.struts.action.Action#execute(org.apache.struts.action.ActionMapping, org.apache.struts.action.ActionForm, javax.servlet.http.HttpServletRequest, javax.servlet.http.HttpServletResponse)
          */
         public ActionForward execute(ActionMapping am, ActionForm af,
                         HttpServletRequest req, HttpServletResponse res) throws Exception {
                 // TODO Auto-generated method stub
```

```
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                        String msg="logout";
                       return am.findForward(msg);
                }
                //
                String button=req.getParameter("button");
                String str="";
                Connection con=null;
                ResultSet rs=null;
                Statement st=null;
                Statement st1=null;
                ResultSet rs1=null;

                try{
//                      creating connection
                       ServletContext context=servlet.getServletContext();
                       DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                       con=datasource.getConnection();
                          if(button.equalsIgnoreCase("submit"))
                      {
                                st=con.createStatement();
                                rs=st.executeQuery("select Crop,Taq_buffer_Manufacturer from LIMS_PCR_Reactors wh
ere PCR_Reaction_Id='"+req.getParameter("recid")+"'");
                                rs.next();
                                st1=con.createStatement();
                                rs1=st1.executeQuery("select Crop,Initial_Denaturation_Time_In_Mins from LIMS_PCR
_Protocols where PCR_Program_Id='"+req.getParameter("prgid")+"'");
                                rs1.next();
                               req.getSession().setAttribute("programsrs",rs);
                            req.getSession().setAttribute("reactionsrs",rs1);
                            str="submit";
                       }
                     else if(button.equalsIgnoreCase("details"))
                     {
                        st=con.createStatement();
                        rs=st.executeQuery("select PCR_Program_Id,Crop,Initial_Denaturation_Temp_In_DegreeC,Initi
al_Denaturation_Time_In_Mins,Cycle_Fixed_Denat_Temp_In_DegreeC,Cycle_Fixed_Denat_Time_In_Secs,Cycle_Touchdown_Denat_Temp_I
n_DegreeC,Cycle_Touchdown_Denat_Time_In_Secs,Cycle_Fixed_Temp_In_DegreeC,Cycle_Fixed_Time_In_Secs,Cycle_Fixed_Num_Of_Cycle
s,Cycle_Touchdown_Temp_From_In_DegreeC,Cycle_Touchdown_Temp_To_In_DegreeC,Cycle_Touchdown_Increment_Decrement_In_Degree,Cy
cle_Touchdown_Cycles_Per_Increment_Decrement_In_Degree,Cycle_Touchdown_Num_Of_Cycles_At_Fixed_Final_Temp,Cycle_Touchdown_T
ime_In_Secs,Fixed_Extension_Temp_In_DegreeC,Fixed_Extension_Time_In_Mins,Touchdown_Extension_Temp_In_DegreeC,Touchdown_Ext
ension_Time_In_Mins,Final_Extension_Temp_In_DegreeC,Final_Extension_Time_In_Mins from LIMS_PCR_Protocols where PCR_Program
_Id='"+req.getParameter("prgid")+"'");
                        rs.next();
                        st1=con.createStatement();
```

```
                            rs1=st1.executeQuery("select PCR_Reaction_Id,Crop,Total_Volume,Primer_conc,Primer_Unit,Pr
imer_Stock_Conc,Primer_Volume,dNTP_Conc,dNTP_Stock_Conc,dNTP_Volume,Buffer_Conc,Buffer_Stock_Conc,Buffer_Volume,MgCl2_Conc
,MgCl2_Stock_Conc,MgCl2_Volume,Taq_Conc,Taq_Stock_Conc,Taq_Volume,DNA_Conc,DNA_Stock_Conc,DNA_Volume,Water,Q_Soln,PCR_Addi
tives_Name,PCR_Additives_Conc,Taq_buffer_Manufacturer from LIMS_PCR_Reactors where PCR_Reaction_Id='"+req.getParameter("re
cid")+"'");
                            rs1.next();
                                str="details";
                                req.getSession().setAttribute("programsrs",rs);
                                req.getSession().setAttribute("reactionsrs",rs1);
                        }
                    //con.close();
                  }catch(Exception e){System.out.println(e);}
                  finally{
                        try{
                                  if(con!=null) con.close();
                            }catch(Exception e){System.out.println(e);}
                           }
                   return am.findForward(str);
          }
  }
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrmarkers/BulkInsertAction.java

```
//Inserting marker information into the database when loaded in bulk
/*
 * Created on Aug 8, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */

/**
 * @author GMeenakshi
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrmarkers;

import java.io.InputStream;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
import javax.sql.DataSource;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
```

```
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

import jxl.Cell;
import jxl.Sheet;
import jxl.Workbook;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
//import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.upload.FormFile;
import org.apache.struts.action.DynaActionForm;

public class BulkInsertAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm form, HttpServletRequest req, HttpServletRespons
e response) throws Exception{
                // TODO: Write method body
                HttpSession session = req.getSession(true);
                if((String)session.getAttribute("user")==null)
                {
                        String msg="logout";
                        return am.findForward(msg);
                }
                //creating object for form bean
                DynaActionForm lf=(DynaActionForm)form;
                String info="";
                int i,j,l,s;
                int p=0;
                Connection con=null;
                Statement stmt=null;
                Statement stmt1=null;
                Statement stmt2=null;
                Statement stmt3=null;
                ResultSet rs=null;
                ResultSet rs1=null;
                ResultSet rs2=null;
                ResultSet rs3=null;
                PreparedStatement pst=null;

                if(session!=null){
                        session.removeAttribute(" rev_pri_lab");
                        session.removeAttribute(" str");
                        session.removeAttribute(" str1");
                        session.removeAttribute(" prog_id");
                        session.removeAttribute(" crop");
```

```
                        session.removeAttribute(" crops");
                        session.removeAttribute(" reac_id");
                }

                FormFile file=(FormFile)lf.get("templateexcelfile");
                String sheetname=lf.get("sheetname").toString();
                String sfile=String.valueOf(file);
                String fname1=file.getFileName();
                InputStream stream=file.getInputStream();

                String strin="";
                String data="";
                String data1="";
                String crops="";



                if((fname1==null)||(fname1.equals("")))
                {
                        info="nofile";
                        return am.findForward(info);
                }
                else
                        try
                        {
                                //establising connection to databse
                                ServletContext context=servlet.getServletContext();
                                DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                                con=datasource.getConnection();

                                stmt = con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ
_ONLY);
                                stmt1 = con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_REA
D_ONLY);
                                stmt2 = con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_REA
D_ONLY);
                                stmt3=con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ_
ONLY);
                                pst=con.prepareStatement("INSERT INTO lims_pcr_markers VALUES(?,?,?,?,?,?,?,?,?,?,
?,?,?,?,?,?,?,?,?,?)");
                                rs=stmt.executeQuery("select marker_name from lims_pcr_markers");
                                rs3=stmt3.executeQuery("select distinct LOWER(crop_name) from user_psc where user_
id='"+(String)session.getAttribute("user")+"'");
                                Workbook workbook;

                                workbook=Workbook.getWorkbook(stream);

                                Sheet sheet=workbook.getSheet(sheetname);
```

```
115  //                                checking the sheet name
116                                    if(sheet==null){
117                                            session.setAttribute("Sheetname", sheetname);
118                                            info="sheetnm";
119                                            //con.close();
120                                            return am.findForward(info);
121
122                                    }
123                                    //String shee=sheet.getName();
124                                    int noOfRows=sheet.getRows();
125                                    int noOfCols=sheet.getColumns();
126                                    String str="";
127                                    String str1="";
128                                    String crop="";
129                                    String[] feild={"* Marker_name","* PCR_Program_Id","* Crop","* User_Id","* PCR_Rea
ction_Id","* Electrophoresis_Type","* Marker_Type","* Primer_Sequences_Forward","* Forward_Primer_Label","* Motif","* Prim
er_Sequences_Reverse","* Reverse_Primer_Label","Expected_Product_Size","Primer_Origin","Linkage_Group","Linkage_Group_Orig
in","Optimised_On_Genotypes","Allele_Size_Range","No_Of_Alleles","IP_Restrictions"};
130                                    String[] failerr={"markername","progid","crop","reactionid","electype","markertype
","forwardprimer","lable1","motif"};
131
132
133                                    //checking the no of columns in excel sheet
134                                    if(noOfCols!=20){
135                                            info="noofcols";
136                                            //con.close();
137                                            return am.findForward(info);
138                                    }
139
140                                    /*checking for column names.*/
141
142                                    for(j=0;j<feild.length;j++){
143                                            Cell c0=sheet.getCell(j,1);
144                                            str=c0.getContents().trim();
145                                            if(str.trim().equalsIgnoreCase(feild[j])){
146                                                    info="fail";
147                                            }else{
148                                                    info="noofcols";
149                                                    //con.close();
150                                                    return am.findForward(info);
151                                            }
152
153                                    }
154
155
156                                    /*checking for duplicate marker_names,program_id,reaction_id in the excel sheet*/
157                                    for(i=0;i<noOfRows;i++) {
158                                            if(i>1) {
```

```
159                                                     s=i+1;
160                                                     strin=String.valueOf(s);
161                                                     session.setAttribute("rev_pri_lab",strin);
162                                                     for(j=0;j<noOfCols;j++) {

163                                                             Cell c0=sheet.getCell(j,i);
164                                                             str=c0.getContents().trim();
165                                                             //System.out.println(str);
166                                                     }
167
168                                                     if(info=="fail"){
169                                                     if(sheet.getCell(0,i).getContents().trim()!=""){
170                                                             //checking for null values in excel sheet
171                                                             for(l=0;l<10;l++){
172                                                                     if(l!=3){
173                                                                     if((sheet.getCell(l,i).getContents().trim())!=""&&
(sheet.getCell(l,i).getContents().trim())!=null){
174                                                                             info="fail";
175                                                                             }else{
176                                                                             info=failerr[p];
177                                                                             //con.close();
178                                                                             return am.findForward(info);
179                                                                             }
180                                                                             p++;
181                                                                             }

182                                                                     }p=0;
183
184                                                             //checking duplicate marker name in the database
185                                                             while(rs.next())
186                                                                     {
187                                                                             boolean check=rs.getString(1).equals(sheet
.getCell(0,i).getContents().trim());
188                                                                             if(check==true)
189                                                                             {
190                                                                                     strin=sheet.getCell(0,i).getConten
ts().trim();
191                                                                                     session.setAttribute("str",strin);
192                                                                                     info="markerDup";
193                                                                                     //con.close();
194                                                                                     return am.findForward(info);
195                                                                             }
196                                                                     }rs.beforeFirst();
197
198                                                             //checking duplicate markernames in the excel sheet
199                                                             for(j=i-1;j>0;j--)
200                                                                     {
201                                                                             strin=sheet.getCell(0,i).getContents().tri
```

```
m();
   202                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
data=sheet.getCell(0,j).getContents().trim
();
   203                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
str1=String.valueOf(j+1);
   204                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                session.setAttribute("str1",str1);
   205                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if(strin.equals(sheet.getCell(0,j).getCont
ents().trim()))
   206                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                {
   207                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        info="duplicatemarker";
   208                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        //con.close();
   209                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return am.findForward(info);
   210
   211                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }

   212                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }
   213
   214                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                //checking the program-id in lims_pcr_protocols ta
ble
   215                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                data=sheet.getCell(1,i).getContents().trim();
   216                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                session.setAttribute("prog_id",data);
   217                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rs1=stmt1.executeQuery("select pcr_program_id from
 lims_pcr_protocols where pcr_program_id='"+data+"'");
   218                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if(rs1.next()){

   219                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        info="fail";
   220                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }else{
   221                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        info="programid";
   222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        //con.close();
   223                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return am.findForward(info);
   224                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                }
   225
   226                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if((sheet.getCell(2,i).getContents().trim())!=""&&
(sheet.getCell(2,i).getContents().trim())!=null){
   227                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        info="failcrop";

   228                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        crop=sheet.getCell(2,i).getContents().trim
().toLowerCase();
   229                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                session.setAttribute("crop",crop);
   230                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                while(rs3.next()){
   231                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        crops=rs3.getString(1)+","+crops;
   232                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        boolean check=rs3.getString(1).equ
als(crop);
   233                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if(check==true){
   234                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                info="fail";
   235                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                break;
   236                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        }
   237                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        }
   238                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        session.setAttribute("crops",crops);
```

```
239                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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264                                                                                                                                                                                                                                                                                                                                                
265                                                                                                                                                                                                                                                                                                                                                
```

```
ts().trim().equalsIgnoreCase("none")))){
                                                                                        //System.out.println("Label   ==  "+sheet.
getCell(8,i).getContents().trim()+"  ****   "+sheet.getCell(11,i).getContents().trim()+" &&&");
                                                                                        info="lable";
                                                                                        //con.close();
                                                                                        return am.findForward(info);
                                                                                }
                                                                                if(info=="fail"){
                                                                                        for(int m=0;m<20;m++){
                                                                                                if(m!=2){
                                                                                                        pst.setString(m+1,sheet.ge
tCell(m,i).getContents().trim());
                                                                                                }else{
                                                                                                        //System.out.println("m=2
"+m+1+"  "+sheet.getCell(m,i).getContents().trim().toLowerCase());
                                                                                                        pst.setString(m+1,sheet.ge
tCell(m,i).getContents().trim().toLowerCase());
                                                                                                }
                                                                                        }
                                                                                        pst.addBatch();
                                                                                }
                                                                        }
                                                                }
                                                        }
                                                        }
                                                }
                                                if(info=="fail"){
                                                        int[] val=pst.executeBatch();
                                                        con.commit();
                                                        if(val.length>0){
                                                                info="success";
                                                        }
                                                }
                                                //con.close();

                                        }catch(Exception e)
                                        {
                                                e.printStackTrace();
                                        }       finally{
                                                try{
                                                        if(con!=null) con.close();
                                                         }catch(Exception e){e.printStackTrace();}
                                                }
                                return am.findForward(info);
                        }
                }

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrmarkers/RetriveMarkerAction.java
```

```
     1  //Retrieving marker names and reaction Ids
     2  /*
     3   * Created on Nov 25, 2005
     4   *
     5   * TODO To change the template for this generated file go to
     6   * Window - Preferences - Java - Code Style - Code Templates
     7   */
     8  package org.icrisat.lims.protocolsmarkers.pcrmarkers;
     9
    10  import java.sql.Connection;
    11  import java.sql.ResultSet;
    12  import java.sql.Statement;
    13  import java.util.ArrayList;
    14
    15  import javax.servlet.ServletContext;
    16  import javax.servlet.http.HttpServletRequest;
    17  import javax.servlet.http.HttpServletResponse;
    18  import javax.servlet.http.HttpSession;
    19  import javax.sql.DataSource;
    20
    21  import org.apache.struts.Globals;
    22  import org.apache.struts.action.Action;
    23  import org.apache.struts.action.ActionForm;
    24  import org.apache.struts.action.ActionForward;
    25  import org.apache.struts.action.ActionMapping;
    26  import org.icrisat.lims.common.RetrieveAccessLevelAction;
    27
    28  /**
    29   * @author lswarupa
    30   *
    31   * TODO To change the template for this generated type comment go to
    32   * Window - Preferences - Java - Code Style - Code Templates
    33   */
    34  public class RetriveMarkerAction extends Action{
    35
    36          /* (non-Javadoc)
    37           * @see org.apache.struts.action.Action#execute(org.apache.struts.action.ActionMapping, org.apache.struts.
action.ActionForm, javax.servlet.http.HttpServletRequest, javax.servlet.http.HttpServletResponse)
    38           */
    39          public ActionForward execute(ActionMapping am, ActionForm af,
    40                          HttpServletRequest req, HttpServletResponse res) throws Exception {
    41                  // TODO Auto-generated method stub
    42                  HttpSession session=req.getSession(true);
    43
    44  //              user identification
    45                  if((String)session.getAttribute("user")==null){
    46                          String msg="logout";
```

```
                        return am.findForward(msg);
                }
                //
                Connection con=null;
                ResultSet rs=null;
                Statement st=null;
                ArrayList markernames=new ArrayList();
                try{
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                        st=con.createStatement();
                        String user=(String)session.getAttribute("user");
                        RetrieveAccessLevelAction ral=new RetrieveAccessLevelAction();
                        int al=ral.accessLevel(con, user);
                        session.setAttribute("al", al+"");
                        rs=st.executeQuery("select Marker_Name,PCR_reaction_ID from LIMS_PCR_Markers where user_id
='"+ user +"'");
                        while(rs.next()){
                                markernames.add(rs.getString(1));
                        }
                        }catch(Exception e){System.out.println(e);}
                    finally{
                              try{
                                        if(con!=null) con.close();
                                     }catch(Exception e){System.out.println(e);}
                                    }
                    req.getSession().setAttribute("markernames",markernames);
                return am.findForward("editmarkers");
        }
 }
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrmarkers/MarkerInsertAction.java

```
//Inserting information associated with a single marker into the database
/*
 * Created on Nov 24, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrmarkers;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
```

```

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class MarkerInsertAction extends Action{

        /* (non-Javadoc)
         * @see org.apache.struts.action.Action#execute(org.apache.struts.action.ActionMapping, org.apache.struts.action.ActionForm, javax.servlet.http.HttpServletRequest, javax.servlet.http.HttpServletResponse)
         */
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                HttpSession session=req.getSession(true);
//              user identification
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                //
                if(session!=null)
                {
                          session.removeAttribute("mdel");
                          session.removeAttribute("manaflag");
                        }
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                PreparedStatement pstmt=null;
                try{
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
```

```
    61                          con=datasource.getConnection();
    62
    63                          st=con.createStatement();
    64                          rs=st.executeQuery("select *  from LIMS_PCR_Markers where Marker_Name='"+req.getParameter(
"mana")+"' and PCR_Reaction_ID = '"+req.getParameter("recid")+"' and PCR_program_Id ='"+req.getParameter("prg")+"'");
    65                          if(rs.next())
    66                                  req.getSession().setAttribute("manaflag","true");
    67                          else
    68                          {
    69                                  req.getSession().setAttribute("manaflag","false");
    70                          pstmt=con.prepareStatement("insert into LIMS_PCR_Markers(Marker_Name,PCR_Program_Id,Crop,U
ser_Id,PCR_Reaction_ID,Electrophoresis_Type,Marker_Type,Primer_Sequences_Forward,forward_primer_label,Motif,Primer_Sequenc
es_Reverse,Reverse_Primer_Label,Expected_Product_Size,Primer_Origin,Linkage_Group,Linkage_Group_Origin,Optimised_On_Genoty
pes,Allele_Size_Range,No_of_Alleles,ip_restrictions) values ('"+req.getParameter("mana")+"','"+req.getParameter("prg")+"',
'"+req.getParameter("usercrop")+"','"+req.getSession().getAttribute("user")+"','"+req.getParameter("recid")+"','"+req.getP
arameter("elt")+"','"+req.getParameter("mart")+"','"+req.getParameter("psf")+"','"+req.getParameter("fpl")+"','"+req.getPa
rameter("motif")+"','"+req.getParameter("psr")+"','"+req.getParameter("rpl")+"','" +req.getParameter("prosz")+"','"+req.ge
tParameter("po")+"','"+req.getParameter("link")+"','"+req.getParameter("linkorigin")+"','"+req.getParameter("opg")+"','"+r
eq.getParameter("allelesize")+"','"+req.getParameter("alleleno")+"','"+req.getParameter("ipr")+"')");
    71                          pstmt.execute();
    72                          }
    73                          //if(con!=null)con.close();
    74                      }catch(Exception e){System.out.println(e);}
    75                      finally{
    76                                  try{
    77                                          if(con!=null) con.close();
    78                                   }catch(Exception e){System.out.println(e);}
    79                                  }
    80                  return am.findForward("blank");
    81          }
    82  }
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrmarkers/DeleteListAction.java

```
     1  //Deleting a marker+information associated with it from the Database
     2  /*
     3   * Created on Nov 30, 2006
     4   *
     5   * TODO To change the template for this generated file go to
     6   * Window - Preferences - Java - Code Style - Code Templates
     7   */
     8  package org.icrisat.lims.protocolsmarkers.pcrmarkers;
     9
    10  import java.sql.Connection;
    11  import java.sql.Statement;
    12
    13  import javax.servlet.ServletContext;
    14  import javax.servlet.http.HttpServletRequest;
```

```
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForward;
/**
 * @author GMeenakshi
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class DeleteListAction extends Action{
        public ActionForward execute(ActionMapping mapping,ActionForm form,HttpServletRequest request,HttpServletR
esponse response)throws Exception{

                        HttpSession session=request.getSession(true);
                        //user identification
                        if((String)session.getAttribute("user")==null)
                        {
                                String msg="logout";
                                return mapping.findForward(msg);
                        }
                        if(session!=null)
                        {
                          session.removeAttribute("mdel");
                          session.removeAttribute("manaflag");
                        }
                        Connection con=null;
                        Statement st=null;
                        String mdel="";
                        String mname=session.getAttribute("editmana").toString();
                        try{
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                        st=con.createStatement();
                        int s=st.executeUpdate("delete from lims_pcr_markers where marker_name ='"+mname+"'");
                        //System.out.println("S value:::"+s);
                        if(s==1){
                                mdel="delete";
                        }else
                        {
                                mdel="ndelete";
```

```
                        }
                        session.setAttribute("mdel", mdel);
                        //if(con!=null)con.close();
                }catch(Exception e){}
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return mapping.findForward("deletemark");
        }

}
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrmarkers/OrderAction.java

```
//Retrieving list of markers to place an order for primers
/*
 * Created on Nov 28, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrmarkers;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
```

```
 */
public class OrderAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                //
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                ArrayList order=new ArrayList();
                try{
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                        st=con.createStatement();
                        rs=st.executeQuery("select Marker_Name from LIMS_PCR_Markers where Lower(Crop)='"+req.getP
arameter("crop")+"'");
                        while(rs.next())
                                order.add(rs.getString(1));
                        //if(con!=null)con.close();
                    }catch(Exception e){
                        //System.out.println(e);
                        }finally{
                                     try{
                                              if(con!=null) con.close();
                                        }catch(Exception e){System.out.println(e);}
                                       }
                    req.getSession().setAttribute("orderlist",order);
                return am.findForward("blank");
        }
}
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrmarkers/EditMarkerAction.java

```
//Editing information associated with a single marker
/*
 * Created on Nov 25, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrmarkers;
```

```

import java.sql.Statement;
import java.sql.Connection;
import java.sql.ResultSet;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class EditMarkerAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                //
                Connection con=null;
                ResultSet rs=null;
                Statement st=null;
                String str="";
                try{
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                        st=con.createStatement();
                        String markername=req.getParameter("mana");
                        req.getSession().setAttribute("editmana",markername);
                        rs=st.executeQuery("select * from LIMS_PCR_Markers where Marker_Name='"+markername+"'");
                        rs.next();
                        //if(con!=null)con.close();
```

```
                    }catch(Exception e){System.out.println(e);}
                    finally{
                              try{
                                        if(con!=null) con.close();
                                   }catch(Exception e){System.out.println(e);}
                                 }
                    req.getSession().setAttribute("markerrs",rs);
                    String param=req.getSession().getAttribute("mod").toString();
                    //System.out.println(" the parameter passed is    "+param);
                    if(param.equals("edit")){
                            str="markerdetails";
                         }else if(param.equals("delete")){
                            str="deletemarkerDetails";
                    }
                    return am.findForward(str);
          }
  }
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrmarkers/PCRMarkerAction.java

```
//Retrieving information reg ProgramId and PCR ReactionId for a single marker
/*
 * Created on Nov 24, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrmarkers;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

```

```
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class PCRMarkerAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                HttpSession session=req.getSession(true);
                ActionErrors ae=new ActionErrors();

                //user identification
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }

                Connection con=null;
                Statement st=null;
                Statement st1=null;
                Statement st2=null;
                ResultSet rs=null;
                ResultSet rs1=null;
                ResultSet rs2=null;
                ArrayList programs=new ArrayList();
                ArrayList reactions=new ArrayList();
                String crop="";
                try{

                        String markername=(String)req.getParameter("markername");
                        req.getSession().setAttribute("markername",markername);

                        //establising connection to database
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();
                        crop=req.getParameter("crop").toLowerCase();
                        st=con.createStatement();
                        st1=con.createStatement();
                        st2=con.createStatement();
                        rs=st.executeQuery("select PCR_Program_Id from LIMS_PCR_Protocols where (Lower(Crop)='"+crop+"')");
                        rs1=st1.executeQuery("select PCR_Reaction_Id from LIMS_PCR_Reactors where (Lower(Crop)='"+crop+"')");
                        rs2=st2.executeQuery("select * from LIMS_PCR_Markers where marker_name='"+markername+"'");
                        if(rs2.next()){
```

```
                                //return am.findForward("fail");
                                ae.add("myerrors",new ActionError("marker.already.Exists"));
                                saveErrors(req,ae);
                                //con.close();
                                return(new ActionForward(am.getInput()));
                        }
                        while(rs.next())
                                programs.add(rs.getString(1));
                        while(rs1.next())
                                reactions.add(rs1.getString(1));
                        req.getSession().setAttribute("programs",programs);
                        req.getSession().setAttribute("reactions",reactions);
                        //con.close();
                        session.setAttribute("Mcrop", crop);
                    }catch(Exception e){System.out.println(e);}
                    finally{
                            try{
                                    if(con!=null) con.close();
                             }catch(Exception e){System.out.println(e);}
                            }
                return am.findForward("blank");
        }
}
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrmarkers/CheckAccessLevelAction.java

```
/**
 *
 */
package org.icrisat.lims.protocolsmarkers.pcrmarkers;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.RetrieveAccessLevelAction;

```

```
/**
 * @author psrikalyani
 *
 */
public class CheckAccessLevelAction extends Action{
        String msg="";
        Connection con=null;
        Statement st=null;
        ResultSet rs=null;

        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res) throws Exception {
                //user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                        msg="logout";
                        return am.findForward(msg);
                }
                try{
                        String user=(String)session.getAttribute("user");
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        RetrieveAccessLevelAction ral=new RetrieveAccessLevelAction();
                        int al=ral.accessLevel(con, user);
                        session.setAttribute("al", al+"");

                        msg="four";
                }catch(Exception e){
                        e.printStackTrace();
                }finally{
                        try{
                                if(con!=null) con.close();
                        }catch(Exception e){System.out.println(e);}
                }
                return am.findForward(msg);
        }
}


```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrmarkers/RetriveDetailsAction.java

```
//Retrieving primer pairs to place in the order list
/*
 * Created on Dec 2, 2005
```

```
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrmarkers;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class RetriveDetailsAction extends Action{
        /* (non-Javadoc)
         * @see org.apache.struts.action.Action#execute(org.apache.struts.action.ActionMapping, org.apache.struts.action.ActionForm, javax.servlet.http.HttpServletRequest, javax.servlet.http.HttpServletResponse)
         */
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                //
                String[] markers=req.getParameterValues("mname");
                String markernms="";
                Connection con=null;
```

```
                 ResultSet rs=null;
                 Statement st=null;
                 try{
                         ServletContext context=servlet.getServletContext();
                         DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                         con=datasource.getConnection();

                          st=con.createStatement();
                          for(int i=0;i<markers.length;i++)
                             markernms=markernms+"'"+markers[i]+"'"+",";
                                 markernms=markernms.substring(0,markernms.length()-1);
                         rs=st.executeQuery("select Marker_Name,Forward_primer_label,Reverse_primer_label,Primer_se
quences_forward,Primer_sequences_reverse from LIMS_PCR_Markers where Marker_Name in ("+markernms+")");
                         req.getSession().setAttribute("orderrs",rs);
                         req.getSession().setAttribute("recordcount",String.valueOf(markers.length));
                         //if(con!=null)con.close();
                 }catch(Exception e){System.out.println(e);}
                 finally{
                               try{
                                         if(con!=null) con.close();
                                  }catch(Exception e){System.out.println(e);}
                                 }
                 return am.findForward("details");
         }
 }
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/pcrmarkers/UpdateMarkerAction.java

```
//Inserting updates of marker information
/*
 * Created on Nov 25, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.pcrmarkers;

import java.sql.Connection;
import java.sql.Statement;
import java.sql.ResultSet;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
```

```
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author MeenakshiG
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class UpdateMarkerAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                HttpSession session=req.getSession(true);
                ActionErrors ae=new ActionErrors();
//              user identification
                if((String)session.getAttribute("user")==null){
                    String msg="logout";
                        return am.findForward(msg);
                }
                Connection con=null;
                Statement st=null;
                Statement stmt1=null;
                Statement stmt2=null;
                ResultSet rs1=null;
                Statement stmt3=null;
                ResultSet rs2=null;
                ResultSet rs3=null;
                String message="";
                int count;
                try{
                        //creating connection
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                        st=con.createStatement();
                        stmt1=con.createStatement();
                        stmt2=con.createStatement();
                        stmt3=con.createStatement();
                        rs1=stmt1.executeQuery("select pcr_program_id from lims_pcr_protocols where pcr_program_id
='"+req.getParameter("program_id")+"'");
                        rs2=stmt2.executeQuery("select pcr_reaction_id from lims_pcr_reactors where pcr_reaction_i
d='"+req.getParameter("reaction_id")+"'");
```

```
                        rs3=stmt3.executeQuery("select marker_name from LIMS_PCR_Markers");
                        if(!(rs2.next())){
                                        ae.add("myerror",new ActionError("prompt.reaction.id"));
                                        saveErrors(req,ae);
                                        //con.close();
                                        return (new ActionForward(am.getInput()));
                                        }
                        if(!(rs1.next())){
                                        ae.add("myerrors",new ActionError("prompt.program.Id"));
                                        saveErrors(req,ae);
                                        //con.close();
                                        return (new ActionForward(am.getInput()));

                                        }
                        if(!(((String)req.getSession().getAttribute("editmana")).equalsIgnoreCase(req.getParameter
("marker_name"))){
                        while(rs3.next()){
                                if(rs3.getString(1).equalsIgnoreCase(req.getParameter("marker_name"))){

                                                ae.add("myerror",new ActionError("prompt.marker.dup"));
                                                saveErrors(req,ae);
                                                //con.close();
                                                return (new ActionForward(am.getInput()));

                                                }
                                        }
                                }
                        //inserting marker info in database
                                count=st.executeUpdate("UPDATE LIMS_PCR_Markers SET Marker_Name ='"+req.getParamet
er("marker_name")+"',pcr_program_id='"+req.getParameter("program_id")+"',crop='"+req.getParameter("crops").toLowerCase()+"
',pcr_reaction_id='"+req.getParameter("reaction_id")+"',electrophoresis_type='"+req.getParameter("electrophoresis")+"',mar
ker_type='"+req.getParameter("marker_type")+"',primer_sequences_forward='"+req.getParameter("primer_sequence")+"',forward_
primer_label='"+req.getParameter("forward_primer")+"',motif='"+req.getParameter("motifs")+"',primer_sequences_reverse='"+r
eq.getParameter("reverse_primer_sequence")+"',reverse_primer_label='"+req.getParameter("reverse_primer")+"',expected_produ
ct_size='"+req.getParameter("product_size")+"',allele_size_range='"+req.getParameter("allele_size")+"',no_of_alleles='"+re
q.getParameter("no_of_alleles")+"',Primer_origin = '"+req.getParameter("porigin")+"',linkage_group_origin='"+req.getParame
ter("linkorigin")+"',Linkage_group = '"+req.getParameter("link")+"',Optimised_on_genotypes= '"+req.getParameter("opgen")+"
', ip_restrictions='"+req.getParameter("ipr")+"' where Marker_Name='"+req.getSession().getAttribute("editmana")+"'");
                                if(count>0)
                                {
                                        message="update";
                                        req.getSession().setAttribute("update","true");
                                }
                                //con.close();
                        }catch(Exception e){System.out.println(e);}
                        finally{
                              try{
                                        if(con!=null) con.close();
```

```
                                 }catch(Exception e){System.out.println(e);}
                                }
                 return am.findForward(message);
         }
 }
```

./WEB-INF/src/org/icrisat/lims/protocolsmarkers/extractionprotocols/ExtractionProtocolAction.java

```
//Inserting Extraction protocols into database
/*
 * Created on Nov 8, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.protocolsmarkers.extractionprotocols;

import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.InputStream;
import java.io.OutputStream;
import java.sql.Connection;
import javax.sql.DataSource;
import javax.servlet.ServletContext;
import org.apache.struts.Globals;

import java.sql.ResultSet;
import java.sql.Statement;
import java.text.DateFormat;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;


import org.apache.struts.action.Action;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.upload.FormFile;
import org.icrisat.lims.common.UploadExcel;
import org.apache.struts.action.DynaActionForm;

/**
 * @author psrikalyani
```

```
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class ExtractionProtocolAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {
                HttpSession session = req.getSession(true);
                //              user identification
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                //
                ActionErrors ae=new ActionErrors();
                String userid=(String)req.getSession().getAttribute("user");
                Connection con = null;
                ResultSet rs = null;
                Statement stmt = null;  Statement stmt1 = null;
                InputStream stream=null;
                OutputStream bos=null;
                // GenotypeXmlFile is a user defined class which creates file in the server.
                UploadExcel Gxf = null;
                String fileName="";
                String xmlFileName = "";
                String target="";
                String check = "";
        //      String protocol = (String)req.getSession().getAttribute("prot");
            DynaActionForm form = (DynaActionForm)af;
            String protocol = form.get("txtpname").toString();
            FormFile file = (FormFile)form.get("file");
            // creating a file in server for uploading form client.
        stream=file.getInputStream();
            String fname1=file.getFileName();
            String foldername=session.getServletContext().getRealPath("//")+"/UploadFiles//";
            if(!new File(foldername).exists())
                    new File(foldername).mkdir();
            fileName=session.getServletContext().getRealPath("//")+"/UploadFiles//"+file.getFileName();
            session.setAttribute("filen",fileName);
            Gxf=new UploadExcel();
            check=Gxf.createFile(stream,fileName);
            String fileadd="fileaDDedtoserver";
            session.setAttribute("filea",fileadd);
            try{
                    //retreiving System Date
                        java.util.Date theDate = new java.util.Date();
                java.text.DateFormat df1 = DateFormat.getDateTimeInstance(DateFormat.SHORT, DateFormat.SHORT);
```

```
                        String qdate = df1.format(theDate);

                        String protocoltype="Extraction";
                        String tecorman="";
                        tecorman="Manual";
                    ServletContext context=servlet.getServletContext();
                    DataSource dataSource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                    con=dataSource.getConnection();
                stmt = con.createStatement();
                stmt1 = con.createStatement();
                rs=stmt1.executeQuery("select * from dna_protocols where protocol_name='"+protocol+"'");
                        if(rs.next())
                        {
                                ae.add("error",new ActionError("protocol.Already.exists"));
                                saveErrors(req,ae);
                                //con.close();
                                return (new ActionForward(am.getInput()));
                        }
                        else{
                        String str="insert into DNA_Protocols values('" + protocol + "','"+protocoltype+"','" + te
corman + "','" + fname1 + "','" + userid + "','" + qdate + "')";
                        stmt.executeUpdate(str);
                        }
                        InputStream in = new FileInputStream(fileName);
                        OutputStream out = new FileOutputStream(session.getServletContext().getRealPath("//")+"/Pr
otocols/"+fname1);
                        byte[] buf = new byte[1024];
                        int len;
                        while ((len=in.read(buf))>0){
                                out.write(buf, 0, len);
                        }
                        in.close();
                        out.close();
                        //con.close();
                }catch(Exception e){
                                System.out.println("Exception in ExtractionProtocolAction : "+e.toString());

                                }
                finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println("Exception in finally block of ExtractionP
rotocolAction : "+e);}
                                }
                    check=Gxf.deleteFile(fileName);
                    //System.out.println("file deleted from server"+ check);
                return am.findForward("protupl");
            }
```

```
   132
   133  }
./WEB-INF/src/org/icrisat/lims/reports/PCRPlateDetailsAction.java


     1  //Retrieving PCR plate details to generate a report
     2  /*
     3   * Created on Jan 19, 2006
     4   *
     5   * TODO To change the template for this generated file go to
     6   * Window - Preferences - Java - Code Style - Code Templates
     7   */
     8  package org.icrisat.lims.reports;
     9  import java.sql.Connection;
    10  import java.sql.ResultSet;
    11  import java.sql.Statement;
    12  import java.sql.PreparedStatement;
    13
    14  import javax.servlet.ServletContext;
    15  import javax.servlet.http.HttpServletRequest;
    16  import javax.servlet.http.HttpServletResponse;
    17  import javax.servlet.http.HttpSession;
    18  import javax.sql.DataSource;
    19
    20
    21  import org.apache.struts.Globals;
    22  import org.apache.struts.action.Action;
    23  import org.apache.struts.action.ActionForm;
    24  import org.apache.struts.action.ActionForward;
    25  import org.apache.struts.action.ActionMapping;
    26  import org.apache.struts.action.DynaActionForm;
    27  /**
    28   * @author lswarupa
    29   *
    30   * TODO To change the template for this generated type comment go to
    31   * Window - Preferences - Java - Code Style - Code Templates
    32   */
    33  public class PCRPlateDetailsAction extends Action{
    34          public ActionForward execute(ActionMapping am, ActionForm af,
    35                          HttpServletRequest req, HttpServletResponse res) throws Exception {
    36                  // TODO Auto-generated method stub
    37  //              user identification
    38                  HttpSession session=req.getSession(true);
    39                  if((String)session.getAttribute("user")==null){
    40                           String msg="logout";
    41                          return am.findForward(msg);
    42                  }
    43                  if(session!=null){
```

```
                        session.removeAttribute("PCR_Display_Plate_Type");
                        session.removeAttribute("idst");
                        session.removeAttribute("genors");
                }
                Connection con=null;
                Statement pcrst=null;
                ResultSet pcrrs=null;
                Statement genost=null;
                ResultSet genors=null;
                PreparedStatement idst=null;
                //System.out.println("hello");

                DynaActionForm pcrfrm = (DynaActionForm)af;
                String pcrplate1=((String)pcrfrm.get("pcrplate"));

                try{
                        //database connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                        pcrst=con.createStatement();
                        genost=con.createStatement();
                        if(session.getAttribute("reportgen").equals("no"))
                                pcrrs=pcrst.executeQuery("select PCR_Plate_Id,Plate_Type from PCR_Tracking where P
CR_Plate_Id='"+pcrplate1+"' and upsc_id='"+session.getAttribute("upsc")+"'");
                        else
                                pcrrs=pcrst.executeQuery("select PCR_Plate_Id,Plate_Type from PCR_Tracking where P
CR_Plate_Id='"+pcrplate1+"' and upsc_id like '%"+session.getAttribute("usercid")+"%'");
                        genors=genost.executeQuery("select pcr_plate_id,lims_id,col_id,row_id,pcr_plate_controls,g
enotype_id,upsc_id from PCR_Tracking_Well_Controls where (PCR_Plate_Id='"+pcrplate1+"') order by Row_Id,Col_Id");

                        pcrrs.next();
                        session.setAttribute("PCR_Display_Plate_Type",pcrrs.getString(2));

                        idst=con.prepareStatement("select Genotype_Id from Genotype_Master where LIMS_Id=?");
                        session.setAttribute("idst",idst);
                        session.setAttribute("genors",genors);
                }catch(Exception e){
                         System.out.println(e);
                }
                finally{
                     try{
                                if(con!=null) con.close();
                                 pcrrs.close();
                                 pcrst.close();
                         }catch(Exception e){System.out.println(e);}
                        }
```

```

                return am.findForward("displaypcrwell");
        }
}
```

./WEB-INF/src/org/icrisat/lims/reports/MarkerAssignedPCRPlateAction.java

```
/**
 * Retrieves and displays Marker assigned PCR Plates
 */
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.RetrieveProjectsAction;

/**
 * @author psrikalyani
 *
 */
public class MarkerAssignedPCRPlateAction extends Action{

        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                //user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                        String msg="logout";
                       return am.findForward(msg);
                }
                String str="";
                Connection con=null;
                Statement st=null;
```

```
                Statement stmtm=null;
                Statement stPltType=null;
                ResultSet rs=null;
                ResultSet rsPltType=null;
                ArrayList mpcrList = new ArrayList();
                String values="";
                String markers="";
                String strPlateType="";
                String plateID="";
                String op="";
                int cc=0;
                int ch=65;
                String option="";
                String user="";
                try{
                        //database  connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        stmtm=con.createStatement();
                        stPltType=con.createStatement();
                        if((session.getAttribute("queryType").equals("userdata"))||(session.getAttribute("queryTyp
e").equals("onlydata")))
                                user=(String)session.getAttribute("usercid");
                        else
                                user=(String)session.getAttribute("upsc");
                        ArrayList projects =new ArrayList();
                        if(req.getParameter("param").equals("tree")){
                                if(session.getAttribute("reportgen").equals("reports")){
                                        if(session.getAttribute("queryType").equals("userdata")){
                                                op=req.getParameter("op");
                                                if(op==null){
                                                        option="one";
                                                        session.setAttribute("option", option);
                                                        RetrieveProjectsAction rps=new RetrieveProjectsAction();
                                                        projects=rps.RetriveProjectList((String)session.getAttribu
te("usercid"), req, con);
                                                        req.getSession().setAttribute("projects",projects);
                                                }else{
                                                        option="two";
                                                        session.setAttribute("option", option);
                                                        rs=st.executeQuery("select distinct pcr_marker.pcr_plate_i
d from pcr_marker inner join pcr_tracking on pcr_tracking.pcr_plate_id=pcr_marker.base_plate where pcr_tracking.upsc_id li
ke '"+req.getParameter("project")+"%"+req.getSession().getAttribute("usercid")+"'");
                                                        while(rs.next()){
                                                                mpcrList.add(rs.getString(1));
```

```
                                                        }
                                                        session.setAttribute("mpcrList",mpcrList);

                                                }
                                        }else{
                                                rs=st.executeQuery("select distinct pcr_marker.pcr_plate_id from p
cr_marker inner join pcr_tracking on pcr_tracking.pcr_plate_id=pcr_marker.base_plate where pcr_tracking.upsc_id like '%"+u
ser+"'");
                                                while(rs.next()){
                                                        mpcrList.add(rs.getString(1));
                                                }
                                                session.setAttribute("mpcrList",mpcrList);
                                        }
                                }else{
                                        rs=st.executeQuery("select distinct pcr_marker.pcr_plate_id from pcr_marke
r inner join pcr_tracking on pcr_tracking.pcr_plate_id=pcr_marker.base_plate where pcr_tracking.upsc_id ='"+user+"'");
                                        while(rs.next()){
                                                mpcrList.add(rs.getString(1));
                                        }
                                        session.setAttribute("mpcrList",mpcrList);
                                }
                                str="first";
                        }else{

                                String[] strPid=req.getParameterValues("MarkerAssignedPCR");
                                for(int i=0;i<strPid.length;i++){
                                        plateID=plateID+"'" +strPid[i]+"'" +",";
                                }
                                session.setAttribute("plateCount", strPid.length+"");
                                rs = st.executeQuery("SELECT DISTINCT pcr_tracking_well.row_id,pcr_tracking_well.c
ol_id,genotype_master.genotype_id,pcr_tracking_well.lims_id,dna_extraction_plate_controls.lims_id AS pcr_plate_controls,pc
r_marker.pcr_plate_id FROM pcr_marker JOIN pcr_tracking_well ON pcr_marker.base_plate = pcr_tracking_well.pcr_plate_id JOI
N genotype_master ON pcr_tracking_well.lims_id = genotype_master.lims_id LEFT JOIN dna_extraction_plate_controls ON pcr_tr
acking_well.lims_id = dna_extraction_plate_controls.lims_id JOIN pcr_tracking ON pcr_tracking_well.pcr_plate_id = pcr_trac
king.pcr_plate_id where pcr_marker.upsc_id like '%"+user+"' and pcr_marker.pcr_plate_id in ("+ plateID.substring(0,plateID
.length()-1) +") order BY pcr_marker.pcr_plate_id,pcr_tracking_well.row_id,pcr_tracking_well.col_id,  pcr_tracking_well.li
ms_id, genotype_master.genotype_id, dna_extraction_plate_controls.lims_id");
                                while(rs.next()){
                                        values = values+ rs.getString(1) + "~''!" + rs.getInt(2) + "~''!" + rs.get
String(3)+ "~''!" + rs.getString(4)+ "~''!" + rs.getString(5)+ "~''!" + rs.getString(6)+"''~!";

                                }
                                rsPltType=stPltType.executeQuery("select distinct pcr_tracking.Plate_Type,pcr_mark
er.pcr_plate_id from pcr_tracking join pcr_marker on pcr_marker.base_plate=pcr_tracking.pcr_plate_id where pcr_marker.pcr_
plate_id in ("+ plateID.substring(0,plateID.length()-1) +") and pcr_marker.upsc_id like '%" + user + "' order by pcr_marke
r.pcr_plate_id");
                                while(rsPltType.next()){
                                        strPlateType=strPlateType+rsPltType.getString(2)+"~!~"+rsPltType.getString
```

```
(1)+",,";
                                    }
                                    ResultSet rsm=stmtm.executeQuery("SELECT distinct pcr_marker_well.marker_assigned,
 pcr_marker_well.Part_Of_Plate,pcr_marker_well.PCR_Plate_Id , LIMS_PCR_Markers.forward_primer_label, LIMS_PCR_Markers.reve
rse_primer_label FROM lims_pcr_markers RIGHT OUTER JOIN pcr_marker_well ON LIMS_PCR_Markers.Marker_Name = pcr_marker_well.
marker_assigned WHERE pcr_marker_well.PCR_Plate_Id in ("+ plateID.substring(0,plateID.length()-1) +") order by pcr_marker_
well.pcr_plate_id,pcr_marker_well.Part_Of_Plate");
                                    //markers dye retrieval
                                    while(rsm.next()){
                                            String strName = rsm.getString(1).toString();
                                            if(strName.equals("null")){
                                                    markers=markers+strName+"~‘‘!"+rsm.getString(2)+"~‘‘!"+rsm.getStri
ng(3)+"~‘‘!"+ null+"‘‘~!";
                                            }else{
                                                    if(!(strName.startsWith("M13")||strName.startsWith("m13"))){

                                                            if(!rsm.getString(4).equals("")){

                                                                    markers=markers+rsm.getString(1)+"~‘‘!"+rsm.getStr
ing(2)+"~‘‘!"+rsm.getString(3)+"~‘‘!"+rsm.getString(4)+"‘‘~!";
                                                            }else if(!rsm.getString(5).equals("")){

                                                                    markers=markers+rsm.getString(1)+"~‘‘!"+rsm.getStr
ing(2)+"~‘‘!"+rsm.getString(3)+"~‘‘!"+rsm.getString(5)+"‘‘~!";
                                                            }else if((rsm.getString(5).equals(""))&& (rsm.getString(5)
.equals"")){
                                                                    markers=markers+rsm.getString(1)+"~‘‘!"+rsm.getStr
ing(2)+"~‘‘!"+rsm.getString(3)+"~‘‘!"+null+"‘‘~!";
                                                            }
                                                    }else{
                                                            String[] strN = strName.split("-;-");

                                                            markers=markers+strN[0]+"~‘‘!"+rsm.getString(2)+"~‘‘!"+rsm
.getString(3)+"~‘‘!"+ strN[1]+"‘‘~!";
                                                    }
                                            }
                                    }

                                    session.setAttribute("ptype",strPlateType.trim());
                                    session.setAttribute("markers", markers);
                                    session.setAttribute("pltList",values);

                                    str="second";
                            }
                    }catch(Exception e){
                            e.printStackTrace();
                    }finally{
                          try{
```

```
                                if(con!=null) con.close();
                            }catch(Exception e){System.out.println(e);}
                           }
                    return am.findForward(str);
            }
    }
```

./WEB-INF/src/org/icrisat/lims/reports/PooledPlateDisplayAction.java

```
/**
 *
 */
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 * @author GMeenakshi
 *
 */
public class PooledPlateDisplayAction extends Action {
        public ActionForward execute(ActionMapping map,ActionForm af,HttpServletRequest req,HttpServletResponse re
s)throws Exception {
                HttpSession session=req.getSession(true);
                String str="";
                if((String)session.getAttribute("user")==null){
                        str="logout";
                        return map.findForward(str);
                }

                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
```

```
                Statement st1=null;
                ResultSet rs1=null;
                String retrieveData="";
                String Normalized_plates="";
                String plate_id="";
                try{
                        ServletContext context=servlet.getServletContext();
                        DataSource dataSource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        st1=con.createStatement();
                        DynaActionForm pidfrm = (DynaActionForm)af;
                        plate_id=((String)pidfrm.get("pcrplate"));
                        rs=st.executeQuery("select Distinct(pooled_plate_id) ,normalized_plates from dna_pooling w
here pooled_plate_id='"+plate_id+"'");
                        while (rs.next()){
                                Normalized_plates=rs.getString(2);
                        }
                        rs1=st1.executeQuery("select col_id,row_id,pooled_dna from dna_pooling where pooled_plate_
id ='"+plate_id+"' order by row_id,col_id");
                        while(rs1.next()){
                                //!~!  ,  ~!~
                                retrieveData=retrieveData+rs1.getInt("col_id")+"~!~"+rs1.getString("row_id")+"~!~"
+rs1.getString("pooled_dna")+"!~!";
                        }
                        session.setAttribute("Normalized_plates", Normalized_plates);
                        session.setAttribute("retrievedData", retrieveData);
                        //session.setAttribute("rowWiseData", rowWiseData);
                }catch(Exception e){
                        e.printStackTrace();
                }finally{
                        try{
                                if(con!=null) con.close();
                        }catch(Exception e){ e.printStackTrace();}
                }

                str="report";
                return map.findForward(str);
        }
}
```

./WEB-INF/src/org/icrisat/lims/reports/ExtractedPlateIdAction.java

```
//Retrieving details to display in the report of Extracted plates
/*
 * Created on Oct 10, 2005
 *
 * TODO To change the template for this generated file go to
```

```
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.RetrieveProjectsAction;
/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class ExtractedPlateIdAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {
        HttpSession session = req.getSession(true);
//      user identification

                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("epltid");
                }
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                Vector v=new Vector();
                try{
                        //database connection
```

```
53                          ServletContext context = servlet.getServletContext();
54                          DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
55                          con=dataSource.getConnection();
56                          String op;String option;
57                          st=con.createStatement();
58                          //retrieve DNA Plate ids
59                          if(session.getAttribute("reportgen").equals("no")){
60                                  rs=st.executeQuery("select distinct(DNA_Plate_Id) from DNA_Extraction_Tracking whe
re upsc_id ='"+req.getSession().getAttribute("upsc")+"'order by DNA_Plate_Id");
61                                  while(rs.next()){
62                                          String ExtractedPlate_id=rs.getString(1);
63                                          v.add(ExtractedPlate_id);
64                                  }
65                                  req.getSession().setAttribute("epltid",v);
66
67                          }else{
68                                  if(session.getAttribute("queryType").equals("userdata")){
69                                          ArrayList projects =new ArrayList();
70                                          op=req.getParameter("op");
71                                          if(op==null||op==""){
72                                                  option="one";
73                                                  session.setAttribute("option", option);
74                                                  RetrieveProjectsAction rp=new RetrieveProjectsAction();
75                                                  projects=rp.RetriveProjectList(session.getAttribute("usercid").toS
tring(),req,con);
76                                                  req.getSession().setAttribute("projects",projects);

77                                          }else{
78                                                  option="two";
79                                                  session.setAttribute("option", option);
80                                                  rs=st.executeQuery("select distinct(DNA_Plate_Id) from DNA_Extract
ion_Tracking where upsc_id like '"+req.getParameter("project")+"%"+req.getSession().getAttribute("usercid")+"%'");
81                                                  while(rs.next()){
82                                                          String ExtractedPlate_id=rs.getString(1);
83                                                          v.add(ExtractedPlate_id);

84                                                  }
85                                                  req.getSession().setAttribute("epltid",v);

86                                          }
87                                  }else{
88                                          rs=st.executeQuery("select distinct(DNA_Plate_Id) from DNA_Extraction_Trac
king where upsc_id like '%"+req.getSession().getAttribute("usercid")+"%'order by DNA_Plate_Id");
89                                          while(rs.next()){
90                                                  String ExtractedPlate_id=rs.getString(1);
91                                                  v.add(ExtractedPlate_id);
92                                          }
93                                          req.getSession().setAttribute("epltid",v);
```

```
                                }
                        }
                        }catch(Exception e){
                                System.out.println(e);
                        }
                        finally{
                              try{
                                      if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                  return am.findForward("msg");
          }
  }
```

./WEB-INF/src/org/icrisat/lims/reports/ProgramDetailsAction.java

```
/*
 * Created on Oct 28, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.ResultSetMetaData;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
```

```
 */
public class ProgramDetailsAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("resultset");
                        session.removeAttribute("metadata");
                }

                //
                DynaActionForm pcrdfrm = (DynaActionForm)af;
                String program1=((String)pcrdfrm.get("program"));
                Connection con=null;
                  Statement st=null;
                  ResultSet rs=null;
                  ResultSetMetaData rsmd=null;
                  try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                          st=con.createStatement();
                         rs=st.executeQuery("select * from LIMS_PCR_Protocols where PCR_program_Id='"+program1+"'"
);
                         rsmd=rs.getMetaData();
                         req.getSession().setAttribute("resultset",rs);
                             req.getSession().setAttribute("metadata",rsmd);
                      }catch(Exception e){System.out.println(e);}
                      finally{
                               try{
                                         if(con!=null) con.close();
                                    }catch(Exception e){System.out.println(e);}
                                  }
                     // con.close();
                return am.findForward("programdetails");
        }
}
```

./WEB-INF/src/org/icrisat/lims/reports/AllelobinRetrievalAction.java

```
//Retrieve list of study names for which allelobin outputs are available
```

```
/*
 * Created on Apr 14, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import java.sql.Connection;
import java.sql.Statement;
import java.sql.ResultSet;
import java.util.ArrayList;
import javax.servlet.ServletContext;
import javax.sql.DataSource;

import org.apache.struts.Globals;

import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 * @author RRajalakshmi
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class AllelobinRetrievalAction extends Action{

        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                DynaActionForm albfrm = (DynaActionForm)af;
                String user = req.getSession().getAttribute("user").toString();

                Connection con = null;
```

```
                //for reports under the workflow
                if(session.getAttribute("reportgen").equals("no")){
                        String str=((String)albfrm.get("stname"));

                        String crop = req.getSession().getAttribute("crop").toString();
                        String folderName=str+"_"+crop+"_"+user;
                        req.getSession().setAttribute("studyname",str);
                        req.getSession().setAttribute("fname",folderName);

                }else{

                                try{

                                        ResultSet rs = null;
                                        Statement stmt = null;

                                        //database connection
                                        ServletContext context = servlet.getServletContext();
                                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                                        con=dataSource.getConnection();


                                        stmt = con.createStatement();
                                        ArrayList studynames=new ArrayList();
                                        ArrayList path=new ArrayList();
                                        ArrayList arrylist=new ArrayList();
                                        ArrayList folderlist=new ArrayList();
                                        String folderName="";

                                        if(session.getAttribute("queryType").equals("userdata")){
                                                rs = stmt.executeQuery("SELECT distinct user_psc.study_name,user_psc.crop_name FROM user_psc inner join lims_allelobin_output_status on user_psc.upsc_id=lims_allelobin_output_status.upsc_id WHERE user_psc.user_id = '"+session.getAttribute("usercid")+"'");
                                                while(rs.next()){
                                                        studynames.add(rs.getObject("study_name")+"_"+rs.getObject("crop_name"));
                                                        path.add(rs.getObject("study_name"));
                                                }
                                        }else{
                                                rs = stmt.executeQuery("SELECT distinct user_psc.study_name FROM user_psc inner join lims_allelobin_output_status on user_psc.upsc_id=lims_allelobin_output_status.upsc_id WHERE user_psc.user_id = '"+req.getSession().getAttribute("user")+"' and user_psc.crop_name ='"+session.getAttribute("reportcrop")+"'");
                                                while(rs.next()){
                                                        studynames.add(rs.getObject("study_name"));

                                                }
                                        }
```

```
 91
 92
 93                                         String crop = req.getSession().getAttribute("reportcrop").toString();
 94                                         String ePath="";
 95                                         for(int i=0;i<studynames.size();i++){
 96                                                 if(session.getAttribute("queryType").equals("userdata")){
 97                                                         user=(String)session.getAttribute("usercid");
 98                                                         folderName=studynames.get(i)+"_"+user;
 99
100                                                 }else{
101                                                         folderName=studynames.get(i)+"_"+crop+"_"+user;
102                                                 }
103                                                 folderlist.add(folderName);
104                                                 if(session.getAttribute("queryType").equals("userdata")){
105                                                         //System.out.println("&&&&&&&&&   "+studynames.get(i));
106                                                         String path1=studynames.get(i)+"";
107                                                         String[] path2=path1.split("_");
108                                                         ePath=path2[0];
109                                                         arrylist.add(ePath);
110                                                 }else{
111                                                         arrylist.add(studynames.get(i));
112                                                 }
113                                         }
114                                         req.getSession().setAttribute("studyname",arrylist);
115                                         req.getSession().setAttribute("fname",folderlist);
116                                         //req.getSession().setAttribute("path",path);
117
118                                 }catch(Exception e){
119                                         System.out.println("Exception in AllelobinRetrievalAction : "+e);
120                                 }finally{
121                                         try{
122                                                 if(con!=null){con.close();}
123                                         }catch(Exception e){
124                                                 System.out.println("Exception in finally block of AllelobinRetriev
alAction : "+e);
125                                         }
126
127                                 }
128                         }
129
130                 return am.findForward("blank");
131         }
132 }
133
```

./WEB-INF/src/org/icrisat/lims/reports/PooledPlateIdAction.java

```
  1  package org.icrisat.lims.reports;
```

```

/**
 * @author GMeenakshi
 *
 */
import javax.sql.DataSource;
import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.RetrieveProjectsAction;

import java.sql.*;
import java.util.ArrayList;


public class PooledPlateIdAction extends Action {
        public ActionForward execute(ActionMapping map,ActionForm af,HttpServletRequest req,HttpServletResponse re
s)throws Exception {
                HttpSession session=req.getSession(true);
                String str="";
                if((String)session.getAttribute("user")==null){
                        str="logout";
                        return map.findForward(str);
                }

                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                Statement stmt=null;
                ResultSet rsP=null;
                ArrayList Plates=null;
                String op="";
                String option="";
                ArrayList projects =new ArrayList();
                String user="";
                String project="";
                try{
                        ServletContext context=servlet.getServletContext();
                        DataSource dataSource=(DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
```

```
49                          stmt=con.createStatement();
50                          Plates=new ArrayList();
51                          String pooling="";
52
53                          if(session.getAttribute("reportgen").equals("no")){
54                                  //********** Display pooled plate under usual reports ********************//
55                                  user=(String)session.getAttribute("upsc");
56                                  rs=st.executeQuery("select dna_pooling from user_psc where upsc_id ='"+user+"'");
57                                  while (rs.next()){
58                                          pooling=rs.getString(1);
59                                  }
60                                  session.setAttribute("sesPooling",pooling);
61                                  rs=st.executeQuery("select distinct(pooled_plate_id) from dna_pooling where upsc_i
d='"+session.getAttribute("upsc")+"'");
62                                  while(rs.next()){
63                                          Plates.add(rs.getString(1));
64                                  }
65                                  session.setAttribute("pooledplates", Plates);
66                          }else{
67                                  if(session.getAttribute("queryType").equals("userdata")){
68                                          //********** under Supervisors view depending on Project ***************//
69                                          op=req.getParameter("op");
70                                          if(op==null){
71                                                  option="one";
72                                                  session.setAttribute("option", option);
73                                                  RetrieveProjectsAction rps=new RetrieveProjectsAction();
74                                                  projects=rps.RetriveProjectList((String)session.getAttribute("user
cid"), req, con);
75                                                  req.getSession().setAttribute("projects",projects);

76                                          }else{
77                                                  option="two";
78                                                  session.setAttribute("option", option);
79                                                  user=(String)session.getAttribute("usercid");
80                                                  project=req.getParameter("project");
81                                                  rs=st.executeQuery("select dna_pooling from user_psc where upsc_id
 like '"+project+"%"+user+"%'");
82                                                  while (rs.next()){
83                                                          pooling=rs.getString(1);
84                                                  }
85                                                  session.setAttribute("sesPooling",pooling);
86                                                  if((pooling!=null)&&(pooling.equalsIgnoreCase("yes"))){
87                                                          rs=st.executeQuery("select distinct(pooled_plate_id) from
dna_pooling where upsc_id like '"+project+"%"+user+"%'");
88                                                          while(rs.next()){
89                                                                  Plates.add(rs.getString(1));

90                                                          }
```

```
                                                                req.getSession().setattribute("ppltid",Plates);
                                                        }
                                                }
                                        }else{
                                                //**********************   Single user data of query database specific to crop   ***************//
                                                user=(String)session.getAttribute("usercid");
                                                rs=st.executeQuery("select dna_pooling from user_psc where upsc_id like '%"+user+"%'");
                                                while (rs.next()){
                                                        pooling=rs.getString(1);
                                                }
                                                session.setAttribute("sesPooling",pooling);
                                                System.out.println("Pooling ="+pooling);
                                                if((pooling!=null)&&(pooling.equalsIgnoreCase("yes"))){
                                                        rsP=stmt.executeQuery("select distinct(pooled_plate_id) from dna_pooling where upsc_id like '%"+req.getSession().getAttribute("usercid")+"%'");
                                                        while(rsP.next()){
                                                                Plates.add(rsP.getString(1));
                                                        }
                                                        session.setAttribute("pooledplates", Plates);
                                                }
                                        }
                                }
                                str="msg";
                        }catch(Exception e){
                                e.printStackTrace();
                        }
                        finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                        return map.findForward(str);
                }

        }
```

./WEB-INF/src/org/icrisat/lims/reports/ABIRunPlateAction.java

```
/**
 *
 */
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
```

```
 9  import java.util.ArrayList;
10  import java.util.Vector;
11
12  import javax.servlet.ServletContext;
13  import javax.servlet.http.HttpServletRequest;
14  import javax.servlet.http.HttpServletResponse;
15  import javax.servlet.http.HttpSession;
16  import javax.sql.DataSource;
17
18  import org.apache.struts.Globals;
19  import org.apache.struts.action.Action;
20  import org.apache.struts.action.ActionForm;
21  import org.apache.struts.action.ActionForward;
22  import org.apache.struts.action.ActionMapping;
23  import org.icrisat.lims.common.RetrieveProjectsAction;
24
25  /**
26   * @author psrikalyani
27   *
28   */
29  public class ABIRunPlateAction extends Action{
30
31          public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
32                  // TODO Auto-generated method stub
33                  //              user identification
34                  HttpSession session=req.getSession(true);
35                  if((String)session.getAttribute("user")==null){
36                          String msg="logout";
37                          return am.findForward(msg);
38                  }
39                  String str="";
40                  Connection con=null;
41                  Statement st=null;
42                  ResultSet rs=null;
43                  String plate_id="";
44                  ArrayList mpcrList = new ArrayList();
45                  String op="";
46                  String option="";
47                  String user="";
48                  Vector v=new Vector();
49                  try{
50
51                          //database  connection
52                          ServletContext context = servlet.getServletContext();
53                          DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
54                          con=dataSource.getConnection();
55                          st=con.createStatement();
```

```
Statement stmt=con.createStatement();
if((session.getAttribute("queryType").equals("userdata"))||(session.getAttribute("queryTyp
e").equals("onlydata")))
        user=(String)session.getAttribute("usercid");
else
        user=(String)session.getAttribute("upsc");
ArrayList projects = new ArrayList();
if(req.getParameter("param").equals("tree")){
        if(session.getAttribute("reportgen").equals("reports")){
                if(session.getAttribute("queryType").equals("userdata")){
                        op=req.getParameter("op");
                        if(op==null){
                                option="one";
                                session.setAttribute("option", option);
                                RetrieveProjectsAction rps=new RetrieveProjectsAction();
                                projects=rps.RetriveProjectList((String)session.getAttribu
te("usercid"), req, con);
                                req.getSession().setAttribute("projects",projects);
                        }else{
                                option="two";
                                session.setAttribute("option", option);
                                rs=st.executeQuery("select distinct run_plate_id from run_
tracking where upsc_id like '"+req.getParameter("project")+"%"+user+"'");
                                while(rs.next()){
                                        mpcrList.add(rs.getString(1));

                                }
                                session.setAttribute("mpcrList",mpcrList);

                        }
                }else{
                        rs=st.executeQuery("select distinct run_plate_id from run_tracking
 where upsc_id like'%"+user+"'");
                        while(rs.next()){
                                mpcrList.add(rs.getString(1));
                        }
                        session.setAttribute("mpcrList",mpcrList);

                }
        }else{
                rs=st.executeQuery("select distinct run_plate_id from run_tracking where u
psc_id like'%"+user+"'");
                while(rs.next()){
                        mpcrList.add(rs.getString(1));
                }
                //System.out.println("mpcrList="+mpcrList);
                session.setAttribute("mpcrList",mpcrList);
        }
```

```

                                str="first";
                        }else{
                                String ptype="";
                                String values="";

                                //String plate_id=req.getParameter("ABIRunPIDs");
                                String[] strPid=req.getParameterValues("ABIRunPIDs");
                                for(int i=0;i<strPid.length;i++){
                                        plate_id=plate_id+"'" +strPid[i]+"'" +",";
                                }
                                //System.out.println("plate_id="+plate_id);
                                session.setAttribute("plateCount", strPid.length+"");
                                //System.out.println("select run_plate_id,plate_type from run_tracking where run_p
late_id in ("+ plate_id.substring(0,plate_id.length()-1) +")");
                                ResultSet rs1=stmt.executeQuery("select run_plate_id,plate_type from run_tracking
where run_plate_id in ("+ plate_id.substring(0,plate_id.length()-1) +") order by run_plate_id");
                                while(rs1.next()){
                                        ptype=ptype+rs1.getString(1)+"!~!"+rs1.getString(2)+";;";
                                }
                                session.setAttribute("ptype", ptype);
                                //System.out.println("ptype="+ptype);
                                rs=st.executeQuery("select run_tracking_well.run_plate_id, run_tracking_well.col_i
d,run_tracking_well.row_id, genotype_master.genotype_id, run_tracking_well.markers_assigned from run_tracking_well join ge
notype_master on run_tracking_well.lims_id=genotype_master.lims_id where run_tracking_well.run_plate_id in ("+ plate_id.su
bstring(0,plate_id.length()-1) +") order by run_tracking_well.run_plate_id,run_tracking_well.row_id, run_tracking_well.col
_id");
                                while(rs.next()){
                                        values=values+rs.getString(4)+"!~!"+rs.getString(3)+"!~!"+rs.getString(2)+
"!~!"+rs.getString(5)+"!~!"+rs.getString(1)+"''~!";
                                }
                                //System.out.println("values="+values);
                                session.setAttribute("samples", values);
                                session.setAttribute("plate", plate_id);
                                str="second";
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return am.findForward(str);
        }


 }
```

./WEB-INF/src/org/icrisat/lims/reports/RetrievalPathAction.java

```
//Retriving file requested by user
/*
 * Created on Aug 4, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;

import java.util.ArrayList;
import java.sql.*;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.servlet.ServletContext;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import java.io.File;


/**
 * @author tpraveenreddy
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class RetrievalPathAction extends Action {
        public ActionForward execute(ActionMapping mapping, ActionForm form, HttpServletRequest request, HttpServl
etResponse response) throws Exception {
                String studyname1="";
                String crop1="";
                String typeoffile="";
                String path1="";
                ArrayList aryLst=null;
                ArrayList studynames=null;
                ArrayList studyarr=null;
                String msg="";
                Connection con = null;
```

```
                ResultSet rs = null;
                Statement stmt = null;
        try{
                HttpSession session=request.getSession(true);
                String uname=(String) session.getAttribute("user");
                // user identification
                if((String)session.getAttribute("user")==null){

                        msg="logout";
                        return mapping.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("sname");
                        session.removeAttribute("crops");
                        session.removeAttribute("typeoffile");
                        session.removeAttribute("pathlist");
                }
                //


                DynaActionForm rfrm=(DynaActionForm)form;
                //crop1=((String)rfrm.get("retcrops"));
                crop1=(String)session.getAttribute("crop");
                typeoffile=((String)rfrm.get("typeoffile"));

                if (typeoffile.equals("ABI/Genscan"))
                        path1="UploadFolder//ABIRawFiles";  //path1="UploadFolder\\ABIRawFiles";
                else if (typeoffile.equals("Genotyper"))
                        path1="UploadFolder//GenotyperFiles";  //path1="UploadFolder\\GenotyperFiles";
                else if (typeoffile.equals("Gel Image"))
                        path1="GELImages";
                else if (typeoffile.equals("Plate Record"))
                        path1="PLTFiles";
                else if (typeoffile.equals("GWL"))
                        path1="GWLFiles";

                //String realpath=(String)session.getAttribute("realpath");


                if(session.getAttribute("reportgen").equals("no")){
                        //studyname1=((String)rfrm.get("retstudy"));
                        studyname1=(String)session.getAttribute("study");
                        File dir = new File(session.getServletContext().getRealPath("//")+"//"+ path1 + "//" + stu
dyname1 + "_" + crop1 + "_" + uname);
                        if (!dir.exists()){
                                request.getSession().setAttribute("studyname1",null);
                                request.getSession().setAttribute("crop1",null);
                                request.getSession().setAttribute("typeoffile",null);
```

```
                                request.getSession().setAttribute("pathlist",null);
                                return mapping.findForward("filedisplay");
                        }

                        String[] files = dir.list();
                        aryLst=new ArrayList();
                        String ab="";
                        if (typeoffile.equals("Plate Record")){
                                for(int i = 0; i < files.length; i++){
                                        String fileType = files[i].substring(files[i].indexOf(".")+1);
                                        if(!fileType.equals("gwl")){
                                                ab="<a href=’"+ path1 + "/" + studyname1 + "_" + crop1 + "_" + una
me+"/"+files[i]+"’ target=new>"+files[i]+"</a><br>";
                                                aryLst.add(ab);
                                        }
                                }
                        }else  if (typeoffile.equals("GWL")){
                                for(int i = 0; i < files.length; i++){
                                        String fileType = files[i].substring(files[i].indexOf(".")+1);
                                        if(fileType.equals("gwl")){
                                                ab="<a href=’"+ path1 + "/" + studyname1 + "_" + crop1 + "_" + una
me+"/"+files[i]+"’ target=new>"+files[i]+"</a><br>";
                                                aryLst.add(ab);
                                        }
                                }
                        }else{
                                for(int i = 0; i < files.length; i++){
                                        ab="<a href=’"+ path1 + "/" + studyname1 + "_" + crop1 + "_" + uname+"/"+f
iles[i]+"’ target=new>"+files[i]+"</a><br>";
                                        aryLst.add(ab);
                                }
                        }
                        request.getSession().setAttribute("sname",studyname1);
                        request.getSession().setAttribute("crops",crop1);
                        request.getSession().setAttribute("typeoffile",typeoffile);
                        request.getSession().setAttribute("pathlist",aryLst);
                }else{

                        studynames=new ArrayList();
                        aryLst=new ArrayList();
                        studyarr=new ArrayList();

                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                stmt = con.createStatement();
                if(session.getAttribute("queryType").equals("userdata")){
                        rs = stmt.executeQuery("SELECT distinct study_name,crop_name FROM user_psc WHERE user_id =
```

```
 '"+session.getAttribute("usercid")+"' and project_name ='"+request.getParameter("project")+"'");
                        while(rs.next()){
                                studynames.add(rs.getObject("study_name")+"_"+rs.getObject("crop_name"));

                                }
                        String proj=request.getParameter("project");
                        session.setAttribute("proj", proj);
                }else{
                        rs = stmt.executeQuery("SELECT distinct study_name FROM user_psc WHERE user_id = '"+uname+
"' and crop_name ='"+session.getAttribute("reportcrop")+"'");
                        while(rs.next()){
                                studynames.add(rs.getObject("study_name"));
                        }
                }
                        //Object studynamess[]= studynames.toArray();

                if(session.getAttribute("queryType").equals("userdata")){
                        uname=(String)request.getSession().getAttribute("usercid");
                        for(int j=0;j<studynames.size();j++){
                                File dir = new File(session.getServletContext().getRealPath("//")+"//"+ pa
th1 + "//" + studynames.get(j) + "_" + uname);
                                //System.out.println("Directory="+dir);
                                if (!dir.exists()){
                                        //System.out.println("-------------Doesnot exists----------------
-");
                                        request.getSession().setAttribute("typeoffile",null);
                                        request.getSession().setAttribute("pathlist",null);
                                        //return mapping.findForward("filedisplay");
                                }else{
                                        //System.out.println("*********Exists************");
                                        studyarr.add(studynames.get(j));
                                }
                                }
                                for(int j=0;j<studyarr.size();j++){
                                File dir = new File(session.getServletContext().getRealPath("//")+"//"+ path1 + "/
/" + studyarr.get(j) + "_" + uname);
                                String[] files = dir.list();
                                String ab="";
                                if (typeoffile.equals("Plate Record")){
                                        for(int i = 0; i < files.length; i++){
                                                String fileType = files[i].substring(files[i].indexOf(".")+1);
                                                if(!fileType.equals("gwl")){
                                                        ab="<a href='"+ path1 + "/" + studyarr.get(j) + "_" + unam
e+"/"+files[i]+"' target=new>"+files[i]+"</a><br>";
                                                        aryLst.add(ab);
                                                }
                                        }
                                }else if (typeoffile.equals("GWL")){
```

```
                                        for(int i = 0; i < files.length; i++){
                                                String fileType = files[i].substring(files[i].indexOf(".")+1);
                                                if(fileType.equals("gwl")){
                                                        ab="<a href='"+ path1 + "/" + studyarr.get(j) + "_" + unam
e+"/"+files[i]+"' target=new>"+files[i]+"</a><br>";
                                                        aryLst.add(ab);
                                                }
                                        }
                                }else{
                                        for(int i = 0; i < files.length; i++){
                                                ab="<a href='"+ path1 + "/" + studyarr.get(j) + "_" + uname+"/"+fi
les[i]+"' target=new>"+files[i]+"</a><br>";
                                                aryLst.add(ab);
                                        }
                                }
                            }

                                request.getSession().setAttribute("pathlist",aryLst);
                                request.getSession().setAttribute("typeoffile",typeoffile);


                  }else{
                                for(int j=0;j<studynames.size();j++){
                                        File dir = new File(session.getServletContext().getRealPath("//")+"//"+ pa
th1 + "//" + studynames.get(j) + "_" + session.getAttribute("reportcrop") + "_" + uname);
                                        //System.out.println("Directory="+dir);
                                        if (!dir.exists()){

                                                request.getSession().setAttribute("typeoffile",null);
                                                request.getSession().setAttribute("pathlist",null);
                                                //return mapping.findForward("filedisplay");
                                        }else{
                                                studyarr.add(studynames.get(j));
                                        }
                                }
                                for(int j=0;j<studyarr.size();j++){
                                File dir = new File(session.getServletContext().getRealPath("//")+"//"+ path1 + "/
/" + studyarr.get(j) + "_" + session.getAttribute("reportcrop") + "_" + uname);
                                String[] files = dir.list();
                                String ab="";
                                if (typeoffile.equals("Plate Record")){
                                        for(int i = 0; i < files.length; i++){
                                                String fileType = files[i].substring(files[i].indexOf(".")+1);
                                                if(!fileType.equals("gwl")){
                                                        ab="<a href='"+ path1 + "/" + studyarr.get(j) + "_" + sess
ion.getAttribute("reportcrop") + "_" + uname+"/"+files[i]+"' target=new>"+files[i]+"</a><br>";
                                                        aryLst.add(ab);
                                                }
```

```
                                        }
                                }else if (typeoffile.equals("GWL")){
                                        for(int i = 0; i < files.length; i++){
                                                String fileType = files[i].substring(files[i].indexOf(".")+1);
                                                if(fileType.equals("gwl")){
                                                        ab="<a href=’"+ path1 + "/" + studyarr.get(j) + "_" + sess
ion.getAttribute("reportcrop") + "_" + uname+"/"+files[i]+"’ target=new>"+files[i]+"</a><br>";
                                                        aryLst.add(ab);
                                                }
                                        }
                                }else{
                                        for(int i = 0; i < files.length; i++){
                                                ab="<a href=’"+ path1 + "/" + studyarr.get(j) + "_" + session.getA
ttribute("reportcrop") + "_" + uname+"/"+files[i]+"’ target=new>"+files[i]+"</a><br>";
                                                aryLst.add(ab);
                                        }
                                }
                            }

                                request.getSession().setAttribute("pathlist",aryLst);
                                request.getSession().setAttribute("typeoffile",typeoffile);
                        }

                        }
                }
                catch (Exception e){System.out.println("Exception:"+e);}finally{
                        if(con!=null)con.close();
                }
                return mapping.findForward("filedisplay");
                }
        }
./WEB-INF/src/org/icrisat/lims/reports/NormalizedPlateDisplayAction.java


/**
 *
 */
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;
```

```

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import org.icrisat.lims.common.RoundFloatValuesAction;

/**
 * @author GMeenakshi
 *
 */
public class NormalizedPlateDisplayAction extends Action {
        public ActionForward execute(ActionMapping map,ActionForm af,HttpServletRequest req,HttpServletResponse re
s)throws Exception {
                HttpSession session=req.getSession(true);
                String str="";
                if((String)session.getAttribute("user")==null){
                        str="logout";
                        return map.findForward(str);
                }

                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                Statement concst=null;
                ResultSet conrs=null;
                Statement detailsst=null;
                ResultSet detailsrs=null;
                String Details="";
                String pid="ss";
                String Normalized_pid="";
                String upsc_id="";
                String reagent="dd";
                String Query="";
                double conc=0;
                double totvol=0;
                double dnavol=0,reagentvol=0;
                String failed="false";
                String plateDetails="";
                RoundFloatValuesAction round=new RoundFloatValuesAction();

                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource) context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con = dataSource.getConnection();

```

```
                        DynaActionForm form=(DynaActionForm)af;

                        pid=form.get("pcrplate").toString();
                        Normalized_pid=pid;
                        //upsc_id=(String)session.getAttribute("upsc");
                        String pooling=(String)session.getAttribute("sesPooling");
                        st=con.createStatement();
                        //if(upsc_id.toLowerCase().contains("tilling")){
                        if(pooling.equalsIgnoreCase("yes")){
                                Query="select dna_plate_id,dilution_concentration,dilution_reagent,total_volume fr
om dna_dilution where normalized_plate_id='"+pid+"'";
                        }else{
                                Query="select dna_plate_id,dilution_concentration,dilution_reagent,total_volume fr
om dna_dilution where dna_plate_id='"+pid+"'";
                        }
                        rs=st.executeQuery(Query);
                        while (rs.next()){
                                pid=rs.getString(1);
                                //conc=rs.getFloat(2);
                                conc=rs.getDouble(2);
                                reagent=rs.getString(3);
                                totvol=rs.getInt(4);
                        }
                        detailsst=con.createStatement();
                        detailsrs=detailsst.executeQuery("SELECT Genotype_Master.Genotype_Id,DNA_Extraction_Well.R
ow_Id, DNA_Extraction_Well.Col_Id FROM Genotype_Master inner join DNA_Extraction_Well on DNA_Extraction_Well.lims_id=Genot
ype_Master.lims_id where DNA_Extraction_Well.dna_plate_id='"+pid+"' order by  DNA_Extraction_Well.Row_Id,DNA_Extraction_We
ll.Col_Id");
                        concst=con.createStatement();
                        conrs=concst.executeQuery("select DNA_Concentration from DNA_Quantification_Trackingdetail
s where DNA_Plate_Id = '"+pid+"' order by Row_Id,Col_Id");
                        while(detailsrs.next()){
                                conrs.next();
                                dnavol =round.roundTwo((conc*totvol)/conrs.getFloat(1));
                                reagentvol=round.roundTwo(totvol-dnavol);
                                if(reagentvol<0){
                                        failed="true";
                                }else{
                                        failed="false";
                                }
                                Details=Details+detailsrs.getString(2)+"~!~"+detailsrs.getInt(3)+"~!~"+detailsrs.g
etString(1)+"~!~"+failed+"~!~"+reagentvol+"~!~"+String.valueOf(conrs.getFloat(1))+"!~!";
                        }
                        plateDetails=pid+"!~!"+reagent+"!~!"+String.valueOf(conc)+"!~!"+String.valueOf(totvol)+"!~
!"+Normalized_pid;
                        session.setAttribute("PlateDetails", plateDetails);
                        session.setAttribute("Details", Details);
                }catch(Exception e){
```

```
102                         e.printStackTrace();
103                 }finally{
104                         try{
105                                 if(con!=null){
106                                         con.close();
107                                 }
108                         }catch(Exception e){e.printStackTrace();}
109                 }
110                 str="report";
111                 return map.findForward(str);
112         }
113
114 }
```

./WEB-INF/src/org/icrisat/lims/reports/ExtractedPlateDisplayAction.java

```
  1 //Retrieval of extraction plate details to display
  2 /*
  3  * Created on Oct 10, 2005
  4  *
  5  * TODO To change the template for this generated file go to
  6  * Window - Preferences - Java - Code Style - Code Templates
  7  */
  8 package org.icrisat.lims.reports;
  9 import java.sql.Connection;
 10 import java.sql.ResultSet;
 11 import java.sql.Statement;
 12
 13
 14
 15 import javax.servlet.ServletContext;
 16 import javax.servlet.http.HttpServletRequest;
 17 import javax.servlet.http.HttpServletResponse;
 18 import javax.servlet.http.HttpSession;
 19 import javax.sql.DataSource;
 20
 21
 22 import org.apache.struts.Globals;
 23 import org.apache.struts.action.*;
 24 /**
 25  * @author psrikalyani
 26  *
 27  * TODO To change the template for this generated type comment go to
 28  * Window - Preferences - Java - Code Style - Code Templates
 29  */
 30 public class ExtractedPlateDisplayAction extends Action{
 31         public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
 res)throws Exception
```

```
                {
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }

                if(session!=null){
                        session.removeAttribute("result1");
                        session.removeAttribute("controlsA");
                }
                String samples="";
                String details="";
                DynaActionForm pidfrm = (DynaActionForm)af;
                String plate_id=((String)pidfrm.get("pid"));
                String[] strPid=req.getParameterValues("pid");
                String pid="";
                for(int i=0;i<strPid.length;i++){
                        pid=pid+"'" +strPid[i]+"'" +",";
                }
                session.setAttribute("plateCount", strPid.length+"");
                Connection con=null;
                Statement stmt=null;Statement stmtcont=null;
                ResultSet rs=null;ResultSet rscont=null;
                         try{
                                ServletContext context = servlet.getServletContext();
                                DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                                con=dataSource.getConnection();
                        stmt = con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE, ResultSet.CONCUR_READ_ONLY);
                        stmtcont =con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE, ResultSet.CONCUR_READ_ONLY)
;

                        rs=stmt.executeQuery("SELECT DISTINCT Genotype_Master.Experiment_Name, DNA_Extraction_Trac
king.Plate_Type,DNA_Extraction_Well.dna_plate_id FROM Genotype_Master INNER JOIN DNA_Extraction_Well ON (Genotype_Master.L
IMS_Id = DNA_Extraction_Well.LIMS_Id) INNER JOIN DNA_Extraction_Tracking ON (DNA_Extraction_Well.DNA_Plate_Id = DNA_Extrac
tion_Tracking.DNA_Plate_Id) INNER JOIN Experiment_Master ON (Genotype_Master.Experiment_Name = Experiment_Master.Experimen
t_Name) WHERE (DNA_Extraction_Tracking.DNA_Plate_Id in ("+ pid.substring(0,pid.length()-1) +")) ORDER BY DNA_Extraction_We
ll.dna_plate_id");
                        while(rs.next()){
                                details=details+rs.getString(1)+"!~!"+rs.getString(2)+"!~!"+rs.getString(3)+";;";
                        }
                                session.setAttribute("result1",details);
                                rscont=stmtcont.executeQuery("SELECT DNA_Extraction_Well_Controls.dna_plate_id, DN
A_Extraction_Well_Controls.lims_id, DNA_Extraction_Well_Controls.genotype_id, DNA_Extraction_Well_Controls.col_id, DNA_Ext
raction_Well_Controls.row_id, DNA_Extraction_Well_Controls.dna_plate_controls FROM DNA_Extraction_Well_Controls WHERE (dna
_plate_id in ("+ pid.substring(0,pid.length()-1) +")) order by dna_plate_id,row_id,col_id");
                                while(rscont.next()){
```

```
                                        samples=samples+rscont.getString(1)+"~!~"+rscont.getString(2)+"~!~"+rscont
.getString(3)+"~!~"+rscont.getInt(4)+"~!~"+rscont.getString(5)+"~!~"+rscont.getString(6)+",;,";
                                }
                                session.setAttribute("controlsA", rscont);
                                session.setAttribute("samples", samples);
                            }catch(Exception e){
                                System.out.println(e);
                            }
                            finally{
                                try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }

                           return am.findForward("extp");
                    }


    }
./WEB-INF/src/org/icrisat/lims/reports/NormalizedPlateIdAction.java


 /**
  *
  */
 package org.icrisat.lims.reports;

 import java.sql.Connection;
 import java.sql.ResultSet;
 import java.sql.Statement;
 import java.util.ArrayList;

 import javax.servlet.ServletContext;
 import javax.servlet.http.HttpServletRequest;
 import javax.servlet.http.HttpServletResponse;
 import javax.servlet.http.HttpSession;
 import javax.sql.DataSource;

 import org.apache.struts.Globals;
 import org.apache.struts.action.Action;
 import org.apache.struts.action.ActionForm;
 import org.apache.struts.action.ActionForward;
 import org.apache.struts.action.ActionMapping;
 import org.icrisat.lims.common.RetrieveProjectsAction;

 /**
  * @author GMeenakshi
  *
```

```
 */
public class NormalizedPlateIdAction extends Action {
        public ActionForward execute(ActionMapping map,ActionForm af,HttpServletRequest req,HttpServletResponse res)throws Exception {
                HttpSession session=req.getSession(true);
                String str="";
                if((String)session.getAttribute("user")==null){
                        str="logout";
                        return map.findForward(str);
                }
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                Statement stmt=null;
                ResultSet rsP=null;
                ArrayList Plates=null;
                String Query="";
                String user="";
                String pooling="";
                String op="";
                String option="";
                ArrayList projects =new ArrayList();
                String project="";
                try{
                        // creating connection to database
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource) context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con = dataSource.getConnection();
                        st=con.createStatement();
                        stmt=con.createStatement();
                        Plates=new ArrayList();
                        if(session.getAttribute("reportgen").equals("no")){
                                user=(String)session.getAttribute("upsc");
                                rs=st.executeQuery("select dna_pooling from user_psc where upsc_id =’"+user+"’");
                                while (rs.next()){
                                        pooling=rs.getString(1);
                                }
                                session.setAttribute("sesPooling",pooling);
                                if((pooling!=null)&&(pooling.equalsIgnoreCase("yes"))){
                                        Query="select normalized_plate_id from dna_dilution where upsc_id = ’"+user+"’";
                                }else if((pooling!=null)&&(pooling.equalsIgnoreCase("no"))){
                                        Query="select dna_plate_id from dna_dilution where upsc_id = ’"+user+"’";
                                }
                                rs=st.executeQuery(Query);
                                while(rs.next()){
                                        Plates.add(rs.getString(1));
                                }
```

```
                                        session.setAttribute("Normalized_Plates", Plates);
                                }else{
                                        if(session.getAttribute("queryType").equals("userdata")){
                                                //*************under Supervisors view depending on Project*************//
                                                op=req.getParameter("op");
                                                if(op==null){
                                                        option="one";
                                                        session.setAttribute("option", option);
                                                        RetrieveProjectsAction rps=new RetrieveProjectsAction();
                                                        projects=rps.RetriveProjectList((String)session.getAttribute("user
cid"), req, con);
                                                        req.getSession().setAttribute("projects",projects);

                                                }else{
                                                        option="two";
                                                        session.setAttribute("option", option);
                                                        user=(String)session.getAttribute("usercid");
                                                        project=req.getParameter("project");
                                                        rs=st.executeQuery("select dna_pooling from user_psc where upsc_id
 like '"+project+"%"+user+"%'");
                                                        while (rs.next()){
                                                                pooling=rs.getString(1);
                                                        }
                                                        session.setAttribute("sesPooling",pooling);
                                                        if((pooling!=null)&&(pooling.equalsIgnoreCase("yes"))){
                                                                rsP=stmt.executeQuery("select distinct(normalized_plate_id
) from dna_dilution where upsc_id like '"+project+"%"+user+"%'");
                                                        }else{
                                                                rsP=stmt.executeQuery("select distinct(dna_plate_id) from
dna_dilution where upsc_id like '"+project+"%"+user+"%'");
                                                        }
                                                        while(rsP.next()){
                                                                Plates.add(rsP.getString(1));

                                                         }
                                                        req.getSession().setAttribute("Normalized_Plates",Plates);

                                                }
                                        }else{
                                                //**************Single user data of query database specific to crop*******
*********//
                                                user=(String)session.getAttribute("usercid");
                                                rs=st.executeQuery("select dna_pooling from user_psc where upsc_id like '%
"+user+"%'");
                                                while (rs.next()){
                                                        pooling=rs.getString(1);
                                                }
                                                session.setAttribute("sesPooling",pooling);
```

```
                                        if((pooling!=null)&&(pooling.equalsIgnoreCase("yes"))){
                                                rsP=stmt.executeQuery("select distinct(normalized_plate_id) from d
na_dilution where upsc_id like '%"+user+"%'");
                                        }else if((pooling!=null)&&(pooling.equalsIgnoreCase("no"))){
                                                rsP=stmt.executeQuery("select distinct(dna_plate_id) from dna_dilu
tion where upsc_id like '%"+user+"%'");
                                        }
                                        while(rsP.next()){
                                                Plates.add(rsP.getString(1));
                                        }
                                        session.setAttribute("Normalized_Plates", Plates);
                                }
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }finally{
                        try{
                                if(con!=null){
                                        con.close();
                                }
                        }catch(Exception e){e.printStackTrace();}
                }
                str="msg";

                return map.findForward(str);
        }

}
```

./WEB-INF/src/org/icrisat/lims/reports/MarkerListingAction.java

```
//Listing all markers available for a selected crop under reports
/*
 * Created on Nov 9, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
```

```
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class MarkerListingAction extends Action {

        /* (non-Javadoc)
         * @see org.apache.struts.action.Action#execute(org.apache.struts.action.ActionMapping, org.apache.struts.action.ActionForm, javax.servlet.http.HttpServletRequest, javax.servlet.http.HttpServletResponse)
         */
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("markercount");
                        session.removeAttribute("markerlist");
                }
                //
                DynaActionForm pcrfrm = (DynaActionForm)af;
                String crop1=((String)pcrfrm.get("crop"));

                Connection con=null;
                ResultSet rs=null;
                Statement st=null;
                ArrayList list=new ArrayList();
                int count=0;
                try{
                        //database connection
                        ServletContext context = servlet.getServletContext();
```

```
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        //retrieve marker details
                        if(session.getAttribute("reportgen").equals("no"))
                                rs=st.executeQuery("select Marker_Name,Forward_primer_label,Reverse_primer_label f
rom LIMS_PCR_Markers where (Lower(Crop)='"+crop1.toLowerCase()+"') order by Marker_Name asc");
                        else
                                rs=st.executeQuery("select Marker_Name,Forward_primer_label,Reverse_primer_label f
rom LIMS_PCR_Markers where (Lower(Crop)='"+session.getAttribute("reportcrop").toString().toLowerCase()+"') order by Marker
_Name asc");
                        while(rs.next()){
                                count++;
                                if(rs.getString(2)!=null)
                                        list.add(rs.getString(1)+"_"+rs.getString(2));
                                else if(rs.getString(3)!=null)
                                        list.add(rs.getString(1)+"_"+rs.getString(3));
                                else
                                        list.add(rs.getString(1));
                            }
                         req.getSession().setAttribute("markercount",String.valueOf(count));
                          req.getSession().setAttribute("markerlist",list);

                    }catch(Exception e){System.out.println(e);}
                    finally{
                              try{
                                        if(con!=null) con.close();
                                        if(rs!=null) rs.close();
                                        if(st!=null) st.close();
                                     }catch(Exception e){System.out.println(e);}
                                    }
                  return am.findForward("blank");
          }
  }
```

./WEB-INF/src/org/icrisat/lims/reports/StorageLocationAction.java

```
 1  //Forward storage details for a selected plateId.
 2  /*
 3   * Created on Oct 9, 2006
 4   *
 5   * TODO To change the template for this generated file go to
 6   * Window - Preferences - Java - Code Style - Code Templates
 7   */
 8  package org.icrisat.lims.reports;
 9
10  import java.sql.Connection;
11  import java.sql.ResultSet;
```

```
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.DynaActionForm;


import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author pprasad
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class StorageLocationAction extends Action {

        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                HttpSession session = req.getSession(true);
                // user identification
                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                        return am.findForward(msg);
                }
                DynaActionForm pidfrm = (DynaActionForm)af;
                String displaypid=((String)pidfrm.get("displaypid"));
                String viewplate_id=null;
                String viewlab_no=null;
                String viewcoldroom_no=null;
                String viewfridge_acc_no=null;
                String viewfridge_freezer_no=null;
                String viewtype_of_compartment=null;

                Connection con=null;
                Statement st=null;
                ResultSet rs=null;

```

```


        try{
                ServletContext context = servlet.getServletContext();
                DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                con=dataSource.getConnection();
                st=con.createStatement();
                if(session.getAttribute("reportgen").equals("no"))
                        rs=st.executeQuery("SELECT * from dna_storage where dna_storage.upsc_id ='"+req.getSession
().getAttribute("upsc")+"' and dna_plate_id='"+displaypid+"'");
                else
                        rs=st.executeQuery("SELECT * from dna_storage where dna_storage.upsc_id like '%"+req.getSe
ssion().getAttribute("usercid")+"%' and dna_plate_id='"+displaypid+"'");
                while(rs.next())
                                {
                                        viewplate_id=rs.getString(1);
                                        viewlab_no=rs.getString(2);
                                        viewcoldroom_no=rs.getString(3);
                                        viewfridge_acc_no=rs.getString(4);
                                    viewfridge_freezer_no=rs.getString(5);
                                        viewtype_of_compartment=rs.getString(6);

                                }

                }catch(Exception e){System.out.println(e);}
                finally{
                        if(con!=null)con.close();
                }
                 req.getSession().setAttribute("viewplate_id",viewplate_id);
                 req.getSession().setAttribute("viewlab_no",viewlab_no);
                 req.getSession().setAttribute("viewcoldroom_no",viewcoldroom_no);
                 req.getSession().setAttribute("viewfridge_acc_no",viewfridge_acc_no);
                 req.getSession().setAttribute("viewfridge_freezer_no",viewfridge_freezer_no);
                 req.getSession().setAttribute("viewtype_of_compartment",viewtype_of_compartment);
                 return am.findForward("Storagedisplayview");


                }

}
```

./WEB-INF/src/org/icrisat/lims/reports/RetrieveStatusAction.java

```
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
```

```
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

public class RetrieveStatusAction extends Action{
        Connection con=null;
        Statement exptst=null;
        ResultSet exptrs=null;
        ResultSet genoCrs=null;
        ResultSet markCrs=null;
        Statement genoCst=null;
        Statement markCst=null;
        Statement projSt=null;
        ResultSet projrs=null;
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                // TODO Auto-generated method stub
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("projlist");
                        session.removeAttribute("studylist");
                        session.removeAttribute("explist");
                        session.removeAttribute("gmcount");
                }

                try{
                        String upsc="";
                        String gcount="";int mcount=0;
                        ArrayList upscList=new ArrayList();
                        String user=(String)session.getAttribute("user");

                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
```

```
                        exptst=con.createStatement();
                        //studyst=con.createStatement();
                        projSt=con.createStatement();
                        genoCst=con.createStatement();
                        markCst=con.createStatement();

                        String outputString="";
                        String upscIds="";
                        //System.out.println("select upsc_id,project_name,study_name,crop_name from user_psc where user_id='"+user+"'");
                        projrs=projSt.executeQuery("select upsc_id,project_name,study_name,crop_name from user_psc where user_id='"+user+"'");
                        while (projrs.next()){
                                outputString=outputString+projrs.getString(2)+"~!~"+projrs.getString(3)+"~!~"+projrs.getString(4)+"!!~~";
                                upscIds=upscIds+projrs.getString(1)+"@!@";
                                //System.out.println(upscIds);
                        }
                        String[] splitoutputString=outputString.split("!!~~");
                        String[]Splitupsc=upscIds.split("@!@");
                        String finaloutputString="";
                        int countExperiments=0;
                        for(int p=0;p<Splitupsc.length;p++){
                                //System.out.println("select distinct experiment_name from experiment_master where upsc_id='"+Splitupsc[p]+"'");
                                exptrs=exptst.executeQuery("select distinct experiment_name from experiment_master where upsc_id='"+Splitupsc[p]+"'");
                                finaloutputString=finaloutputString+splitoutputString[p]+"~!~";
                                countExperiments=0;
                                while(exptrs.next()){
                                        countExperiments++;
                                        finaloutputString=finaloutputString+exptrs.getString(1)+"!~!";
                                        upsc=Splitupsc[p]+"%%%"+exptrs.getString(1);
                                        upscList.add(upsc);
                                }
                                if(countExperiments==0){
                                        finaloutputString=finaloutputString+"No Experiments";
                                }else{
                                        finaloutputString=finaloutputString.substring(0, finaloutputString.length()-3);
                                }
                                finaloutputString=finaloutputString+"!~!~";
                        }


                        //retrieving count of genotypes & markers under a perticular study
                        for(int e=0;e<upscList.size();e++){
                                String uid=upscList.get(e).toString();
```

```
 95                                 String[] upscid=uid.split("%%%");
 96                                 genoCrs=genoCst.executeQuery("SELECT COUNT(genotype_master.genotype_id) AS genocou
nt FROM genotype_master where genotype_master.upsc_id='"+upscid[0]+"' and genotype_master.experiment_name='"+upscid[1]+"'"
);
 97                                 while(genoCrs.next()){
 98                                         gcount=genoCrs.getString(1);
 99                                 }
100                                 markCrs=markCst.executeQuery("SELECT COUNT(marker_assigned) AS markercount FROM ma
rkers_count where experiment_name='"+upscid[1]+"'");
101                                 while(markCrs.next()){
102                                         mcount=markCrs.getInt(1);
103                                 }
104                                 String gmcount=upscid[1]+"%&%"+gcount+"%&%"+mcount;
105                                 if((finaloutputString.contains(upscid[1]+"!~!"))||(finaloutputString.contains(upsc
id[1]+"!~!~")) ){
106                                         finaloutputString=finaloutputString.replace(upscid[1]+"!~!", gmcount+"!~!"
);
107                                 }
108                         }
109                         session.setAttribute("projlist", finaloutputString);
110
111                 }catch(Exception e){
112                         System.out.println(e.toString());
113                 }
114                 finally{
115                       try{
116                                 if(con!=null) con.close();
117                          }catch(Exception e){System.out.println(e);}
118                         }
119                 return am.findForward("str");
120         }
121 }./WEB-INF/src/org/icrisat/lims/reports/MarkerDisplayAction.java
```

```
  1 //Retrieves details to populate the report on multiple markers
  2 /*
  3  * Created on Nov 9, 2005
  4  *
  5  * TODO To change the template for this generated file go to
  6  * Window - Preferences - Java - Code Style - Code Templates
  7  */
  8 package org.icrisat.lims.reports;
  9
 10 import java.sql.Connection;
 11 import java.sql.ResultSet;
 12 import java.sql.ResultSetMetaData;
 13 import java.sql.Statement;
 14
```

```
import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class MarkerDisplayAction extends Action{

        /* (non-Javadoc)
         * @see org.apache.struts.action.Action#execute(org.apache.struts.action.ActionMapping, org.apache.struts.action.ActionForm, javax.servlet.http.HttpServletRequest, javax.servlet.http.HttpServletResponse)
         */
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("pcrrs");
                        session.removeAttribute("pcrrsmd");
                }
                //
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                ResultSetMetaData rsmd=null;
                String [] markerlist=req.getParameterValues("list");
                String markernms="";

                for(int i=0;i<markerlist.length;i++){
                        String marker="";
                        if(markerlist[i].indexOf("_")>0)
```

```
                            //marker=markerlist[i].substring(0,markerlist[i].indexOf("_"));
                                  marker=markerlist[i].substring(0,markerlist[i].lastIndexOf("_"));
                          else
                                  marker=markerlist[i];
                                          markernms=markernms+"'"+marker+"'"+",";
                    }
                markernms=markernms.substring(0,markernms.length()-1);
                try{
                    /*String realpath=(String)session.getAttribute("realpath");
                            con=new SQLDAOFactory().createCon(realpath);*/
                    ServletContext context = servlet.getServletContext();
                            DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                            con=dataSource.getConnection();
                    st=con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE,ResultSet.CONCUR_READ_ONLY);
                    rs=st.executeQuery("select * from LIMS_PCR_Markers where Marker_Name in ("+markernms+")");
                    rsmd=rs.getMetaData();
                    //System.out.println("MArkers:::"+rs.getString(2));
                    req.getSession().setAttribute("pcrrs",rs);
                    req.getSession().setAttribute("pcrrsmd",rsmd);
                }catch(Exception e){System.out.println(e);}
                finally{
                          try{
                                  if(con!=null) con.close();
                             }catch(Exception e){System.out.println(e);}
                            }
                // con.close();
                    return am.findForward("blank");
            }
    }
```

./WEB-INF/src/org/icrisat/lims/reports/RetrieveStatusPlatesAction.java

```
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.HashSet;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
```

```
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

public class RetrieveStatusPlatesAction extends Action{

        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub

                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("fvalues");
                        session.removeAttribute("studylist");
                }
                String mss="no";
                String expName=req.getParameter("expName");
                String ename=expName;
                if(expName.endsWith("~_~psc")){
                        expName=expName.substring(0, expName.lastIndexOf("~_~"));
                        mss="yes";
                        ename=expName;
                }
                String exp=expName;
                session.setAttribute("forpsc", mss);
                String finalPList="";
                ArrayList extPList=new ArrayList();
                ArrayList finalList=new ArrayList();
                Connection con=null;
                ResultSet expRs=null;
                ResultSet finalrs=null;
                Statement expSt=null;
                Statement finalst=null;
                ResultSet runpltrs=null;
                Statement runpltSt=null;
                ResultSet basepltrs=null;
                Statement basepltSt=null;
                ResultSet electrors=null;
                Statement electroSt=null;
                ResultSet OldplatesRS=null;
                Statement OldplatesST=null;
                ResultSet finaloprs=null;
                Statement finalopSt=null;
                int runpltCount=0;
```

```
                    try{
                            ServletContext context = servlet.getServletContext();
                            DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                            con=dataSource.getConnection();
                            expSt=con.createStatement();
                            finalst=con.createStatement();
                            OldplatesST=con.createStatement();
                            runpltSt=con.createStatement();
                            basepltSt=con.createStatement();
                            electroSt=con.createStatement();
                            finalopSt=con.createStatement();
                            int countpcr=0;
                            int baseplateCount=0;
                            if(!(expName.endsWith("~~~PCR"))){
                                    expRs=expSt.executeQuery("select distinct dna_plate_id from dna_extraction_exptdet
ails where experiment_name='"+expName+"'");
                                    while(expRs.next()){
                                            extPList.add(expRs.getString(1));
                                            countpcr=0;
                                            finalrs=finalst.executeQuery("select distinct pcr_plate_id, quantification
_plate_id, dilution_plate_id from status_view where extraction_plate_id='"+expRs.getString(1)+"'");
                                            while(finalrs.next()){
                                                    countpcr++;
                                                    baseplateCount=0;
                                                    //System.out.println("finalrs.getString(1) ========== "+finalrs.ge
tString(1));
                                                    if(finalrs.getString(1)==null){
                                                            finalPList=expRs.getString(1)+"~!"+finalrs.getString(1)+"~
!null~!null~!null~!null~!"+finalrs.getString(2)+"~!"+finalrs.getString(3);
                                                            finalList.add(finalPList);
                                                    }else{
                                                            OldplatesRS=OldplatesST.executeQuery("Select * from pcr_tr
acking where pcr_plate_id='"+finalrs.getString(1)+"' and date_of_creation<='2009-02-20 08:59:13.383' and pcr_plate_id not
in(select base_plate from pcr_marker)");
                                                            if(OldplatesRS.next()){
                                                                    basepltrs=basepltSt.executeQuery("Select pcr_plate
_id,electrophoresis_type from dna_electrophoresis where pcr_plate_id='"+finalrs.getString(1)+"'");
                                                                    //if(basepltrs.next()){
                                                                    while(basepltrs.next()){
                                                                            baseplateCount++;
                                                                            if(basepltrs.getString(2).equals("Capillar
y")){
                                                                                    electrors=electroSt.executeQuery("
Select Distinct(pcr_plate_id) from ce_electrophoresis where pcr_plate_id='"+finalrs.getString(1)+"'");
                                                                            }else{
                                                                                    electrors=electroSt.executeQuery("
Select Distinct(pcr_plate_id) from gel_electrophoresis where pcr_plate_id='"+finalrs.getString(1)+"'");
                                                                            }
```

```
102                                                                     if(electrors.next()){
103                                                                             HashSet set=new HashSet();
104                                                                             finaloprs=finalopSt.executeQuery("
Select  pcr_plate_id,description from lims_output_files where pcr_plate_id='"+electrors.getString(1)+"'");
105                                                                             while(finaloprs.next()){
106                                                                                     set.add(finaloprs.getStrin
g(2));
107                                                                             }//else{
108                                                                             if(set.size()==3){
109                                                                                     finalPList=expRs.getString
(1)+"~!"+finalrs.getString(1)+"~!null~!null~!"+electrors.getString(1)+"~!"+finaloprs.getString(1)+"~!"+finalrs.getString(2
)+"~!"+finalrs.getString(3);
110                                                                             }else{
111                                                                                     finalPList=expRs.getString
(1)+"~!"+finalrs.getString(1)+"~!null~!null~!"+electrors.getString(1)+"~!null~!"+finalrs.getString(2)+"~!"+finalrs.getStri
ng(3);
112                                                                             }
113                                                                             //}
114                                                                     }else{
115                                                                             finalPList=expRs.getString(1)+"~!"
+finalrs.getString(1)+"~!null~!null~!null~!null~!"+finalrs.getString(2)+"~!"+finalrs.getString(3);
116                                                                     }
117                                                                     finalList.add(finalPList);

118                                                             }
119                                                             //else{
120                                                             if(baseplateCount==0){
121                                                                     finalPList=expRs.getString(1)+"~!"+finalrs
.getString(1)+"~!null~!null~!null~!null~!"+finalrs.getString(2)+"~!"+finalrs.getString(3);
122                                                                     finalList.add(finalPList);
123                                                             }
124                                                     }else{
125  //                                                         System.out.println("Select pcr_plate_id from pcr_m
arker where base_plate='"+finalrs.getString(1)+"'");
126                                                             basepltrs=basepltSt.executeQuery("Select pcr_plate
_id,electrophoresis_type from pcr_marker where base_plate='"+finalrs.getString(1)+"'");
127                                                             //System.out.println("basepltrs.next() ==== "+base
pltrs.next());
128                                                             //if(basepltrs.next()){
129                                                             while(basepltrs.next()){
130                                                                     baseplateCount++;
131                                                                     runpltrs=runpltSt.executeQuery("Select dis
tinct(run_plate_id) From run_tracking_well where pcr_plates ~ '"+basepltrs.getString(1)+"'");
132                                                                     runpltCount=0;
133                                                                     while(runpltrs.next()){
134                                                                             runpltCount++;
135                                                                             if(basepltrs.getString(2).equals("
Capillary")){
```

```
136                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
electrors=electroSt.execut
eQuery("Select Distinct(pcr_plate_id) from ce_electrophoresis where pcr_plate_id='"+runpltrs.getString(1)+"'");
}else{
electrors=electroSt.execut
eQuery("Select Distinct(pcr_plate_id) from gel_electrophoresis where pcr_plate_id='"+runpltrs.getString(1)+"'");
}
if(electrors.next()){
HashSet set=new HashSet();
finaloprs=finalopSt.execut
eQuery("Select  pcr_plate_id,description from lims_output_files where pcr_plate_id='"+electrors.getString(1)+"'");
while(finaloprs.next()){
set.add(finaloprs.
getString(2));
}//else{
if(set.size()==3){
finalPList=expRs.g
etString(1)+"~!"+finalrs.getString(1)+"~!"+basepltrs.getString(1)+"~!"+runpltrs.getString(1)+"~!"+electrors.getString(1)+"
~!"+finaloprs.getString(1)+"~!"+finalrs.getString(2)+"~!"+finalrs.getString(3);
}else{
finalPList=expRs.g
etString(1)+"~!"+finalrs.getString(1)+"~!"+basepltrs.getString(1)+"~!"+runpltrs.getString(1)+"~!"+electrors.getString(1)+"
~!null~!"+finalrs.getString(2)+"~!"+finalrs.getString(3);
}
//}
}else{
finalPList=expRs.getString
(1)+"~!"+finalrs.getString(1)+"~!"+basepltrs.getString(1)+"~!"+runpltrs.getString(1)+"~!null~!null~!"+finalrs.getString(2)
+"~!"+finalrs.getString(3);
}
finalList.add(finalPList);
}
if(runpltCount==0){
finalPList=expRs.getString(1)+"~!"
+finalrs.getString(1)+"~!"+basepltrs.getString(1)+"~!null~!null~!null~!"+finalrs.getString(2)+"~!"+finalrs.getString(3);
finalList.add(finalPList);
}
}
//else{
if(baseplateCount==0){
finalPList=expRs.getString(1)+"~!"+finalrs
.getString(1)+"~!null~!null~!null~!null~!"+finalrs.getString(2)+"~!"+finalrs.getString(3);
finalList.add(finalPList);
}
}
}

}
if(countpcr==0){
```

```
172                                                     finalPList=expRs.getString(1)+"~!null~!null~!null~!null~!null~!nul
l~!null";
173                                                     finalList.add(finalPList);
174                                             }
175                                     }
176                             }else{
177                                     String[] SplitExperiment=expName.split("~~~PCR");
178                                     exp=SplitExperiment[0];
179                                     expRs=expSt.executeQuery("Select distinct PCR_Tracking_Well.PCR_Plate_Id From Geno
type_Master Inner Join PCR_Tracking_Well On PCR_Tracking_Well.LIMS_Id = Genotype_Master.LIMS_Id where Genotype_Master.Expe
riment_Name='"+expName+"'");
180                                     while(expRs.next()){
181                                             baseplateCount=0;
182                                             extPList.add(expRs.getString(1));
183                                             OldplatesRS=OldplatesST.executeQuery("Select * from pcr_tracking where pcr
_plate_id='"+expRs.getString(1)+"' and date_of_creation<='2009-02-20 08:59:13.383' and pcr_plate_id not in(select base_pla
te from pcr_marker)");
184                                             if(OldplatesRS.next()){
185                                                     basepltrs=basepltSt.executeQuery("Select pcr_plate_id,electrophore
sis_type from dna_electrophoresis where pcr_plate_id='"+expRs.getString(1)+"'");
186                                                     //if(basepltrs.next()){
187                                                     while(basepltrs.next()){
188                                                             baseplateCount++;
189                                                             if(basepltrs.getString(2).equals("Capillary")){
190                                                                     electrors=electroSt.executeQuery("Select Distinct(
pcr_plate_id) from ce_electrophoresis where pcr_plate_id='"+expRs.getString(1)+"'");
191                                                             }else{
192                                                                     electrors=electroSt.executeQuery("Select Distinct(
pcr_plate_id) from gel_electrophoresis where pcr_plate_id='"+expRs.getString(1)+"'");
193                                                             }
194                                                             if(electrors.next()){
195                                                                     HashSet set=new HashSet();
196                                                                     finaloprs=finalopSt.executeQuery("Select  pcr_plat
e_id,description from lims_output_files where pcr_plate_id='"+electrors.getString(1)+"'");
197                                                                     while(finaloprs.next()){
198                                                                             set.add(finaloprs.getString(2));
199                                                                     }//else{
200                                                                     if(set.size()==3){
201                                                                             finalPList=expRs.getString(1)+"~!null~!nul
l~!"+electrors.getString(1)+"~!"+finaloprs.getString(1)+"~!";
202                                                                     }else{
203                                                                             finalPList=expRs.getString(1)+"~!null~!nul
l~!"+electrors.getString(1)+"~!null~!";
204                                                                     }
205                                                                     //}
206                                                             }else{
207                                                                     finalPList=expRs.getString(1)+"~!null~!null~!null~
!null~!";
```

```
                                                        }
                                                        finalList.add(finalPList);
                                                }
                                                //else{
                                                if(baseplateCount==0){
                                                        finalPList=expRs.getString(1)+"~!null~!null~!null~!null~!"
;
                                                        finalList.add(finalPList);
                                                }
                                        }else{
  //                                            System.out.println("Select pcr_plate_id,electrophoresis_type from
pcr_marker where base_plate='"+expRs.getString(1)+"'");
                                                basepltrs=basepltSt.executeQuery("Select pcr_plate_id,electrophore
sis_type from pcr_marker where base_plate='"+expRs.getString(1)+"'");
                                                //if(basepltrs.next()){
                                                while(basepltrs.next()){
                                                        baseplateCount++;
                                                        runpltrs=runpltSt.executeQuery("Select distinct(run_plate_
id) From run_tracking_well where pcr_plates ~ '"+basepltrs.getString(1)+"'");
                                                        runpltCount=0;
                                                        while(runpltrs.next()){
                                                                runpltCount++;
                                                                if(basepltrs.getString(2).equals("Capillary")){
                                                                        electrors=electroSt.executeQuery("Select D
istinct(pcr_plate_id) from ce_electrophoresis where pcr_plate_id='"+runpltrs.getString(1)+"'");
                                                                }else{
                                                                        electrors=electroSt.executeQuery("Select D
istinct(pcr_plate_id) from gel_electrophoresis where pcr_plate_id='"+runpltrs.getString(1)+"'");
                                                                }
                                                                if(electrors.next()){
                                                                        HashSet set=new HashSet();
                                                                        finaloprs=finalopSt.executeQuery("Select
pcr_plate_id,description from lims_output_files where pcr_plate_id='"+electrors.getString(1)+"'");
                                                                        while(finaloprs.next()){
                                                                                set.add(finaloprs.getString(2));
                                                                        }//else{
                                                                        if(set.size()==3){
                                                                                finalPList=expRs.getString(1)+"~!"
+basepltrs.getString(1)+"~!"+runpltrs.getString(1)+"~!"+electrors.getString(1)+"~!"+finaloprs.getString(1)+"~!";
                                                                        }else{
                                                                                finalPList=expRs.getString(1)+"~!"
+basepltrs.getString(1)+"~!"+runpltrs.getString(1)+"~!"+electrors.getString(1)+"~!null~!";
                                                                        }
                                                                        //}
                                                                }else{
                                                                        finalPList=expRs.getString(1)+"~!"+basepltr
rs.getString(1)+"~!"+runpltrs.getString(1)+"~!null~!null~!";
                                                                }
```

```
                                                                finalList.add(finalPList);
                                                        }
                                                        if(runpltCount==0){
                                                                finalPList=expRs.getString(1)+"~!"+basepltrs.getSt
ring(1)+"~!null~!null~!null";
                                                                finalList.add(finalPList);
                                                        }
                                                }
                                                //else{
                                                if(baseplateCount == 0){
                                                        finalPList=expRs.getString(1)+"~!null~!null~!null~!null";
                                                        finalList.add(finalPList);
                                                }
                                        }
                                }
                        }
                        session.setAttribute("expList", extPList);
                        session.setAttribute("expName", exp);
                        session.setAttribute("ename", ename);
                        session.setAttribute("fvalues", finalList);
                }catch(Exception e){
                        e.printStackTrace();
                }finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return am.findForward("status");
        }
}
```

./WEB-INF/src/org/icrisat/lims/reports/PCRProgramIdAction.java

```
//retrieving a list of PCR program Ids
/*
 * Created on Oct 28, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.Vector;

```

```
import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import org.icrisat.lims.common.RetrieveCropAction;


/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class PCRProgramIdAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                String msg="";
                if((String)session.getAttribute("user")==null){
                         msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("programlist");
                }
                //
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                Statement st1=null;
                ResultSet rs1=null;
                ArrayList list=new ArrayList();

                DynaActionForm pcrfrm = (DynaActionForm)af;
                String crop1=((String)pcrfrm.get("crop"));

                try{
```

```
                        //database connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();

                        if(req.getQueryString().equals("crop")){
                                RetrieveCropAction crop=new RetrieveCropAction();
                                Vector v=new Vector();
                                v=crop.Crop(con,req.getSession().getAttribute("user").toString());
                                req.getSession().setAttribute("multiplexcropvector",v);
                                msg="croplist";
                        }else{
                                String cropName=crop1.toLowerCase();
                                if(session.getAttribute("reportgen").equals("no"))
                                        rs=st.executeQuery("select PCR_program_Id from LIMS_PCR_Protocols where lo
wer(Crop)='"+crop1.toLowerCase()+"'");
                                else
                                        rs=st.executeQuery("select PCR_program_Id from LIMS_PCR_Protocols where lo
wer(Crop)='"+session.getAttribute("reportcrop").toString().toLowerCase()+"'");
                                while(rs.next())
                                {
                                        list.add(rs.getString(1));
                                }
                                session.setAttribute("crop", cropName);
                                req.getSession().setAttribute("programlist",list);
                                msg="programlist";

                        }
                    }catch(Exception e){System.out.println(e);}
                    finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }

                  return am.findForward(msg);
          }
  }
```

./WEB-INF/src/org/icrisat/lims/reports/StoragePlateAction.java

```
//Forward list of plates for which storage data is availables
/*
 * Created on Oct 6, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
```

```
 */
package org.icrisat.lims.reports;
import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import java.util.*;

import org.apache.struts.Globals;
import org.apache.struts.action.*;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;


/**
 * @author pprasad
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class StoragePlateAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {
                        HttpSession session = req.getSession(true);
                        // user identification
                if((String)session.getAttribute("user")==null){
                                String msg="logout";
                                return am.findForward(msg);
                        }
    String str="storagedisplay";
        Connection con=null;
        Statement st=null;
        ResultSet rs=null;
        Vector v=new Vector();


        try{
                ServletContext context = servlet.getServletContext();
                DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                con=dataSource.getConnection();
                st=con.createStatement();
                if(session.getAttribute("reportgen").equals("no"))
                        rs=st.executeQuery("SELECT dna_plate_id from dna_storage where dna_storage.upsc_id =’"+req
```

```
.getSession().getAttribute("upsc")+"'");
                else
                        rs=st.executeQuery("SELECT dna_plate_id from dna_storage where dna_storage.upsc_id like '%
"+req.getSession().getAttribute("usercid")+"%'");
                while(rs.next())
                {
                        String Storageplate_id=rs.getString(1);
                        v.add(Storageplate_id);
                }

                }catch(Exception e){System.out.println(e);}
                finally{
                        if(con!=null)con.close();
                }
                 req.getSession().setAttribute("storagedisplayvector",v);
                return am.findForward(str);


                }
 }
```

./WEB-INF/src/org/icrisat/lims/reports/PCRPlateIdAction.java

```
 //Class to forward a list of PCR plate Identifiers
 /*
  * Created on Jan 19, 2006
  *
  * TODO To change the template for this generated file go to
  * Window - Preferences - Java - Code Style - Code Templates
  */
         package org.icrisat.lims.reports;

 import java.sql.Connection;
 import java.sql.ResultSet;
 import java.sql.Statement;
 import java.util.ArrayList;

 import javax.servlet.ServletContext;
 import javax.servlet.http.HttpServletRequest;
 import javax.servlet.http.HttpServletResponse;
 import javax.servlet.http.HttpSession;
 import javax.sql.DataSource;

 import org.apache.struts.Globals;
 import org.apache.struts.action.Action;
 import org.apache.struts.action.ActionForm;
 import org.apache.struts.action.ActionForward;
 import org.apache.struts.action.ActionMapping;
```

```
import org.icrisat.lims.common.RetrieveProjectsAction;


/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class PCRPlateIdAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("pcr_plate_display_list");
                }
                //
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                ArrayList al=new ArrayList();

                try{

                        //database  connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        String op="";
                        String option="";
                        ArrayList projects=new ArrayList();
                        if(session.getAttribute("reportgen").equals("no")){
                                rs=st.executeQuery("select distinct PCR_Plate_Id from PCR_Tracking where upsc_id='
"+session.getAttribute("upsc")+"' order by PCR_Plate_Id");
                                while(rs.next())
                                        al.add(rs.getString(1));
                                session.setAttribute("pcr_plate_display_list",al);
                        }else{
                                if(session.getAttribute("queryType").equals("userdata")){
                                        op=req.getParameter("op");
```

```
    73                                          if(op==null){
    74                                                  option="one";
    75                                                  session.setAttribute("option", option);
    76                                                  RetrieveProjectsAction rps=new RetrieveProjectsAction();
    77                                                  projects=rps.RetriveProjectList((String)session.getAttribute("user
cid"), req, con);
    78                                                  req.getSession().setAttribute("projects",projects);
    79                                          }else{
    80                                                  option="two";
    81                                                  session.setAttribute("option", option);
    82                                                  //System.out.println("select distinct PCR_Plate_Id from PCR_Tracki
ng where upsc_id like '"+req.getParameter("project")+"%"+req.getSession().getAttribute("usercid")+"' order by PCR_Plate_Id
");
    83                                                  rs=st.executeQuery("select distinct PCR_Plate_Id from PCR_Tracking
 where upsc_id like '"+req.getParameter("project")+"%"+req.getSession().getAttribute("usercid")+"' order by PCR_Plate_Id")
;
    84                                                  while(rs.next()){
    85                                                          al.add(rs.getString(1));
    86                                                  }
    87                                                  session.setAttribute("pcr_plate_display_list",al);

    88                                          }
    89                                  }else{
    90                                          rs=st.executeQuery("select distinct PCR_Plate_Id from PCR_Tracking where u
psc_id like '%"+session.getAttribute("usercid")+"%' order by PCR_Plate_Id");
    91                                          while(rs.next())
    92                                                  al.add(rs.getString(1));
    93                                                  session.setAttribute("pcr_plate_display_list",al);
    94                                  }
    95                          }
    96                      }catch(Exception e){
    97                              System.out.println(e);
    98                              }
    99                      finally{
   100                              try{
   101                                      if(con!=null) con.close();
   102                              }catch(Exception e){System.out.println(e);}
   103                      }
   104
   105                  return am.findForward("displaypcrplates");
   106
   107          }
   108  }
./WEB-INF/src/org/icrisat/lims/reports/LoadStudyAction.java


     1  //Retrieve study names that have allelobin ouptput files to display
     2  /*
```

```
 * Created on Apr 12, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;


import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
/**
 * @author RRajalakshmi
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class LoadStudyAction extends Action{
        Connection con;
        Statement stmt;
        ResultSet rs;
        public ArrayList LoadStudy(String user,HttpServletRequest req, Connection con)
        {
                ArrayList list=new ArrayList();

                try{
                        stmt=con.createStatement();
                        if(req.getSession().getAttribute("reportgen").equals("no"))
                                rs=stmt.executeQuery("select Study_Name from lims_allelobin_output_status where Ru
n_Status like 'Completed' and upsc_id= '" +user+ "'");
                        else
                                if(req.getSession().getAttribute("queryType").equals("userdata"))
                                        rs=stmt.executeQuery("select distinct project_name from user_psc where stu
dy_name in(select study_name from lims_allelobin_output_status where Run_Status like 'Completed' and upsc_id like '%" +use
```

```
r+ "%')");
                                else
                                        rs=stmt.executeQuery("select Study_Name from lims_allelobin_output_status
where Run_Status like 'Completed' and upsc_id like '%" +user+ "%'");

                        while(rs.next()){
                                list.add(rs.getString(1));
                        }
                }catch(Exception e)
                {System.out.println(e);}
                return list;
        }
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("list");
                }
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        ArrayList slist=null;
                        if(session.getAttribute("reportgen").equals("no")){
                                slist=LoadStudy(session.getAttribute("upsc").toString(),req,con);
                        }else{
                                slist=LoadStudy(session.getAttribute("usercid").toString(),req,con);
                        }
                        req.getSession().setAttribute("list",slist);


                        }catch(Exception e){System.out.println(e);}
                        finally{
                              try{
                                        if(con!=null) con.close();

                                 }catch(Exception e){System.out.println(e);}
                                }
                return am.findForward("retrieved");
        }
}
```

./WEB-INF/src/org/icrisat/lims/reports/PCRReactionIdAction.java

```
//Retrieving and forwarding PCR reaction identifiers
/*
 * Created on Oct 31, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import org.icrisat.lims.common.RetrieveCropAction;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class PCRReactionIdAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                //              user identification
                HttpSession session=req.getSession(true);
                String msg="";
                if((String)session.getAttribute("user")==null){
                        msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
```

```
                        session.removeAttribute("reagentlist");
                        session.removeAttribute("reagentcrop");
                }
                //
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                ArrayList list=new ArrayList();
                DynaActionForm pcrgfrm = (DynaActionForm)af;
                String crop1=((String)pcrgfrm.get("crop"));

                try{
                        //database connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        if(req.getQueryString().equals("crop")){
                                RetrieveCropAction crop=new RetrieveCropAction();
                                Vector v=new Vector();
                                //Vector v1=new Vector();
                                v=crop.Crop(con,req.getSession().getAttribute("user").toString());
                                //v1=crop.Crop1(con);
                                req.getSession().setAttribute("multiplexcropvector",v);
                                //req.getSession().setAttribute("multiplexcropvector1",v1);
                                //System.out.println("test test");
                                msg="crop";
                        }else{
                                st=con.createStatement();
                                String crop="";
                                if(session.getAttribute("reportgen").equals("no")){
                                        crop=req.getParameter("crop");
                                        rs=st.executeQuery("select PCR_Reaction_Id from LIMS_PCR_Reactors where lo
wer(Crop)='"+crop1.toLowerCase()+"'");
                                }else{
                                        crop=session.getAttribute("reportcrop").toString();
                                        rs=st.executeQuery("select PCR_Reaction_Id from LIMS_PCR_Reactors where lo
wer(Crop)='"+session.getAttribute("reportcrop").toString().toLowerCase()+"'");
                                }
                                while (rs.next())
                                {
                                        list.add(rs.getString(1));
                                }
                                //con.close();
                                 req.getSession().setAttribute("reagentlist",list);
                                 req.getSession().setAttribute("reagentcrop",crop);
                                 msg="pcrreagents1";
                            }
                    }catch(Exception e){System.out.println(e);}
```

```
                    finally{
                                try{
                                          if(con!=null) con.close();
                                   }catch(Exception e){System.out.println(e);}
                                  }

                  return am.findForward(msg);
         }
 }
```

./WEB-INF/src/org/icrisat/lims/reports/ReactionDetailsAction.java

```
 //Forward PCR reagent details for a selected crop, marker and protocol
 /*
  * Created on Oct 31, 2005
  *
  * TODO To change the template for this generated file go to
  * Window - Preferences - Java - Code Style - Code Templates
  */
 package org.icrisat.lims.reports;

 import java.sql.Connection;
 import java.sql.ResultSet;
 import java.sql.Statement;

 import javax.servlet.ServletContext;
 import javax.servlet.http.HttpServletRequest;
 import javax.servlet.http.HttpServletResponse;
 import javax.servlet.http.HttpSession;
 import javax.sql.DataSource;


 import org.apache.struts.Globals;
 import org.apache.struts.action.Action;
 import org.apache.struts.action.ActionForm;
 import org.apache.struts.action.ActionForward;
 import org.apache.struts.action.ActionMapping;
 import org.apache.struts.action.DynaActionForm;
 /**
  * @author lswarupa
  *
  * TODO To change the template for this generated type comment go to
  * Window - Preferences - Java - Code Style - Code Templates
  */
 public class ReactionDetailsAction extends Action{
         public ActionForward execute(ActionMapping am, ActionForm af,
                         HttpServletRequest req, HttpServletResponse res) throws Exception {
                 // TODO Auto-generated method stub
```

```
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){

                        String msg="logout";
                       return am.findForward(msg);
                }
                if(session!=null){
                       session.removeAttribute("reagentset");
                }
                //
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                DynaActionForm pcrgfrm = (DynaActionForm)af;
                String reagent1=((String)pcrgfrm.get("reagent"));
                try{
                       /*String realpath=(String)session.getAttribute("realpath");
                        con=new SQLDAOFactory().createCon(realpath);*/
                       ServletContext context = servlet.getServletContext();
                       DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                       con=dataSource.getConnection();
                       st=con.createStatement();
                       rs=st.executeQuery("select * from LIMS_PCR_Reactors where PCR_reaction_Id='"+reagent1+"'")
;
                    req.getSession().setAttribute("reagentset",rs);
                    }catch(Exception e){System.out.println(e);}
                    finally{
                              try{
                                        if(con!=null) con.close();
                                  }catch(Exception e){System.out.println(e);}
                                 }

                   // con.close();
                return am.findForward("blank");
        }
}
```

./WEB-INF/src/org/icrisat/lims/reports/GenotypeMarkerAction.java

```
//Retrieve marker and genotype data to display as a matrix
/*
 * Created on Nov 8, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;
```

```

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.HashMap;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 * @author pprasad
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class GenotypeMarkerAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }

                //removing session objects
                if(session!=null){
                        session.removeAttribute("MGcrop");
                        session.removeAttribute("markerMap");
                }

                Connection con=null;
                ResultSet rs=null;
                ResultSet rs1=null;
                Statement stmt=null;
                Statement stmt1=null;
                String crop="";
```

```
                String genotypeid="";
                DynaActionForm mfrm = (DynaActionForm)af;
                if(session.getAttribute("reportgen").equals("no")){
                        crop=((String)mfrm.get("mretcrops"));
                }else if((session.getAttribute("reportgen").equals("reports"))&&(session.getAttribute("param")=="w
holedata")&&(req.getParameter("param1").equals("marker"))){
                        crop=req.getParameter("Rcrop");
                }else if((req.getParameter("param1").equals("marker"))||(req.getParameter("param1").equals("geno")
)){
                        crop=req.getParameter("mretcrops");
                }else{
                        crop=(String)session.getAttribute("reportcrop");
                }
                HashMap markerMap=new HashMap();
                try{
                        //database connection
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                stmt = con.createStatement();
                stmt1=con.createStatement();

                //for genotype vs markers details
                if(req.getParameter("param1").equals("marker")){
                        rs=stmt.executeQuery("select distinct genotype_master.genotype_id, pcr_marker_well.marker_
assigned from pcr_tracking_well inner join pcr_marker on pcr_marker.base_plate=pcr_tracking_well.pcr_plate_id inner join g
enotype_master on genotype_master.lims_id=pcr_tracking_well.lims_id inner join pcr_marker_well on pcr_marker_well.pcr_plat
e_id=pcr_marker.pcr_plate_id INNER JOIN user_psc on Genotype_Master.upsc_id=user_psc.upsc_id where Lower(user_psc.crop_nam
e) ='"+crop.toLowerCase()+"'");
                        String entireString="";
                        int genotypeCount=0;
                        if(rs.next()){
                                genotypeid=rs.getString(1);
                                entireString=rs.getString(2);
                                while(rs.next()){
                                        String tempGenoTypeId=rs.getString(1);
                                        if(tempGenoTypeId.equals(genotypeid)){

                                                entireString=entireString+", "+rs.getString(2);
                                        }else{
                                                markerMap.put(genotypeid,entireString);
                                                entireString=rs.getString(2);

                                                genotypeCount++;
                                        }
                                        genotypeid=tempGenoTypeId;
                                }
```

```
                        }

                }//for markers vs genotype details
                else{
                        rs=stmt.executeQuery("select distinct pcr_marker_well.marker_assigned, genotype_master.gen
otype_id from pcr_tracking_well inner join pcr_marker on pcr_marker.base_plate=pcr_tracking_well.pcr_plate_id inner join g
enotype_master on genotype_master.lims_id=pcr_tracking_well.lims_id inner join pcr_marker_well on pcr_marker_well.pcr_plat
e_id=pcr_marker.pcr_plate_id INNER JOIN user_psc on Genotype_Master.upsc_id=user_psc.upsc_id where Lower(user_psc.crop_nam
e) ='"+crop.toLowerCase()+"'");
                        String entireString="";
                        int genotypeCount=0;
                        if(rs.next()){
                                genotypeid=rs.getString(2);
                                entireString=rs.getString(1);
                                while(rs.next()){
                                        String tempGenoTypeId=rs.getString(1);
                                        if(tempGenoTypeId.equals(entireString)){

                                                genotypeid=genotypeid+", "+rs.getString(2);
                                        }else{
                                                markerMap.put(entireString,genotypeid);
                                                genotypeid=rs.getString(2);
                                                genotypeCount++;
                                        }
                                        entireString=tempGenoTypeId;
                                }
                        }
                }
                session.setAttribute("markerMap",markerMap);
                session.setAttribute("MGcrop", crop);
                }catch(Exception e){System.out.println(e);}
                finally{
                        try{
                                //closing connection
                                if(rs!=null)rs.close();
                                if(stmt!=null)stmt.close();
                                if(rs1!=null)rs1.close();
                                if(stmt1!=null)stmt1.close();
                                if(con!=null)con.close();
                        }catch(Exception e){
                                System.out.println("Exception : "+e);
                        }
                }
                if(req.getParameter("param1").equals("marker"))
                        return am.findForward("Mfiledisplay");
                else
                        return am.findForward("Mfilegenodisplay");
        }
```

```
}
```

./WEB-INF/src/org/icrisat/lims/reports/QuantifiedPlateDisplayAction.java

```
//Forwarding DNA concentration for genotypes from a selected plate
/*
 * Created on Oct 10, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class QuantifiedPlateDisplayAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res)throws Exception
        {
        HttpSession session = req.getSession(true);
        //user identification
                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                       return am.findForward(msg);
                }
                if(session!=null){
```

```
44                          session.removeAttribute("qnlist");
45                          session.removeAttribute("qndetails1");
46                          session.removeAttribute("quancontrols");
47                          session.removeAttribute("df");
48                  }
49                  //
50                  DynaActionForm pidfrm = (DynaActionForm)af;
51                  String pid=((String)pidfrm.get("pid"));
52
53                  String userid=(String)req.getSession().getAttribute("upsc");
54                  String usercropid=(String)req.getSession().getAttribute("usercid");
55                  Connection con=null;
56                  Statement stmt=null;
57                  Statement stmt1=null;
58                  ResultSet rs=null;
59                  String qndetails="";
60                  Vector v1 = new Vector();
61                  ResultSet rs1=null;
62                  Statement st;
63                  String result="";
64                  String df=""; String protocol="";
65                  //String ctype="";
66                  String nanodrop="";
67                  String age="";
68                  try{
69                          //database connection
70                          ServletContext context = servlet.getServletContext();
71                          DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
72                          con=dataSource.getConnection();
73                          stmt = con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE, ResultSet.CONCUR_READ_ONLY);
74                  st=con.createStatement();
75                  stmt1=con.createStatement();
76                  ResultSet rs2=stmt1.executeQuery("select machine_output_file from dna_quantification_tracking wher
e DNA_Plate_Id = '"+pid+"'");
77                  while (rs2.next()){
78                          nanodrop=rs2.getString(1);
79                  }
80                  if(session.getAttribute("reportgen").equals("no"))       {
81                                  //rs=stmt.executeQuery("SELECT DNA_Extraction_Tracking.DNA_Extraction_Protocol, DN
A_Quantification_Tracking.DNA_Quantification_Protocol, DNA_Extraction_Tracking.Plate_Type, DNA_Quantification_Tracking.Gel
_Image, DNA_Extraction_Exptdetails.Experiment_Name, DNA_Extraction_Exptdetails.Type_Of_Material, DNA_Extraction_Exptdetail
s.Age_Of_Material FROM Experiment_Master INNER JOIN DNA_Extraction_Exptdetails ON DNA_Extraction_Exptdetails.Experiment_Na
me = Experiment_Master.Experiment_Name INNER JOIN DNA_Extraction_Tracking ON DNA_Extraction_Tracking.DNA_Plate_Id = DNA_Ex
traction_Exptdetails.DNA_Plate_Id INNER JOIN DNA_Quantification_Tracking ON DNA_Extraction_Exptdetails.DNA_Plate_Id = DNA_
Quantification_Tracking.DNA_Plate_Id WHERE (DNA_Extraction_Tracking.DNA_Plate_Id = '"+pid+"')AND (DNA_Extraction_Tracking.
upsc_id = '"+userid+"')");
82                          rs=stmt.executeQuery("SELECT DNA_Extraction_Tracking.DNA_Extraction_Protocol, DNA_Quantifi
cation_Tracking.DNA_Quantification_Protocol, DNA_Extraction_Tracking.Plate_Type, DNA_Extraction_Exptdetails.Experiment_Nam
```

```
e, DNA_Extraction_Exptdetails.Type_Of_Material, DNA_Extraction_Exptdetails.Age_Of_Material FROM Experiment_Master INNER JO
IN DNA_Extraction_Exptdetails ON DNA_Extraction_Exptdetails.Experiment_Name = Experiment_Master.Experiment_Name INNER JOIN
 DNA_Extraction_Tracking ON DNA_Extraction_Tracking.DNA_Plate_Id = DNA_Extraction_Exptdetails.DNA_Plate_Id INNER JOIN DNA_
Quantification_Tracking ON DNA_Extraction_Exptdetails.DNA_Plate_Id = DNA_Quantification_Tracking.DNA_Plate_Id WHERE (DNA_E
xtraction_Tracking.DNA_Plate_Id = '"+pid+"')AND (DNA_Extraction_Tracking.upsc_id = '"+userid+"')");
    83                  }else{
    84                                  //rs=stmt.executeQuery("SELECT DNA_Extraction_Tracking.DNA_Extraction_Protocol, DN
A_Quantification_Tracking.DNA_Quantification_Protocol, DNA_Extraction_Tracking.Plate_Type, DNA_Quantification_Tracking.Gel
_Image, DNA_Extraction_Exptdetails.Experiment_Name, DNA_Extraction_Exptdetails.Type_Of_Material, DNA_Extraction_Exptdetail
s.Age_Of_Material FROM Experiment_Master INNER JOIN DNA_Extraction_Exptdetails ON DNA_Extraction_Exptdetails.Experiment_Na
me = Experiment_Master.Experiment_Name INNER JOIN DNA_Extraction_Tracking ON DNA_Extraction_Tracking.DNA_Plate_Id = DNA_Ex
traction_Exptdetails.DNA_Plate_Id INNER JOIN DNA_Quantification_Tracking ON DNA_Extraction_Exptdetails.DNA_Plate_Id = DNA_
Quantification_Tracking.DNA_Plate_Id WHERE (DNA_Extraction_Tracking.DNA_Plate_Id = '"+pid+"')AND (DNA_Extraction_Tracking.
upsc_id like '%"+usercropid+"%')");
    85                                  rs=stmt.executeQuery("SELECT DNA_Extraction_Tracking.DNA_Extraction_Protocol, DNA_
Quantification_Tracking.DNA_Quantification_Protocol, DNA_Extraction_Tracking.Plate_Type, DNA_Extraction_Exptdetails.Experi
ment_Name, DNA_Extraction_Exptdetails.Type_Of_Material, DNA_Extraction_Exptdetails.Age_Of_Material FROM Experiment_Master
INNER JOIN DNA_Extraction_Exptdetails ON DNA_Extraction_Exptdetails.Experiment_Name = Experiment_Master.Experiment_Name IN
NER JOIN DNA_Extraction_Tracking ON DNA_Extraction_Tracking.DNA_Plate_Id = DNA_Extraction_Exptdetails.DNA_Plate_Id INNER J
OIN DNA_Quantification_Tracking ON DNA_Extraction_Exptdetails.DNA_Plate_Id = DNA_Quantification_Tracking.DNA_Plate_Id WHER
E (DNA_Extraction_Tracking.DNA_Plate_Id = '"+pid+"')AND (DNA_Extraction_Tracking.upsc_id like '%"+usercropid+"%')");
    86                  }
    87                          while(rs.next()){
    88                                  //qndetails=rs.getString(1)+"'~'"+rs.getString(2)+"'~'"+rs.getString(3)+"'~'"+rs.g
etString(4)+"'~'"+rs.getString(5)+"'~'"+rs.getString(6)+"'~'"+rs.getString(7);
    89                                  if(rs.getString(6).equals(""))
    90                                          age="null";
    91                                  else
    92                                          age=rs.getString(6);
    93                                  qndetails=rs.getString(1)+"'~'"+rs.getString(2)+"'~'"+rs.getString(3)+"'~'"+rs.get
String(4)+"'~'"+rs.getString(5)+"'~'"+age;
    94                          }
    95                          System.out.println(qndetails);
    96                          req.getSession().setAttribute("qndetails1",qndetails);
    97                          rs1=st.executeQuery("select dilution_factor_value,dna_quantification_protocol from dna_qua
ntification_tracking where dna_plate_id='"+pid+"'");
    98                          while(rs1.next()){
    99                                  df=rs1.getString(1);
   100                                  protocol=rs1.getString(2);
   101                                  //ctype=rs1.getString(3);
   102                          }
   103                          session.setAttribute("df",df);
   104                          if(protocol.equalsIgnoreCase("Spectrophotometry")){
   105                                  if((!(nanodrop==null))&&(nanodrop.equals("yes"))){
   106                                          rs1=stmt.executeQuery("SELECT DNA_Extraction_Well_Controls.Genotype_Id, DN
A_Extraction_Well_Controls.Col_Id, DNA_Extraction_Well_Controls.Row_Id, DNA_Extraction_Well_Controls.DNA_Plate_Controls, D
NA_Quantification_Trackingdetails.DNA_Concentration,dna_quantification_trackingdetails.purity_ratio FROM DNA_Extraction_We
ll_Controls INNER JOIN DNA_Quantification_Trackingdetails ON DNA_Extraction_Well_Controls.DNA_Plate_Id = DNA_Quantificatio
```

```
n_Trackingdetails.DNA_Plate_Id AND DNA_Extraction_Well_Controls.Col_Id = DNA_Quantification_Trackingdetails.Col_Id AND DNA
_Extraction_Well_Controls.Row_Id = DNA_Quantification_Trackingdetails.Row_Id WHERE (DNA_Quantification_Trackingdetails.DNA
_Plate_Id = '"+pid+"') ORDER BY DNA_Extraction_Well_Controls.Row_Id,DNA_Extraction_Well_Controls.Col_Id");
   107                                  }else{
   108                                          rs1=stmt.executeQuery("SELECT DNA_Extraction_Well_Controls.Genotype_Id, DN
A_Extraction_Well_Controls.Col_Id, DNA_Extraction_Well_Controls.Row_Id, DNA_Extraction_Well_Controls.DNA_Plate_Controls, D
NA_Quantification_Trackingdetails.DNA_Concentration FROM DNA_Extraction_Well_Controls INNER JOIN DNA_Quantification_Tracki
ngdetails ON DNA_Extraction_Well_Controls.DNA_Plate_Id = DNA_Quantification_Trackingdetails.DNA_Plate_Id AND DNA_Extractio
n_Well_Controls.Col_Id = DNA_Quantification_Trackingdetails.Col_Id AND DNA_Extraction_Well_Controls.Row_Id = DNA_Quantific
ation_Trackingdetails.Row_Id WHERE (DNA_Quantification_Trackingdetails.DNA_Plate_Id = '"+pid+"') ORDER BY DNA_Extraction_W
ell_Controls.Row_Id,DNA_Extraction_Well_Controls.Col_Id");
   109                                  }
   110                          }else
   111                                  rs1=stmt.executeQuery("SELECT DNA_Extraction_Well_Controls.Genotype_Id, DNA_Extrac
tion_Well_Controls.Col_Id, DNA_Extraction_Well_Controls.Row_Id, DNA_Extraction_Well_Controls.DNA_Plate_Controls, DNA_Quant
ification_Trackingdetails.DNA_Concentration FROM DNA_Extraction_Well_Controls INNER JOIN DNA_Quantification_Trackingdetail
s ON DNA_Extraction_Well_Controls.DNA_Plate_Id = DNA_Quantification_Trackingdetails.DNA_Plate_Id AND DNA_Extraction_Well_C
ontrols.Col_Id = DNA_Quantification_Trackingdetails.Col_Id AND DNA_Extraction_Well_Controls.Row_Id = DNA_Quantification_Tr
ackingdetails.Row_Id WHERE (DNA_Quantification_Trackingdetails.DNA_Plate_Id = '"+pid+"') ORDER BY DNA_Extraction_Well_Cont
rols.Row_Id,DNA_Extraction_Well_Controls.Col_Id");
   112
   113                          session.setAttribute("quancontrols",rs1);
   114                          while(rs1.next()){
   115                                  if((!(nanodrop==null))&&(nanodrop.equals("yes")))
   116                                          result=result + rs1.getString(1)+"~"+rs1.getInt(2)+"~"+rs1.getString(3)+"~
"+rs1.getString(4)+"~"+rs1.getString(5)+"~"+rs1.getString(6)+",";
   117                                  else
   118                                          result=result + rs1.getString(1)+"~"+rs1.getInt(2)+"~"+rs1.getString(3)+"~
"+rs1.getString(4)+"~"+rs1.getString(5)+",";
   119                           }
   120                          v1.add(result);
   121                          req.getSession().setAttribute("qnlist",v1);
   122                          session.setAttribute("nanodrop", nanodrop);
   123                   }catch(Exception e){
   124                          e.printStackTrace();
   125                   }
   126                  finally{
   127                        try{
   128                                  if(con!=null) con.close();
   129                           }catch(Exception e){System.out.println(e);}
   130                          }
   131
   132                  return am.findForward("quantpl");
   133          }
   134
   135  }
   136
   137
```

./WEB-INF/src/org/icrisat/lims/reports/DisplayAction.java

```
//Display report on protocols, experimental details, genotype detail and quantified plate reports
/*
 * Created on Nov 17, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;


import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
import org.icrisat.lims.common.RetrieveProjectsAction;

/**
 * @author praveenreddy t
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */

public class DisplayAction extends Action{
        Connection con=null;
        Statement st=null;
        ResultSet rs =null;

        public ArrayList disExptNamesList(String un,String qstring,HttpServletRequest req, Connection con){
```

```
                ArrayList disEptNameList=new ArrayList();
                try{
                        st = con.createStatement();
                        if(req.getSession().getAttribute("reportgen").equals("no")){
                                if (qstring.equals("ret")){
                                        rs = st.executeQuery("SELECT Experiment_Name,Description,Location,Year_Of_
Experiment,No_of_Genotypes FROM Experiment_Master WHERE upsc_id ='"+ un +"'");
                                }else{
                                        rs = st.executeQuery("SELECT distinct(Experiment_Name) FROM Genotype_Maste
r WHERE upsc_id ='"+ un +"'");
                                }
                        }else{
                                if (qstring.equals("ret")){
                                /*      rs = st.executeQuery("SELECT Experiment_Name,Description,Location,Year_Of_
Experiment,No_of_Genotypes FROM Experiment_Master WHERE upsc_id like '%"+ un +"%'");
                                }else{
                                        rs = st.executeQuery("SELECT distinct(Experiment_Name) FROM Genotype_Maste
r WHERE upsc_id like '%"+ un +"%'");
                                }
                        }*/
                                        if(un.contains("!~~!")){
                                                //System.out.println("test test");
                                                String[] split_un=un.split("!~~!");
                                                rs = st.executeQuery("SELECT distinct(Experiment_Name) FROM Experi
ment_Master where upsc_id like '%"+ split_un[0] +"%' and upsc_id like '%"+ split_un[1] +"%'");
                                        }else{
                                                rs = st.executeQuery("SELECT Experiment_Name,Description,Location,
Year_Of_Experiment,No_of_Genotypes FROM Experiment_Master WHERE upsc_id like '%"+ un +"%'");
                                        }
                                }else{
                                        if(un.contains("!~~!")){
                                                //System.out.println("test test");
                                                String[] split_un=un.split("!~~!");
                                                rs = st.executeQuery("SELECT distinct(Experiment_Name) FROM Genoty
pe_Master WHERE upsc_id like '%"+ split_un[0] +"%' and upsc_id like '%"+ split_un[1] +"%'");
                                        }else{
                                                rs = st.executeQuery("SELECT distinct(Experiment_Name) FROM Genoty
pe_Master WHERE upsc_id like '%"+ un +"%'");
                                        }
                                }
                        }
                        disEptNameList=new ArrayList();
                        while(rs.next()){
                                String disEptNameList1=rs.getString("Experiment_Name");
                                disEptNameList.add(disEptNameList1);
                        }
                }catch(Exception e){
```

```
                        e.printStackTrace();
                    }
                return disEptNameList;
        }


        public ArrayList disProtocolNamesList(String un,String qstring,HttpServletRequest req, Connection con){

                ArrayList disProNameList=new ArrayList();
                try{
                        st = con.createStatement();
                        if (qstring.equals("Extraction")){
                                rs = st.executeQuery("SELECT distinct(Protocol_Name) FROM DNA_Protocols WHERE Protocol_Type='"+ qstring +"'");
                        }else{
                                rs = st.executeQuery("SELECT distinct(Protocol_Name) FROM DNA_Protocols WHERE Protocol_Type='"+ qstring +"'");
                        }
                        while(rs.next()){
                                String disProNameList1=rs.getString("Protocol_Name");
                                disProNameList.add(disProNameList1);
                        }
                        req.getSession().setAttribute("protocol", qstring);
                }catch(Exception e){
                        e.printStackTrace();
                }
                return disProNameList;
        }
        public String getProtocolsData(String un,String exptname,HttpServletRequest req,Connection con){
                String retdata="";
                try{
                        st = con.createStatement();
                        rs = st.executeQuery("SELECT Protocol_Name,Manual_Or_Tecan,Protocol_Filename FROM DNA_Protocols WHERE Protocol_Name='"+ exptname.replace("'","''") +"'");
                        while(rs.next()){
                                retdata=rs.getString("Protocol_Name") + "~" + rs.getString("Manual_Or_Tecan") + "~" + rs.getString("Protocol_Filename");
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }
                return retdata;
        }


        public String getRetData(String un, HttpServletRequest req,Connection con){
                String retdata="";
                String exptname=req.getParameter("exptnames");
```

```
                try{
                        st = con.createStatement();
                        if(req.getSession().getAttribute("reportgen").equals("no")){
                                rs = st.executeQuery("SELECT Experiment_Name,Description,Location,Year_Of_Experime
nt,No_of_Genotypes FROM Experiment_Master WHERE Experiment_Name='"+ exptname +"' and upsc_id ='"+ un +"'");
                        }else{
                                rs = st.executeQuery("SELECT Experiment_Name,Description,Location,Year_Of_Experime
nt,No_of_Genotypes FROM Experiment_Master WHERE Experiment_Name='"+ exptname +"' and upsc_id like '%"+ un +"%'");
                        }
                        while(rs.next()){
                                retdata=rs.getString("Experiment_Name") + "~''!" + rs.getString("Description") + "
~''!" + rs.getString("Location") + "~''!" + rs.getString("Year_Of_Experiment") + "~''!" + rs.getString("No_of_Genotypes");
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }
                return retdata;
        }

        public String getGMData(String un,String exptname,HttpServletRequest req,Connection con){
                String retdata="";
                try{
                        int intTempLimsId=0;
                        String strCurrLimsId="";
                        int intTempValue=0;
                        int intTNCount=0;
                        st = con.createStatement();
                        //get the Tarit Name count
                        Statement stmtTNCount=con.createStatement();
                        ResultSet rsTNCount=null;
                        if(req.getSession().getAttribute("reportgen").equals("no")){
                                rsTNCount=stmtTNCount.executeQuery("SELECT Trait_Name FROM Genotype_Traitdetails W
HERE (LIMS_Id = (SELECT LIMS_Id FROM Genotype_Master WHERE (Experiment_Name = '"+ exptname +"' AND upsc_id = '"+ un +"')LI
MIT 1))");
                        }else{
                                rsTNCount=stmtTNCount.executeQuery("SELECT Trait_Name FROM Genotype_Traitdetails W
HERE (LIMS_Id = (SELECT LIMS_Id FROM Genotype_Master WHERE (Experiment_Name = '"+ exptname +"' AND upsc_id like '%"+ un +"
%')LIMIT 1))");
                        }
                        while(rsTNCount.next()){
                                intTNCount=intTNCount+1;
                        }
                        intTempLimsId=intTNCount+1;
                        // retrieve genotype trait details
                        if(req.getSession().getAttribute("reportgen").equals("no")){
```

```
   166                                     rs= st.executeQuery("SELECT  Genotype_Master.Genotype_Id,  Genotype_Traitdetails.T
rait_Value FROM  Genotype_Master INNER JOIN  Genotype_Traitdetails ON Genotype_Master.LIMS_Id = Genotype_Traitdetails.LIMS
_Id WHERE     (Genotype_Master.Experiment_Name = '"+ exptname +"' and upsc_id ='"+ un +"') ORDER BY Genotype_Master.LIMS_I
d, Genotype_Traitdetails.Trait_Name");
   167                             }else{
   168                                     rs= st.executeQuery("SELECT  Genotype_Master.Genotype_Id,  Genotype_Traitdetails.T
rait_Value FROM  Genotype_Master INNER JOIN  Genotype_Traitdetails ON Genotype_Master.LIMS_Id = Genotype_Traitdetails.LIMS
_Id WHERE     (Genotype_Master.Experiment_Name = '"+ exptname +"' and upsc_id like '%"+ un +"%') ORDER BY Genotype_Master.
LIMS_Id, Genotype_Traitdetails.Trait_Name");
   169                             }
   170                             while(rs.next()){
   171                                     strCurrLimsId=rs.getString("Genotype_Id");
   172                                     if(intTempLimsId<=intTNCount-1){
   173                                             retdata=retdata + "!''!" + rs.getString("Trait_Value");
   174                                             intTempLimsId=intTempLimsId+1;
   175                                     }else{
   176                                             if(intTempValue==0){
   177                                                     retdata=retdata + rs.getString("Genotype_Id")  + "!''!" + rs.getSt
ring("Trait_Value");
   178                                                     intTempValue=1;
   179                                                     intTempLimsId=1;
   180                                             }else{
   181                                                     retdata=retdata+"!~!"+ rs.getString("Genotype_Id")  + "!''!" + rs.
getString("Trait_Value") ;
   182                                                     intTempLimsId=1;
   183                                             }
   184                                     }
   185                             }
   186                             if (retdata==""){
   187                                     Statement stmt=con.createStatement();
   188                                     ResultSet rsnull=null;
   189                                     if(req.getSession().getAttribute("reportgen").equals("no")){
   190                                             rsnull=stmt.executeQuery("SELECT  Genotype_Id FROM  Genotype_Master WHERE
 (Experiment_Name = '"+ exptname +"' and upsc_id ='"+ un +"') ORDER BY LIMS_Id");
   191                                     }else{
   192                                             rsnull=stmt.executeQuery("SELECT  Genotype_Id FROM  Genotype_Master WHERE
 (Experiment_Name = '"+ exptname +"' and upsc_id like '%"+ un +"%') ORDER BY LIMS_Id");
   193                                     }
   194                                     while(rsnull.next()){
   195                                             retdata=retdata + rsnull.getString("Genotype_Id")  + "!~!";
   196                                     }
   197                             }
   198                     }catch(Exception e){
   199                             e.printStackTrace();
   200                     }
   201             return retdata;
   202         }
   203
```

```
        public String getGMFNames(String un,String exptname,HttpServletRequest req, Connection con){
                String retFNamesData="";

                try{
                        st=con.createStatement();
                        if(req.getSession().getAttribute("reportgen").equals("no")){
                                rs=st.executeQuery("SELECT Trait_Name FROM Genotype_Traitdetails WHERE (LIMS_Id =
(SELECT LIMS_Id FROM Genotype_Master WHERE (Experiment_Name = '"+ exptname +"' and upsc_id ='"+ un +"') ORDER BY LIMS_Id L
IMIT 1)) ORDER BY LIMS_Id, Trait_Name");
                        }else{
                                rs=st.executeQuery("SELECT Trait_Name FROM Genotype_Traitdetails WHERE (LIMS_Id =
(SELECT LIMS_Id FROM Genotype_Master WHERE (Experiment_Name = '"+ exptname +"' and upsc_id like '%"+ un +"%') ORDER BY LIM
S_Id LIMIT 1)) ORDER BY LIMS_Id, Trait_Name");
                        }
                        while(rs.next()){
                                retFNamesData=retFNamesData + rs.getString("Trait_Name") + "!~!" ;

                        }
                }catch(Exception e){
                        e.printStackTrace();
                  }
                return retFNamesData;
        }

        public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse
resp)throws Exception
        {
                        HttpSession session = req.getSession(true);
 //                     user identification

                        if((String)session.getAttribute("user")==null){
                                 String msg="logout";
                                return map.findForward(msg);
                        }
                        if(session!=null){
                                session.removeAttribute("msg");
                                session.removeAttribute("DisExptNames");
                                session.removeAttribute("ProtocolDetailData");
                                session.removeAttribute("GMNamesData");
                                session.removeAttribute("GMData");
                        }

                        ActionErrors ae = new ActionErrors();
                        String uname=(String) session.getAttribute("upsc");
                        String exptQstring=req.getQueryString().toString();
                        String msg="";
                        String strQSValue=req.getQueryString().toString();
                        DynaActionForm gmfrm = (DynaActionForm)form;
```

```
                        String exptnames1=((String)gmfrm.get("exptnames"));
                        String ucropname=(String) session.getAttribute("usercid");
                        String op="";
                        String option="";
                        ArrayList v= new ArrayList();
                        try{
                                //Ajax Response Code
                                PrintWriter writer=resp.getWriter();
                                resp.setContentType("text/xml");
                                resp.setHeader("Cache-Control", "no-cache");


                                //database connection
                                ServletContext context = servlet.getServletContext();
                                DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                                con=dataSource.getConnection();

                                //System.out.println(" strQSValue in DisplayAction.java="+strQSValue);
                                if (strQSValue.equals("retexptdata")){
                                        String retData="";
                                        if(session.getAttribute("reportgen").equals("no")){
                                                retData=getRetData(uname,req,con);
                                        }else{
                                                retData=getRetData(ucropname,req,con);
                                        }

                                        if(retData!=""){
                                                msg="dis";
                                                session.setAttribute("DisExptNames", retData);
                                                session.setAttribute("retED",retData);
                                        }else{
                                                msg="emptyeditexpt";
                                        }
                                        }else if (strQSValue.equals("Extraction") || strQSValue.equals("Quantification")){
                                                ArrayList disenList=null;
                                                if(session.getAttribute("reportgen").equals("no")){
                                                        disenList = disProtocolNamesList(uname,exptQstring,req,con);
                                                }else{
                                                        disenList = disProtocolNamesList(ucropname,exptQstring,req,con);
                                                }

                                                if(!disenList.isEmpty()){
                                                        msg="dis";

                                                        ////////////Ajax XMLResponse code//////////////
```

```
291
292                                                     writer.println("<Protocoltype>");
293                                                     writer.println("<ExtractionDet><![CDATA[" + " -Select Prot
ocol- " + "]]></ExtractionDet>");
294                                                     for(int i=0;i<disenList.size();i++){
295                                                             writer.println("<ExtractionDet><![CDATA[" + disenL
ist.get(i) + "]]></ExtractionDet>");
296                                                     }
297                                                     writer.println("</Protocoltype>");
298                                                     return null;
299                                                     ////////////End of Ajax XMLResponse code//////////////
300
301                                                     //session.setAttribute("DisProtocolNames", disenList);
302                                             }
303                                             else
304                                             {
305                                                     ae.add("myerror",new ActionError("prompt.protocol"));
306                                                     saveErrors(req,ae);
307                                                     msg="emptyeditexpt";
308                                                     session.setAttribute("msg",msg);
309                                                     return (new ActionForward(map.getInput()));
310                                             }
311                                     }else if (strQSValue.equals("retProtocolsdata")){
312                                             String retData="";
313                                             if(session.getAttribute("reportgen").equals("no")){
314                                                     retData=getProtocolsData(uname,req.getParameter("protocolL
ist"),req,con);
315                                             }else{
316                                                     retData=getProtocolsData(ucropname,req.getParameter("proto
colList"),req,con);
317                                             }
318
319                                             if(retData!=""){
320                                                     msg="disProdata";
321                                                     session.setAttribute("ProtocolDetailData", retData);
322                                             }else{
323                                                     msg="emptyeditexpt";
324                                             }
325                                     }else if (strQSValue.equals("retGMData")){
326                                             String retData="";
327                                             String retFNamesData="";

328                                             String retSPData="";
329                                             if(session.getAttribute("reportgen").equals("no")){
330                                                     retData=getGMData(uname,exptnames1,req,con);

331                                                     retFNamesData=getGMFNames(uname,exptnames1,req,con);
```

```
                                                        retSPData=getRetData(uname,req,con);
                                                }else{
                                                        retData=getGMData(ucropname,exptnames1,req,con);

                                                        retFNamesData=getGMFNames(ucropname,exptnames1,req,con);

                                                        retSPData=getRetData(ucropname,req,con);
                                                }

                                                if(retData!=""){
                                                        msg="dis";
                                                        session.setAttribute("GMData", retData);
                                                        session.setAttribute("GMNamesData", retFNamesData);
                                                }
                                                else
                                                {

                                                        msg="emptyeditexpt";
                                                }
                                        }else{
                                                ArrayList disenList = null;
                                                if(session.getAttribute("reportgen").equals("no")){
                                                        disenList = disExptNamesList(uname,exptQstring,req,con);
                                                        if(!disenList.isEmpty()){
                                                                msg="dis";
                                                                session.setAttribute("DisExptNames", disenList);
                                                        }else{
                                                                if(strQSValue.equals("retG")){
                                                                        ae.add("myerror",new ActionError("prompt.G
eno"));
                                                                }else if(strQSValue.equals("ret")){

                                                                        ae.add("myerror",new ActionError("prompt.e
xpt"));
                                                                }
                                                                saveErrors(req,ae);
                                                                return (new ActionForward(map.getInput()));

                                                        }
                                                }else{
                                                        if(session.getAttribute("queryType").equals("userdata")){
                                                                op=req.getParameter("op");
                                                                if(op==null||op==""){
                                                                        option="one";
                                                                        session.setAttribute("option", option);
                                                                        RetrieveProjectsAction rp=new RetrieveProj
ectsAction();
                                                                        v=rp.RetriveProjectList(session.getAttribu
```

```
te("usercid").toString(),req,con);
   373                                                                                req.getSession().setAttribute("projects",v
);
   374                                                                                msg="dis";

   375                                                                        }else{
   376                                                                                //disenList = null;
   377                                                                                option="two";

   378                                                                                session.setAttribute("option", option);
   379                                                                                ucropname=ucropname+"!~~!"+op;
   380                                                                                disenList = disExptNamesList(ucropname,exp
tQstring,req,con);
   381
   382                                                                                if(!disenList.isEmpty()){
   383                                                                                        msg="dis";

   384                                                                                        session.setAttribute("DisExptNames
", disenList);
   385                                                                                }else{
   386                                                                                        if(strQSValue.equals("retG")){
   387                                                                                                ae.add("myerror",new Actio
nError("prompt.Geno"));
   388                                                                                        }else if(strQSValue.equals("ret"))
{
   389                                                                                                ae.add("myerror",new Actio
nError("prompt.expt"));
   390                                                                                        }
   391                                                                                        saveErrors(req,ae);
   392                                                                                        return (new ActionForward(map.getI
nput()));
   393                                                                                }
   394                                                                        }
   395                                                        }else{
   396                                                                        disenList = disExptNamesList(ucropname,exptQstring
,req,con);
   397                                                                        if(!disenList.isEmpty()){
   398                                                                                msg="dis";

   399                                                                                session.setAttribute("DisExptNames", disen
List);
   400                                                                        }else{
   401                                                                                if(strQSValue.equals("retG")){
   402                                                                                        ae.add("myerror",new ActionError("
prompt.Geno"));
   403                                                                                }else if(strQSValue.equals("ret")){

   404                                                                                        ae.add("myerror",new ActionError("
```

```
prompt.expt"));
                                                                                    }
                                                                                    saveErrors(req,ae);
                                                                                    return (new ActionForward(map.getInput()))
;
                                                                            }
                                                                        }
                                                                    }
                                                            }
                                                    }catch(Exception e){
                                                            System.out.println(e);
                                            }finally{
                                                  try{
                                                            if(con!=null) con.close();
                                                    }catch(Exception e){System.out.println(e);}
                                                  }


                                            return map.findForward(msg);
                                    }
                            }
./WEB-INF/src/org/icrisat/lims/reports/QuantifiedPlateIdAction.java


//Forward list of quantified plates available for a particular user
/*
 * Created on Oct 10, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
```

```
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.RetrieveProjectsAction;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class QuantifiedPlateIdAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res)throws Exception
        {
        HttpSession session = req.getSession(true);

        //user identification
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("qpltid");
                }
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                Vector v=new Vector();
                String op="";
                String option="";
                ArrayList projects =new ArrayList();
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        if(session.getAttribute("reportgen").equals("no")){
                                rs=st.executeQuery("SELECT DISTINCT DNA_Extraction_Well.DNA_Plate_Id FROM DNA_Extraction_Well INNER JOIN DNA_Quantification_Tracking ON DNA_Extraction_Well.DNA_Plate_Id = DNA_Quantification_Tracking.DNA_Plate_Id WHERE (DNA_Quantification_Tracking.upsc_id =’"+req.getSession().getAttribute("upsc")+"’)");
                                while(rs.next()){
                                        String QuantifiedPlate_id=rs.getString(1);
                                        v.add(QuantifiedPlate_id);
                                }
                                req.getSession().setAttribute("qpltid",v);
                        }else{
                                if(session.getAttribute("queryType").equals("userdata")){
                                        op=req.getParameter("op");
```

```
    70                                          if(op==null){
    71                                                  option="one";
    72                                                  session.setAttribute("option", option);
    73                                                  RetrieveProjectsAction rps=new RetrieveProjectsAction();
    74                                                  projects=rps.RetriveProjectList((String)session.getAttribute("user
cid"), req, con);
    75                                                  req.getSession().setAttribute("projects",projects);

    76                                          }else{
    77                                                  option="two";
    78                                                  session.setAttribute("option", option);
    79                                                  rs=st.executeQuery("SELECT DISTINCT DNA_Extraction_Well.DNA_Plate_
Id FROM DNA_Extraction_Well INNER JOIN DNA_Quantification_Tracking ON DNA_Extraction_Well.DNA_Plate_Id = DNA_Quantificatio
n_Tracking.DNA_Plate_Id WHERE (DNA_Quantification_Tracking.upsc_id like '"+req.getParameter("project")+"%"+req.getSession(
).getAttribute("usercid")+"%')");
    80                                                  while(rs.next()){
    81                                                          String QuantifiedPlate_id=rs.getString(1);
    82                                                          v.add(QuantifiedPlate_id);

    83                                                  }
    84                                                  req.getSession().setAttribute("qpltid",v);
    85                                          }
    86                                  }else{
    87                                          rs=st.executeQuery("SELECT DISTINCT DNA_Extraction_Well.DNA_Plate_Id FROM
DNA_Extraction_Well INNER JOIN DNA_Quantification_Tracking ON DNA_Extraction_Well.DNA_Plate_Id = DNA_Quantification_Tracki
ng.DNA_Plate_Id WHERE (DNA_Quantification_Tracking.upsc_id like '%"+req.getSession().getAttribute("usercid")+"%')");
    88                                          while(rs.next()){
    89                                                  String QuantifiedPlate_id=rs.getString(1);
    90                                                  v.add(QuantifiedPlate_id);
    91                                          }
    92                                          req.getSession().setAttribute("qpltid",v);
    93                                  }
    94                          }
    95                  }catch(Exception e){
    96                          System.out.println(e);
    97                  }finally{
    98                        try{
    99                                  if(con!=null) con.close();
   100                           }catch(Exception e){System.out.println(e);}
   101                          }
   102
   103                  //con.close();
   104                  return am.findForward("msg1");
   105          }
   106  }
./WEB-INF/src/org/icrisat/lims/reports/RetrievalAction.java
```

```
/*
 * Created on Aug 4, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;

/**
 * @author tpraveenreddy
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */


import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.Vector;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.RetrieveProjectsAction;

public class RetrievalAction extends Action {
        Connection con=null;
        Statement st=null;
        ResultSet rs=null;
        Statement st1=null;
        Statement st2=null;
        ResultSet studynamers=null;
        ResultSet cropnamers=null;
        String msg="";
        Vector v=new Vector();

    public ActionForward execute(ActionMapping mapping, ActionForm form, HttpServletRequest request, HttpServletRe
sponse response) throws Exception {
```

```

        try{
                HttpSession session=request.getSession(true);
                //String uname=(String) session.getAttribute("user");
                // user identification
                if((String)session.getAttribute("user")==null){
                        msg="logout";
                        return mapping.findForward(msg);
                }
                if(session!=null){
                        session.removeAttribute("studylist");
                        session.removeAttribute("croplist");
                        session.removeAttribute("projects");
                }
                ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        st1=con.createStatement();
                st2=con.createStatement();
                studynamers=st1.executeQuery("select distinct(Study_Name)from user_psc where User_Id='"+request.ge
tSession().getAttribute("user")+"'");
                cropnamers=st2.executeQuery("select distinct Crop_Name from user_psc where User_Id='"+request.getS
ession().getAttribute("user")+"'");

                    ArrayList croplist=new ArrayList();
                    ArrayList studylist=new ArrayList();
                    while(cropnamers.next())  {
                        croplist.add(cropnamers.getString(1));
                        //System.out.println("croplist"+ cropnamers.getString(1));
                    }
                        request.getSession().setAttribute("croplist",croplist);
                        while(studynamers.next()){
                                studylist.add(studynamers.getString(1));
                 }
                        if(session.getAttribute("queryType").equals("userdata")){
                                /*rs=st.executeQuery("select distinct(project_name) from user_psc where user_id='"
+session.getAttribute("usercid")+"'");
                                while(rs.next()){
                                        String proj=rs.getString(1);
                                        v.add(proj);
                                }
                                //System.out.println("Vector v="+v);
                                request.getSession().setAttribute("projects",v);*/
                                ArrayList projects=new ArrayList();
                                RetrieveProjectsAction rps=new RetrieveProjectsAction();
                                projects=rps.RetriveProjectList((String)session.getAttribute("usercid"), request,
con);
```

```
                                request.getSession().setAttribute("projects",projects);
                        }
                request.getSession().setAttribute("studylist",studylist);
                //con.close();
    }catch(Exception e){
                System.out.println(e);
        }
    finally{
              try{
                        if(con!=null) con.close();
                 }catch(Exception e){System.out.println(e);}
                }
        return mapping.findForward("croplist");
    }
}
```

./WEB-INF/src/org/icrisat/lims/reports/MarkerContentTypeAction.java

```
//Retrieves all details available on selected markers available for download through the reports module
/*
 * Created on Dec 22, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.reports;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class MarkerContentTypeAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
```

```
                 if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                 }
                 //
                 res.setContentType("application/ms-excel");
                 return am.findForward("pcrmarkers");
         }
 }
```

./WEB-INF/src/org/icrisat/lims/common/RetrieveCropAction.java

```
 /*
  * Created on Sep 14, 2005
  *
  * TODO To change the template for this generated file go to
  * Window - Preferences - Java - Code Style - Code Templates
  */
 package org.icrisat.lims.common;

 import java.sql.Connection;
 import java.sql.ResultSet;
 import java.sql.Statement;
 import java.util.Vector;

 import javax.servlet.ServletContext;
 import javax.servlet.http.HttpServletRequest;
 import javax.servlet.http.HttpServletResponse;
 import javax.servlet.http.HttpSession;
 import javax.sql.DataSource;

 import org.apache.struts.Globals;
 import org.apache.struts.action.Action;
 import org.apache.struts.action.ActionForm;
 import org.apache.struts.action.ActionForward;
 import org.apache.struts.action.ActionMapping;

 /**
  * @author lswarupa
  *
  * TODO To change the template for this generated type comment go to
  * Window - Preferences - Java - Code Style - Code Templates
  */
 public class RetrieveCropAction extends Action{
         Vector v=new Vector();
         Vector v1=new Vector();
         Statement st=null;
         ResultSet rs=null;
```

```
        Statement st1=null;
        ResultSet rs1=null;
        String  cotyledon_type="";


        public Vector wholeCrops(Connection con){
                try{
                        st=con.createStatement();
                        rs=st.executeQuery("SELECT DISTINCT Lower(crop) FROM lims_pcr_markers");

                        while(rs.next()){
                                v.add(rs.getString(1));
                        }
                }catch(Exception e){System.out.println(e);}
                return v;
        }

        public Vector Crop(Connection con,String user){
                try{
                        st=con.createStatement();
                        rs=st.executeQuery("SELECT DISTINCT Lower(Crop_Name) FROM user_psc where User_Id = '"+ user+"'");

                        while(rs.next()){
                                v.add(rs.getString(1));
                        }
                }catch(Exception e){System.out.println(e);}
                return v;
        }
        public Vector cotyledonCrop(Connection con, String crop){
                try{
                        st=con.createStatement();
                        st1=con.createStatement();
                        rs=st.executeQuery("select cotyledon_type from lims_crops where lower(crop_name)='"+crop.toLowerCase()+"'");
                        while(rs.next()){
                                cotyledon_type=rs.getString(1);
                        }
                        rs1=st1.executeQuery("select crop_name from lims_crops where lower(crop_name) in (select distinct(crop) from lims_pcr_markers) and cotyledon_type='"+cotyledon_type+"'");
                        while(rs1.next()){
                                v1.add(rs1.getString(1));
                        }
                }catch(Exception e){System.out.println(e);}
                return v1;
        }
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
```

```
                // TODO Auto-generated method stub
//              user identification
                HttpSession session=req.getSession(true);
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                Connection con=null;
                String str="";
                int access_level=0;
                String user=(String)session.getAttribute("user");
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st=con.createStatement();
                        st1=con.createStatement();
                        v.clear();
                        v1.clear();
                        v=Crop(con,req.getSession().getAttribute("user").toString());
                        v1=cotyledonCrop(con,session.getAttribute("crop").toString());
                        rs=st.executeQuery("select access_level from user_info where user_id='"+user+"'");
                        while(rs.next()){
                                access_level=rs.getInt(1);
                        }
                        session.setAttribute("al", access_level+"");
                   }catch(Exception e){System.out.println(e);}
                   finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                   req.getSession().setAttribute("multiplexcropvector",v);
                   req.getSession().setAttribute("multiplexcropvector1",v1);
                   String param=req.getParameter("param");

                   if(param.equalsIgnoreCase("multiplex"))
                            str="multiplexcrops";
                   else if(param.equalsIgnoreCase("stock"))
                             str="stockcalc";
                   else if(param.equalsIgnoreCase("programs"))
                             str="programs";
                   else if(param.equalsIgnoreCase("reagents"))
                             str="reagents";
                   else if(param.equalsIgnoreCase("singledisplay"))
                          str="singledisplaymarkers";
                   else if(param.equalsIgnoreCase("multipledisplay"))
                             str="multipledisplaymarkers";
```

```
                    else if(param.equalsIgnoreCase("fixedprograms"))
                              str="fixedprograms";
                    else if(param.equalsIgnoreCase("touchdown"))
                              str="touchdownprograms";
                    else if(param.equalsIgnoreCase("conc"))
                              str="concentration";
                    else if(param.equalsIgnoreCase("marker"))
                              str="marker";
                    else if(param.equalsIgnoreCase("order"))
                              str="order";
                    else if(param.equalsIgnoreCase("vol"))
                              str="vol";
                    else if(param.equalsIgnoreCase("singlemarker"))
                                  str="singlemarker";
                    else if(param.equalsIgnoreCase("markersubset"))
                                  str="markersubset";
                    else if(param.equalsIgnoreCase("matrix"))
                                  str="matrix";
                    else if(param.equalsIgnoreCase("multiplexsets"))
                                  str="multiplexsets";
                    return am.findForward(str);
          }
  }
```

./WEB-INF/src/org/icrisat/lims/common/RetrieveProjectsAction.java

```
/**
 *
 */
package org.icrisat.lims.common;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.http.HttpServletRequest;

/**
 * @author psrikalyani
 *
 */
public class RetrieveProjectsAction {
        public ArrayList RetriveProjectList(String un,HttpServletRequest req, Connection con){
                ArrayList projectlist=new ArrayList();
                Statement st=null;
                ResultSet rs=null;
                try{
```

```
                        st = con.createStatement();
                        rs = st.executeQuery("SELECT distinct(Project_Name) FROM user_psc WHERE user_id ='"+ un +"
'");
                        while(rs.next()){
                                String projectName=rs.getString(1);
                                projectlist.add(projectName);
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }
                return projectlist;
        }
}
```

./WEB-INF/src/org/icrisat/lims/common/SendMail.java

```
package org.icrisat.lims.common;

import java.util.Properties;

import javax.activation.DataHandler;
import javax.activation.FileDataSource;
import javax.mail.BodyPart;
import javax.mail.Message;
import javax.mail.MessagingException;
import javax.mail.Multipart;
import javax.mail.Session;
import javax.mail.Transport;
import javax.mail.internet.AddressException;
import javax.mail.internet.InternetAddress;
import javax.mail.internet.MimeBodyPart;
import javax.mail.internet.MimeMessage;
import javax.mail.internet.MimeMultipart;
/**
 * @author Swapna nair on 2nd September 2008
 *      Class for Mailing Function
 */
public class SendMail {
        public void sendCancelMail(String mailServer, String from, String to, String cc,
                         String subject, String messageBody)
                                throws MessagingException, AddressException
             {
                 // Setup mail server
                 Properties props = System.getProperties();
                 props.put("mail.smtp.host", mailServer);

                 // Get a mail session
                 Session session = Session.getDefaultInstance(props, null);
```

```

                // Define a new mail message
                Message message = new MimeMessage(session);
                message.setFrom(new InternetAddress(from));
                message.addRecipient(Message.RecipientType.TO, new InternetAddress(to));
                message.addRecipient(Message.RecipientType.CC, new InternetAddress(cc));
                message.setSubject(subject);

                // Create a message part to represent the body text
                BodyPart messageBodyPart = new MimeBodyPart();
                messageBodyPart.setText(messageBody);

                //use a MimeMultipart as we need to handle the file attachments
                Multipart multipart = new MimeMultipart();

                //add the message body to the mime message
                multipart.addBodyPart(messageBodyPart);

                // Put all message parts in the message
                message.setContent(multipart);

                // Send the message
                Transport.send(message);
            }
        public void sendMailToGroup(String mailServer, String from, String to,
                        String subject, String messageBody)
                               throws MessagingException, AddressException
            {
                // Setup mail server
                Properties props = System.getProperties();
                props.put("mail.smtp.host", mailServer);

                // Get a mail session
                Session session = Session.getDefaultInstance(props, null);

                // Define a new mail message
                Message message = new MimeMessage(session);
                message.setFrom(new InternetAddress(from));
                message.addRecipient(Message.RecipientType.TO, new InternetAddress(to));
                message.setSubject(subject);

                // Create a message part to represent the body text
                BodyPart messageBodyPart = new MimeBodyPart();
                messageBodyPart.setText(messageBody);

                //use a MimeMultipart as we need to handle the file attachments
                Multipart multipart = new MimeMultipart();

```

```
                    //add the message body to the mime message
                    multipart.addBodyPart(messageBodyPart);

                    // Put all message parts in the message
                    message.setContent(multipart);

                    // Send the message
                    Transport.send(message);
                }

            //SendMail Function with attachment
            public void sendMail(String mailServer, String from, String to, String cc,
                             String subject, String messageBody, String attachments)
                                    throws MessagingException, AddressException
                {
                    // Setup mail server
                    Properties props = System.getProperties();
                    props.put("mail.smtp.host", mailServer);

                    // Get a mail session
                    Session session = Session.getDefaultInstance(props, null);
                    String sub1[]=subject.split("%%");
                    String mailSubj=sub1[0];
                    //System.out.println("Mail   : "+mailSubj);
                    String pltFileName=sub1[1]+"_"+sub1[2];
                    // Define a new mail message
                    Message message = new MimeMessage(session);
                    message.setFrom(new InternetAddress(from));
                    message.addRecipient(Message.RecipientType.TO, new InternetAddress(to));
                    message.addRecipient(Message.RecipientType.CC, new InternetAddress(cc));
                    message.setSubject(mailSubj);

                    // Create a message part to represent the body text
                    BodyPart messageBodyPart = new MimeBodyPart();
                    messageBodyPart.setText(messageBody);

                    //use a MimeMultipart as we need to handle the file attachments
                    Multipart multipart = new MimeMultipart();

                    //add the message body to the mime message
                    multipart.addBodyPart(messageBodyPart);

                    // add any file attachments to the message
                    addAtachments(attachments, multipart, pltFileName);

                    // Put all message parts in the message
                    message.setContent(multipart);

```

```
                    // Send the message
                    Transport.send(message);


                }
            protected void addAtachments(String attachments, Multipart multipart, String pltFileName)
        throws MessagingException, AddressException
            {
                    String filename = attachments;
                    MimeBodyPart attachmentBodyPart = new MimeBodyPart();

                    //use a JAF FileDataSource as it does MIME type detection
                    javax.activation.DataSource source = new FileDataSource(filename);
                    attachmentBodyPart.setDataHandler(new DataHandler(source));

                    //assume that the filename you want to send is the same as the
                    //actual file name - could alter this to remove the file path
                    attachmentBodyPart.setFileName(pltFileName);

                    //add the attachment
                    multipart.addBodyPart(attachmentBodyPart);

            }

            //SendMail Function with no attachment
            public void sendMailNoAttachment(String mailServer, String from, String to, String cc,
                             String subject, String messageBody)
                                    throws MessagingException, AddressException
                {
                    // Setup mail server
                    Properties props = System.getProperties();
                    props.put("mail.smtp.host", mailServer);

                    // Get a mail session
                    Session session = Session.getDefaultInstance(props, null);

                    // Define a new mail message
                    Message message = new MimeMessage(session);
                    message.setFrom(new InternetAddress(from));
                    message.addRecipient(Message.RecipientType.TO, new InternetAddress(to));
                    message.addRecipient(Message.RecipientType.CC, new InternetAddress(cc));
                    message.setSubject(subject);

                    // Create a message part to represent the body text
                    BodyPart messageBodyPart = new MimeBodyPart();
                    messageBodyPart.setText(messageBody);

                    //use a MimeMultipart as we need to handle the file attachments
```

```
                    Multipart multipart = new MimeMultipart();

                    //add the message body to the mime message
                    multipart.addBodyPart(messageBodyPart);

                    // Put all message parts in the message
                    message.setContent(multipart);

                    // Send the message
                    Transport.send(message);
                }
  }
```

./WEB-INF/src/org/icrisat/lims/common/UploadExcel.java

```
/*
 * Created on Sep 28, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.common;

import java.io.File;
import java.io.FileOutputStream;
import java.io.InputStream;

/**
 * @author praveenreddy t
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class UploadExcel implements java.io.Serializable{
        String strReturnValue="";

        public String createFile(InputStream stream, String fileName){

                try     {
                        FileOutputStream fos=null;
                        byte[] buffer = new byte[8192];
                        int bytesRead = 0;
                        fos = new FileOutputStream(fileName);
                        while ((bytesRead = stream.read(buffer, 0, 8192)) != -1){
                                        fos.write(buffer, 0, bytesRead);

                                }
                        fos.close();
```

```
                        stream.close();
                        strReturnValue="success";
                }
                catch(Exception e)
                {
                        e.toString();
                        strReturnValue="Exception"+e;
                }
                        return strReturnValue;
        }
        ///

        public String createImage(InputStream stream, String fileName){

                try{
                        byte[] buffer = new byte[1024];
                        int bytesRead = 0;
                        FileOutputStream fos = new FileOutputStream(fileName);
                        while ((bytesRead = stream.read(buffer))>0)
                                {
                                fos.write(buffer, 0, bytesRead);

                                }
                        fos.close();
                        stream.close();
                        strReturnValue="success";
                }
                catch(Exception e)
                {
                        e.toString();
                        strReturnValue="Exception"+e;
                }
                        return strReturnValue;
        }

        ////
        public String deleteFile(String fileName)
        {
                try{
                        File f=new File(fileName);
                        if(f.exists())
                        {
                                boolean flag=f.delete();

                                if(flag==true)
                                {
                                        strReturnValue="success";
                                }
```

```
                                else
                                {
                                        strReturnValue="failure";
                                }

                        }
                }
                catch(Exception e)
                {
                e.toString();
                strReturnValue="Exception"+e;
                }
                        return strReturnValue;
        }
}
```

./WEB-INF/src/org/icrisat/lims/common/CreateTemplate.java

```
/**
 *
 */
package org.icrisat.lims.common;

import java.io.File;

import jxl.Workbook;
import jxl.format.Border;
import jxl.format.BorderLineStyle;
import jxl.format.Colour;
import jxl.format.UnderlineStyle;
import jxl.write.Label;
import jxl.write.WritableCellFormat;
import jxl.write.WritableFont;
import jxl.write.WritableSheet;
import jxl.write.WritableWorkbook;

/**
 * @author psrikalyani
 *
 */
public class CreateTemplate {
                String str="";
        public String CreatePlateTemplate(String ptype, String sheetname, String fname, String format){

                try     {
                        WritableWorkbook workbook = Workbook.createWorkbook(new File(fname));
                        WritableSheet sheet=workbook.createSheet(sheetname,0);
                        WritableFont wf = new WritableFont(WritableFont.TIMES,WritableFont.DEFAULT_POINT_SIZE, Wri
```

```
tableFont.BOLD,false,UnderlineStyle.SINGLE,Colour.DARK_PURPLE);
                        WritableCellFormat cf = new WritableCellFormat(wf);
                        WritableCellFormat cf1 = new WritableCellFormat(wf);
                        cf1.setBackground(Colour.IVORY);
                        cf.setBackground(Colour.LIGHT_TURQUOISE);
                        cf.setBorder(Border.ALL, BorderLineStyle.HAIR, Colour.AUTOMATIC);
                        cf1.setBorder(Border.ALL, BorderLineStyle.HAIR, Colour.AUTOMATIC);
                            cf.setWrap(true);
                            int cha=65;
                            Label ll = new Label(0,0,format);
                        sheet.addCell(ll);
                            ll = new Label(0,1,"",cf);
                        sheet.addCell(ll);
                            for (int i=2;i<10;i++){
                                    ll = new Label(0,i,new Character((char)cha).toString(),cf);
                                    sheet.addCell(ll);
                                cha++;
                            }
                            for (int i=1;i<13;i++){
                                    if(i==2||i==4||i==6||i==8||i==10||i==12)
                                            ll = new Label(i,1,String.valueOf(i),cf);
                                    else
                                            ll = new Label(i,1,String.valueOf(i),cf1);

                                    sheet.addCell(ll);
                            }
                        for(int i=1;i<13;i++){
                            for(int j=2;j<10;j++){
                                    if(i==2||i==4||i==6||i==8||i==10||i==12){
                                            ll=new Label(i,j,"",cf);
                                            sheet.addCell(ll);
                                    }else{
                                            ll=new Label(i,j,"",cf1);
                                            sheet.addCell(ll);
                                    }
                            }
                        }
                        if(ptype.equals("384")){
                            for(int i=13;i<25;i++){
                                    if(i==14||i==16||i==18||i==20||i==22||i==24)
                                            ll = new Label(i,1,String.valueOf(i),cf);
                                    else
                                            ll = new Label(i,1,String.valueOf(i),cf1);
                                    sheet.addCell(ll);
                            }
                                for(int i=10;i<18;i++){
                                    ll = new Label(0,i,new Character((char)cha).toString(),cf);
                                        sheet.addCell(ll);
```

```
                                    cha++;
                                }
                                for(int i=1;i<25;i++){
                                    for(int j=2;j<18;j++){
                                            if(i==2||i==4||i==6||i==8||i==10||i==12||i==14||i==16||i==18||i==20||i==22
||i==24){
                                                    ll=new Label(i,j,"",cf);
                                                    sheet.addCell(ll);
                                            }else{
                                                    ll=new Label(i,j,"",cf1);
                                                    sheet.addCell(ll);
                                            }
                                    }
                                }
                        }
                        workbook.write();
                        workbook.close();
                    }catch(Exception e){
                            e.toString();
                            str="Exception"+e;
                    }
                    return(str);
            }

  public String CreateGenotypesTemplate( int count, String fname, String format){
                    try     {
                            WritableWorkbook workbook = Workbook.createWorkbook(new File(fname));
                            WritableSheet sheet=workbook.createSheet("Genotypes",0);
                            WritableFont wf = new WritableFont(WritableFont.TIMES,WritableFont.DEFAULT_POINT_SIZE, Wri
tableFont.BOLD,false,UnderlineStyle.SINGLE,Colour.DARK_PURPLE);
                            WritableFont wf1 = new WritableFont(WritableFont.TIMES,WritableFont.DEFAULT_POINT_SIZE, Wr
itableFont.BOLD,false,UnderlineStyle.SINGLE,Colour.WHITE);
                        WritableCellFormat cf = new WritableCellFormat(wf);
                        WritableCellFormat cf1 = new WritableCellFormat(wf);
                        WritableCellFormat cf2 = new WritableCellFormat(wf1);
                        cf2.setBackground(Colour.CORAL);
                        cf1.setBackground(Colour.IVORY);
                        cf.setBackground(Colour.LIGHT_TURQUOISE);
                        cf.setBorder(Border.ALL, BorderLineStyle.HAIR, Colour.AUTOMATIC);
                        cf1.setBorder(Border.ALL, BorderLineStyle.HAIR, Colour.AUTOMATIC);
                        cf2.setBorder(Border.ALL, BorderLineStyle.HAIR, Colour.AUTOMATIC);
                        cf.setWrap(true);
                        cf2.setWrap(true);

                            Label ll = new Label(0,0,format);
                        sheet.addCell(ll);
                        int k=2;
                        for(int p=0;p<count;p++){
```

```
                        int cha=65;
                        ll = new Label(0,k,"DNA Plate Id",cf2);
                            sheet.addCell(ll);
                            ll = new Label(1,k,"Enter DNA Plate Id here",cf2);
                            sheet.addCell(ll);
                                ll = new Label(0,k+1,"",cf);
                            sheet.addCell(ll);
                                for (int i=k+2;i<k+10;i++){
                                        ll = new Label(0,i,new Character((char)cha).toString(),cf);
                                        sheet.addCell(ll);
                                    cha++;
                                }
                                for (int i=1;i<13;i++){
                                        if(i==2||i==4||i==6||i==8||i==10||i==12)
                                                ll = new Label(i,k+1,String.valueOf(i),cf);
                                        else
                                                ll = new Label(i,k+1,String.valueOf(i),cf1);

                                        sheet.addCell(ll);
                                }
                            for(int i=1;i<13;i++){
                                for(int j=k+2;j<k+10;j++){
                                        if(i==2||i==4||i==6||i==8||i==10||i==12){
                                                ll=new Label(i,j,"",cf);
                                                sheet.addCell(ll);
                                        }else{
                                                ll=new Label(i,j,"",cf1);
                                                sheet.addCell(ll);

                                        }
                                }
                            }
                            k=k+12;
                        }

                        workbook.write();
                        workbook.close();
                    }catch(Exception e){
                            e.toString();
                            str="Exception"+e;
                    }
                    return(str);
            }

    }

./WEB-INF/src/org/icrisat/lims/common/RoundFloatValuesAction.java
```

```
/**
 * Created on july 20, 2007
 */
package org.icrisat.lims.common;

/**
 * @author psrikalyani
 *
 */
public class RoundFloatValuesAction {
        public double roundTwo(double in){
                return Math.round(in*100.0)/100.0;
        }

    public double roundThree(double in){
                return Math.round(in*1000.0)/1000.0;
        }

}
```

./WEB-INF/src/org/icrisat/lims/common/RetrieveAccessLevelAction.java

```
/**
 *
 */
package org.icrisat.lims.common;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

/**
 * @author psrikalyani
 *
 */
public class RetrieveAccessLevelAction {
        String msg="";
        Connection con=null;
        Statement st=null;
        ResultSet rs=null;

        int accessLevel=0;
        public int accessLevel(Connection con,String user){
                try{
                        st=con.createStatement();
                        rs=st.executeQuery("select access_level from user_info where user_id='"+user+"'");
                        while(rs.next()){
```

```
                                accessLevel=rs.getInt(1);
                            }
                    }catch(Exception e){System.out.println(e);}
                    return accessLevel;
            }

    }
```

./WEB-INF/src/org/icrisat/lims/validator/CustomValidationRules.java

```
/*
 * Created on Feb 23, 2007
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.validator;

import java.io.Serializable;

import javax.servlet.http.HttpServletRequest;

import org.apache.commons.validator.Field;
import org.apache.commons.validator.ValidatorAction;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.validator.Resources;


/**
 * @author tpraveenreddy
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class CustomValidationRules implements Serializable{

          public static boolean validateFileType( Object bean,
            ValidatorAction va,
            Field field,
            ActionErrors errors, HttpServletRequest request) {

            String value = null;

              try {
                int iValue = 33;
                int drinkingAge = 25;

                if ( iValue < drinkingAge ){
```

```
                    errors.add(field.getKey(),
                    Resources.getActionError(request, va, field));
                    return false;
                  }
                } catch (Exception e) {
                  errors.add(field.getKey(),
                                  Resources.getActionError(request, va, field));
                  return false;
                }

            return true;
          }


          }

```

./WEB-INF/src/org/icrisat/lims/startup/login/AddUserAction.java

```
/*
 * Created on Sep 26, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.startup.login;

import java.io.FileInputStream;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.Properties;

import javax.sql.DataSource;
import javax.servlet.ServletContext;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.icrisat.lims.common.SendMail;
```

```

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class AddUserAction extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                ActionErrors ae=new ActionErrors();
                HttpSession session=req.getSession(true);
                String uname=req.getParameter("username");
                String pwd=req.getParameter("password");
                String scientist = req.getParameter("scientist");
                String acclevel=req.getParameter("alevel");
                String email=req.getParameter("email");
                String newScientist="";
                String newEmail_id="";

                Connection con=null;
                Statement st=null;ResultSet rs=null;
                try{
                        //creating connection to database
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                        st=con.createStatement();
                        rs=st.executeQuery("select * from user_info where user_id='"+uname+"'");

                        //checking the existence of user in database
                        if(rs.next()){
                                ae.add("myerror",new ActionError("user.Already.exists"));
                                saveErrors(req,ae);
                                return (new ActionForward(am.getInput()));
                        }else if((!(email.contains("@")))||(!(email.contains("."))))){
                                ae.add("myerror",new ActionError("user.incorrect.mailId"));
                                saveErrors(req,ae);
                                return (new ActionForward(am.getInput()));
                        }
                        //inserting user data to database
                        else{
                                if(scientist.equals("Add New")){
                                        newScientist=req.getParameter("newScientist");
                                        newEmail_id=req.getParameter("newmailId");
                                        st.executeUpdate("insert into user_info values('"+newScientist+"','"+newSc
```

```
ientist+"',’lims’,2,’"+newEmail_id+"’)");
                                        }
                                        if(scientist.equals("Add New"))
                                                scientist=newScientist;

                                        st.executeUpdate("insert into user_info values(’"+uname+"’,’"+scientist+"’,’"+pwd+
"’,"+acclevel+",’"+email+"’)");
                                        SendMail abimail=new SendMail();
                                        Properties p=new Properties();
                                        String server="";

                                        p.load(new FileInputStream(session.getServletContext().getRealPath("//")+"//WEB-IN
F//config//"+"ConfigureMailling.properties"));
                                        server=p.getProperty("smtpServer");

                                        //String server="10.3.1.14";
                                        String from="LIMS";
                                        String to="";
                                        String cc="p.srikalyani@cgiar.org";
                                        String subject="Link to access LIMS System";
                                        String text="";
                                        //sending a mail containing LIMS links to the new user
                                        if(email.endsWith("@cgiar.org")){
                                                to=email;
                                                text="Dear "+uname+", \n \n\t Welcome to LIMS. The link to Access LIMS sys
tem is  http://10.3.1.159:8080/lims";
                                        }
                                        abimail.sendMailNoAttachment(server,from,to,cc,subject,text);

                                        }
                        }catch(Exception e){}
                        finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                        return am.findForward("result");
  }
  }
./WEB-INF/src/org/icrisat/lims/startup/login/RetrieveGenotypesAction.java


package org.icrisat.lims.startup.login;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

```

```
 7  import javax.servlet.ServletContext;
 8  import javax.servlet.http.HttpServletRequest;
 9  import javax.servlet.http.HttpServletResponse;
10  import javax.servlet.http.HttpSession;
11  import javax.sql.DataSource;
12
13  import org.apache.struts.Globals;
14  import org.apache.struts.action.Action;
15  import org.apache.struts.action.ActionForm;
16  import org.apache.struts.action.ActionForward;
17  import org.apache.struts.action.ActionMapping;
18
19  /**
20   *   created on Jul 15, 2008
21   * @author psrikalyani
22   */
23  public class RetrieveGenotypesAction extends Action{
24          Connection con=null;
25          ResultSet rs=null;
26          Statement stmt = null;
27          public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
28                  // TODO Auto-generated method stub
29                  String crop=req.getParameter("hiddenCrop");
30                  String genotypeDets="";
31                  try{
32                          HttpSession session=req.getSession(true);
33                          if((String)session.getAttribute("user")==null){
34                                  String msg="logout";
35                                 return am.findForward(msg);
36                          }
37  //                       creating connection to database
38                          ServletContext context = servlet.getServletContext();
39                          DataSource dataSource = (DataSource) context.getAttribute(Globals.DATA_SOURCE_KEY);
40                          con = dataSource.getConnection();
41
42                          stmt = con.createStatement();
43                          //rs=stmt.executeQuery("SELECT distinct genotype_master.genotype_id, user_psc.user_id FROM
 dna_electrophoresis INNER JOIN pcr_tracking_well ON (dna_electrophoresis.pcr_plate_id=pcr_tracking_well.pcr_plate_id) INN
ER JOIN genotype_master ON (pcr_tracking_well.lims_id=genotype_master.lims_id) INNER JOIN user_psc ON (genotype_master.ups
c_id=user_psc.upsc_id) where lower(user_psc.crop_name)='"+crop.toLowerCase()+"' order by user_id");
44                          //System.out.println("SELECT distinct genotype_master.genotype_id, user_psc.user_id FROM d
na_electrophoresis INNER JOIN pcr_marker_well ON (dna_electrophoresis.pcr_plate_id=pcr_marker_well.pcr_plate_id) Inner joi
n pcr_marker on pcr_marker_well.pcr_plate_id=pcr_marker.pcr_plate_id inner join pcr_tracking_well on pcr_marker.base_plate
=pcr_tracking_well.pcr_plate_id INNER JOIN genotype_master ON (pcr_tracking_well.lims_id=genotype_master.lims_id) INNER JO
IN user_psc ON (genotype_master.upsc_id=user_psc.upsc_id) where lower(user_psc.crop_name)='"+crop.toLowerCase()+"' order b
y user_id");
45                          rs=stmt.executeQuery("SELECT distinct genotype_master.genotype_id, user_psc.user_id FROM d
```

```
na_electrophoresis INNER JOIN pcr_marker_well ON (dna_electrophoresis.pcr_plate_id=pcr_marker_well.pcr_plate_id) Inner joi
n pcr_marker on pcr_marker_well.pcr_plate_id=pcr_marker.pcr_plate_id inner join pcr_tracking_well on pcr_marker.base_plate
=pcr_tracking_well.pcr_plate_id INNER JOIN genotype_master ON (pcr_tracking_well.lims_id=genotype_master.lims_id) INNER JO
IN user_psc ON (genotype_master.upsc_id=user_psc.upsc_id) where lower(user_psc.crop_name)='"+crop.toLowerCase()+"' order b
y user_id");
    46                          while(rs.next()){
    47                                  genotypeDets=genotypeDets+rs.getString(1)+"~!~"+rs.getString(2)+",,,";
    48                          }
    49                          req.getSession().setAttribute("gdets", genotypeDets);
    50                  } catch (Exception e) {
    51                          e.printStackTrace();
    52                          System.out.println("Exception" + e.toString());
    53                  } finally {
    54                          try {
    55                                  if (con != null)
    56                                          con.close();
    57                          } catch (Exception e) {
    58                                  System.out.println(e);
    59                          }
    60                  }
    61                  return am.findForward("genotypes");
    62          }
    63
    64
    65  }
./WEB-INF/src/org/icrisat/lims/startup/login/EditDetailsAction.java


     1  /*
     2   * Created on Sep 1, 2006
     3   *
     4   * TODO To change the template for this generated file go to
     5   * Window - Preferences - Java - Code Style - Code Templates
     6   */
     7  package org.icrisat.lims.startup.login;
     8
     9  import java.sql.Connection;
    10  import java.sql.PreparedStatement;
    11  import java.sql.ResultSet;
    12  import java.sql.Statement;
    13  import java.sql.Timestamp;
    14  import javax.sql.DataSource;
    15
    16  import javax.servlet.ServletContext;
    17  import javax.servlet.http.HttpServletRequest;
    18  import javax.servlet.http.HttpServletResponse;
    19  import javax.servlet.http.HttpSession;
    20
```

```
import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;


/**
 * @author tpraveenreddy
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class EditDetailsAction  extends Action{

        Connection con=null;
        ///updates the Project, Study and Crop data
        public String upSPCDetails(HttpSession session, ActionForm form, HttpServletRequest req, String ups, Conne
ction con){

                String msg="";
                String user="";

                user=(String) req.getSession().getAttribute("user");
                String strProjectName=req.getParameter("projecttxt");
                String strStudyName=req.getParameter("studytxt");
                String strCropName=req.getParameter("croptxt");
                String cotType=req.getParameter("cropCotTxt");
                String sessCot=(String)session.getAttribute("cotType");

                try{
                        ///timestamp code
                        java.util.Date utilDate=new java.util.Date(System.currentTimeMillis());
                        Timestamp sqldate=new Timestamp(utilDate.getTime());
                        Timestamp ts=new Timestamp(sqldate.getTime());

                        String strUps=strProjectName+strStudyName+strCropName+user;
                        PreparedStatement pstmt=con.prepareStatement("Update user_psc SET upsc_id=?,project_name=?
,study_name=?,crop_name=?,date_of_correction=? where upsc_id='"+ ups +"'");

                        pstmt.setString(1,strUps);
                        pstmt.setString(2,strProjectName);
                        pstmt.setString(3,strStudyName);
                        pstmt.setString(4,strCropName);
                        pstmt.setTimestamp(5,ts);
                        pstmt.executeUpdate();

                        if(cotType!=sessCot){
```

```
                                PreparedStatement pstmt1=con.prepareStatement("update lims_crops set cotyledon_typ
e=? where crop_name='"+strCropName+"'");
                                pstmt1.setString(1, cotType);
                                pstmt1.executeUpdate();
                        }

                        msg="editupd";
                        pstmt.close();
                }catch(Exception e){
                        e.printStackTrace();
                }
        return msg;
}


        public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse
res)
        throws Exception
        {
                //retrieval and save code

                        HttpSession session=req.getSession(true);
//                      user identification
                        if((String)session.getAttribute("user")==null){
                                 String msg="logout";
                                return map.findForward(msg);
                        }

                        String msg="";
                        String user="";
                        user=(String) req.getSession().getAttribute("user");
                        ResultSet cotRs=null;
                        Statement cotSt=null;
                        String cotyledonType="";
                        try{
//                              creating connection to database
                                ServletContext context = servlet.getServletContext();
                                DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                                con=dataSource.getConnection();
                                Statement stmtCrop=con.createStatement();
                                cotSt=con.createStatement();

                                if (req.getQueryString().equals("upd")){
                                        //create upsc_id
                                        String upscid=req.getParameter("hpsc");
                                        String upd=upSPCDetails(session,form,req,upscid,con);
                                        msg=upd;
                                }else{
```

```
                                        String strProject=(String) req.getParameter("project");
                                        String strStudy=(String) req.getParameter("study");
                                        String strCrop=(String) req.getParameter("crop");
                                        String strUpsc_id=strProject+strStudy+strCrop+user;
                                        String strPSCCreated="";
                                        ResultSet rsCrop=stmtCrop.executeQuery("select upsc_id from experiment_mas
ter where Lower(upsc_id)='"+ strUpsc_id.toLowerCase() +"'");
                                        int intRecordCount=0;
                                        while(rsCrop.next()){
                                                intRecordCount=intRecordCount+1;
                                        }
                                        cotRs=cotSt.executeQuery("select cotyledon_type from lims_crops where crop
_name='"+strCrop+"'");
                                        while(cotRs.next()){
                                                cotyledonType=cotRs.getString(1);
                                        }
                                        if(intRecordCount!=0){
                                                strPSCCreated="";
                                                strProject="";
                                                strStudy="";
                                                strPSCCreated="created";
                                                req.setAttribute("pscCreated",strPSCCreated);
                                                req.setAttribute("txtproject",strProject);
                                                req.setAttribute("txtstudy",strStudy);
                                                req.setAttribute("txtcrop",strCrop);
                                                req.setAttribute("oldpsc",strUpsc_id);
                                        }else{

                                                strPSCCreated="notcreated";
                                                req.setAttribute("pscCreated",strPSCCreated);
                                                req.setAttribute("txtproject",strProject);
                                                req.setAttribute("txtstudy",strStudy);
                                                req.setAttribute("txtcrop",strCrop);
                                                req.setAttribute("oldpsc",strUpsc_id);

                                        }
                                        req.getSession().setAttribute("cotType", cotyledonType);
                                        rsCrop.close();
                                        stmtCrop.close();
                                        msg="editpsc";
                                }
                                //con.close();
                        }catch(Exception e){
                                e.printStackTrace();
                                System.out.println("Exception"+ e.toString());
                        }       finally{
                              try{
                                        if(con!=null) con.close();
```

```
157                                 }catch(Exception e){System.out.println(e);}
158                                }
159
160                 return map.findForward(msg);
161         }
162 }
```

./WEB-INF/src/org/icrisat/lims/startup/login/DetailsAction.java

```
  1 //Inserting information on user,project,study,crop
  2 /*
  3  * Created on Jul 26, 2006
  4  *
  5  * TODO To change the template for this generated file go to
  6  * Window - Preferences - Java - Code Style - Code Templates
  7  */
  8 package org.icrisat.lims.startup.login;
  9
 10
 11 import java.sql.Connection;
 12 import java.sql.PreparedStatement;
 13 import java.sql.Statement;
 14 import java.sql.Timestamp;
 15 import java.util.Vector;
 16
 17 import javax.servlet.ServletContext;
 18 import javax.servlet.http.HttpServletRequest;
 19 import javax.servlet.http.HttpServletResponse;
 20 import javax.servlet.http.HttpSession;
 21 import javax.sql.DataSource;
 22
 23 import org.apache.struts.Globals;
 24 import org.apache.struts.action.Action;
 25 import org.apache.struts.action.ActionForm;
 26 import org.apache.struts.action.ActionForward;
 27 import org.apache.struts.action.ActionMapping;
 28 import org.apache.struts.action.DynaActionForm;
 29 import org.icrisat.lims.common.RetrieveCropAction;
 30 /**
 31  * @author tpraveenreddy
 32  *
 33  * TODO To change the template for this generated type comment go to
 34  * Window - Preferences - Java - Code Style - Code Templates
 35  */
 36 public class DetailsAction extends Action{
 37
 38         public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse
res)
```

```
        throws Exception
        {
                HttpSession session=req.getSession(true);
                String msg="";
                String str="";
                String queryType="";
                // user identification
                if((String)session.getAttribute("user")==null){
                        msg="logout";
                        return map.findForward(msg);
                }
                DynaActionForm dyna=(DynaActionForm) form;
                session.setAttribute("al", session.getAttribute("access_level")+"");
                String cotyledon="";

                String projectname=dyna.get("project").toString();
                String cropname=dyna.get("crop").toString();
                String studyname=dyna.get("study").toString();
                String userid=(String)session.getAttribute("user");
                String reportname=dyna.get("reportgen").toString();

                req.getSession().setAttribute("reportgen", reportname);

                if(session!=null){
                        session.removeAttribute("queryType");
                        session.removeAttribute("PM");
                }
                queryType=req.getParameter("queryType");
                session.setAttribute("queryType", queryType);

                Connection con=null;
                Statement st=null;
                try{
                        //creating connection to database
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                        if(req.getParameter("param").equals("report")){
                                String cropna=dyna.get("reportcrop").toString();
                                cropna=cropna.trim();
        //                      create upsc_id
                                String usercid="";
                                usercid=cropna+(String)session.getAttribute("user");

                                if(queryType.equals("userdata"))
                                        usercid=req.getParameter("reportuser");
                                else if(queryType.equals("onlydata"))
```

```
                                        usercid=cropna+(String)session.getAttribute("user");

                                    req.getSession().setAttribute("reportcrop",cropna);
                                    req.getSession().setAttribute("usercid", usercid);
                                    if(queryType.equals("wholedata")){
                                        RetrieveCropAction crop=new RetrieveCropAction();
                                        Vector v1=crop.wholeCrops(con);
                                        session.setAttribute("RetrievecropNames",v1);
                                        str="wholedata";
                                    }
                                    if(queryType.equals("userdata")){
                                        str="userdata";
                                    }
                                    if(queryType.equals("onlydata")){
                                        str="report";
                                    }
                                }else{
                                    //create upsc_id
                                    String upscid="";
                                    ///timestamp code
                                    upscid=projectname+studyname+cropname+userid;
                                java.util.Date utilDate=new java.util.Date(System.currentTimeMillis());
                                    Timestamp sqldate=new Timestamp(utilDate.getTime());
                                    Timestamp ts=new Timestamp(sqldate.getTime());
                                    st=con.createStatement();

                                    String pooling=(String)dyna.get("dnapool");
                                    session.setAttribute("pooling",pooling);

                                    if((!(req.getParameter("dataForm").equals(""")))&&(req.getParameter("dataForm").equ
als("protocols"))){
                                        str="protocols";
                                        if(req.getParameter("cropPM").equals("Add New Crop")){
                                            cropname=req.getParameter("cropPMtxt");
                                            cotyledon=req.getParameter("cotyledon");

                                            //System.out.println("cotyledon="+cotyledon+"    crop="+cropname);
                                            if(cropname!="")
                                                st.executeUpdate("insert into lims_crops values('"+cropnam
e+"','"+cotyledon+"')");
                                        }else{
                                            cropname=req.getParameter("cropPM");
                                        }
                                        session.setAttribute("crop", cropname);
                                        session.setAttribute("PM", req.getParameter("dataForm"));
                                    }
                                    //check the project, study and crop field values
                                    if (projectname==null || studyname==null || cropname==null)
```

```
                                        return map.findForward("nullpsc");

                                    projectname=projectname.trim();
                                    cropname=cropname.trim();
                                    studyname=studyname.trim();


                                    if(projectname.equals("Add New Project") || studyname.equals("Add New Study") || c
ropname.equals("Add New Crop")){
                                        if (projectname.equals("Add New Project"))
                                                projectname=dyna.get("projecttxt").toString().trim();

                                        if (studyname.equals("Add New Study"))
                                                studyname=dyna.get("studytxt").toString().trim();

                                        if (cropname.equals("Add New Crop")){
                                                cropname=dyna.get("croptxt").toString().trim().toLowerCase();
                                                cotyledon=req.getParameter("cotyledon1");
                                                st.executeUpdate("insert into lims_crops values('"+cropname+"','"+
cotyledon+"')");
                                        }


                                        upscid=projectname+studyname+cropname+userid;

                                        //insert project,study,crop and userid into database
                                        PreparedStatement pstmt=con.prepareStatement("insert into user_psc values(
?,?,?,?,?,?,?,?)");
                                        pstmt.setString(1,upscid);
                                        pstmt.setString(2,projectname);
                                        pstmt.setString(3,studyname);
                                        pstmt.setString(4,cropname);
                                        pstmt.setString(5,userid);
                                        pstmt.setTimestamp(6,ts);
                                        pstmt.setTimestamp(7,null);
                                        pstmt.setString(8, pooling);
                                        pstmt.executeUpdate();
                                        //msg="insert";
                                        pstmt.close();
                                        //str="psc";

                                        str="psc";
                                    }else if(!(req.getParameter("dataForm").equals("protocols"))){
                                        str="psc";
                                    }
                                    req.getSession().setAttribute("project",projectname);
                                    req.getSession().setAttribute("study",studyname);
                                    req.getSession().setAttribute("crop",cropname);
```

```
                                req.getSession().setAttribute("upsc", upscid);
                        }
                        msg="psc";
                }catch(Exception e){
                        e.printStackTrace();
                }finally{
                        try{
                        if(con!=null) con.close();
                 }catch(Exception e){System.out.println(e);}
                }
                session.setAttribute("param", str);
                return map.findForward(msg);
        }
}
```

./WEB-INF/src/org/icrisat/lims/startup/login/ChangePwdAction.java

```
/*
 * Created on Dec 14, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.startup.login;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import javax.sql.DataSource;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;


/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
```

```
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class ChangePwdAction extends Action{

        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                ActionErrors ae=new ActionErrors();
                Connection con=null;
                Statement st=null;
                Statement st1=null;
                ResultSet rs=null;
                try{
                        //creating connection to database
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        String password="";
                        st1=con.createStatement();
                        st=con.createStatement();
                        rs=st1.executeQuery("select Password from User_Info where User_Id='"+req.getParameter("uname")+"'");
                        while(rs.next()){
                                password=rs.getString(1);
                        }

                        if(!password.equalsIgnoreCase(req.getParameter("oldpass"))){
                        ae.add("oldPassword",new ActionError("oldpass.invalid"));
                        saveErrors(req,ae);
                        //con.close();
                                return (new ActionForward(am.getInput()));
                        }

                        if(req.getParameter("newpass").equals("")){
                                ae.add("NewPassword",new ActionError("give.newpass"));
                                saveErrors(req,ae);
                                //con.close();
                                return (new ActionForward(am.getInput()));

                        }else if(!req.getParameter("newpass").equalsIgnoreCase(req.getParameter("confirmpass"))){
                                ae.add("ConfirmPassword",new ActionError("confirmpass.newpass.equal"));
                                saveErrors(req,ae);
                                //con.close();
                                return (new ActionForward(am.getInput()));
                        }else{
                                st.executeUpdate("update User_Info set Password='"+req.getParameter("newpass")+"' where User_Id='"+req.getParameter("uname")+"'");
                                req.getSession().setAttribute("logflag","relogin");
```

```
                            //   con.close();
                    }

                        }catch(Exception e){System.out.println("Exception:"+e); }
                        finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                  return am.findForward("update");
          }
  }
```

./WEB-INF/src/org/icrisat/lims/startup/login/EditUserAction.java

```
/*
 * Created on Oct 3, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.startup.login;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import java.io.PrintWriter;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
```

```
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class EditUserAction extends Action{

        Connection con=null;
                public ArrayList usernamesList(String un,HttpServletRequest req, Connection con){

                        ArrayList userNameList=new ArrayList();String alevel="";
                        try{
                                Statement st = con.createStatement();
                                ResultSet rs=st.executeQuery("select user_id, access_level from user_info where us
er_id!='Administrator'");
                                while(rs.next()){
                                        userNameList.add(rs.getString(1));
                                        alevel=rs.getString(2);
                                }
                                req.getSession().setAttribute("alevel",alevel);
                        }catch(Exception e){
                                e.printStackTrace();
                        }
                        return userNameList;
                }
                public String setUserDetails(HttpSession session,ActionForm form,String user, Connection con){
                        String msg="";
                        String un="";String sc=""; String pass=""; String al=""; String mail="";
                        try{
                                Statement st = con.createStatement();
                                ResultSet rs = st.executeQuery("select user_id,  password, scientist, access_level
,email from user_info where user_id='"+user+"'");
                                while (rs.next()){
                                        un=rs.getString(1);
                                        pass=rs.getString(2);
                                        if(rs.getString(3)!=null)
                                                sc=rs.getString(3);
                                        else
                                                sc="";
                                        al=String.valueOf(rs.getInt(4));
                                        if(rs.getString(5)!=null)
                                                mail=rs.getString(5);
                                        else
                                                mail="";
                                        session.setAttribute("u",un);
                                        session.setAttribute("p",pass);
                                        session.setAttribute("s",sc);
                                        session.setAttribute("al",al);
                                        session.setAttribute("mail",mail);
                                        msg="sel";
                                }
```

```
79                          }catch(Exception e){
80                                  e.printStackTrace();
81                          }
82                          return msg;
83                  }
84                  public ArrayList getScientists(Connection con){
85                          ArrayList scientists=new ArrayList();
86                          try{
87                                  Statement st = con.createStatement();
88                                  ResultSet rs = st.executeQuery("select distinct(scientist) from user_info");
89                                  while (rs.next()){
90                                          if(rs.getString(1)!=null)
91                                                  scientists.add(rs.getString(1));

92                                  }
93                          }catch(Exception e){
94                                  e.printStackTrace();
95                          }
96                          return scientists;
97                  }
98                  public String upUserDetails(HttpSession session, HttpServletRequest req, Connection con){
99                          String msg="";
100                         try{
101                                 Statement st=con.createStatement();
102                                 ResultSet rs=null;
103                                 String eusername=req.getParameter("eusername");
104                                 String escientist = req.getParameter("escientist");
105                                 String epass = req.getParameter("epassword");
106                                 String eal = req.getParameter("ealevel");
107                                 String editmail=req.getParameter("editemail");
108                                 if(!(eusername.equalsIgnoreCase(session.getAttribute("u").toString()))){
109                                         rs=st.executeQuery("select * from user_info where user_id='"+eusername+"'"
);
110                                         if(rs.next()){
111                                                 msg="duplicate";
112                                                 return msg;
113                                         }
114                                 }
115                                 if((!(editmail.contains("@")))||(!(editmail.contains"."))){

116                                         msg="emailerror";
117                                         return msg;
118                                 }
119                                 PreparedStatement pstmt=con.prepareStatement("update user_info SET user_id=?,scien
tist=?,password=?,access_level=?, email=? where user_id='"+session.getAttribute("u").toString()+"'");
120                                         pstmt.setString(1,eusername);
121                                         pstmt.setString(2,escientist);
122                                         pstmt.setString(3,epass);
```

```
123                                     pstmt.setInt(4,Integer.parseInt(eal));
124                                     pstmt.setString(5,editmail);
125                                     int s=pstmt.executeUpdate();
126                                     if (s>0){
127                                             msg="upt";
128                                     }
129                                     pstmt.close();
130                             }catch(Exception e){
131                             e.printStackTrace();
132                             }
133                             return msg;
134                     }
135                     public ActionForward execute(ActionMapping am, ActionForm af,
136                                     HttpServletRequest req, HttpServletResponse res) throws Exception {
137                             HttpSession session = req.getSession(true);
138                             ActionErrors ae=new ActionErrors();
139                             //              user identification
140
141                             if((String)session.getAttribute("user")==null){
142                                     String msg="logout";
143                                     return am.findForward(msg);
144                             }
145                             String uname=(String) session.getAttribute("upsc");
146                             String msg="";
147                             try{
148                                     ServletContext context = servlet.getServletContext();
149                                     DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
150                                     con=dataSource.getConnection();
151                                     if(!(req.getQueryString().equals("username")||req.getQueryString().equals("userred
ata")||req.getQueryString().equals("dataupdate"))){
152
153                                             Statement stmt=con.createStatement();
154                                             ResultSet rs=stmt.executeQuery("select user_id from User_Info where Lower(
user_id) like Lower('"+req.getParameter("pass")+"%') order by user_id asc");
155                                             PrintWriter writer = res.getWriter();
156                                             res.setContentType("text/plain");
157                                             res.setHeader("Cache-Control", "no-cache");
158                                             String usersList="";
159                                             while(rs.next()){
160                                             usersList=usersList+rs.getString(1)+"!~!";
161                                     }
162                                             writer.println(usersList);
163                                             return null;
164                                     }else{
165                                             if (req.getQueryString().equals("username")){
166                                                     /*ArrayList EditUsernamesList = usernamesList(uname,req,con);
167                                                     if(!EditUsernamesList.isEmpty()){
168                                                             msg="sel";
```

```
169                                                     session.setAttribute("unList",EditUsernamesList);

170                                                 }else{
171                                                         msg="emptyeditexpt";
172                                                 }*/
173                                                 msg="sel";
174                                         }else if (req.getQueryString().equals("userredata")){
175                                                 String ss=setUserDetails(req.getSession(true),af,req.getParameter(
"uname"),con);
176                                                 ArrayList scientists=getScientists(con);
177                                                 session.setAttribute("scientists", scientists);
178                                                 msg=ss;
179                                         }else if (req.getQueryString().equals("dataupdate")){
180                                                 String up=upUserDetails(session,req,con);

181                                                 if(up.equals("duplicate")){
182                                                         ae.add("myerrors",new ActionError("user.Already.exists"));
183                                                         saveErrors(req,ae);
184                                                         return (new ActionForward(am.getInput()));
185                                                 }else if(up.equals("emailerror")){

186                                                         ae.add("myerrors",new ActionError("user.incorrect.mailId")
);
187                                                         saveErrors(req,ae);
188                                                         return (new ActionForward(am.getInput()));
189                                                 }
190                                                 msg=up;
191                                         }
192                                 }
193
194                         }catch(Exception e){
195                                 System.out.println(e);
196                         }finally{
197                               try{
198                                         if(con!=null) con.close();
199                                  }catch(Exception e){System.out.println(e);}
200                                 }
201                         return am.findForward(msg);
202                 }
203  }
```

./WEB-INF/src/org/icrisat/lims/startup/login/LogoutAction.java

```
  1  package org.icrisat.lims.startup.login;
  2
  3  import java.sql.Connection;
  4  import java.sql.Statement;
  5  import java.text.DateFormat;
```

```

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 *   created on Jul 11, 2008
 * @author psrikalyani
 */
public class LogoutAction extends Action{
        Connection con=null;
        Statement st=null;
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                // TODO Auto-generated method stub
                HttpSession session = req.getSession(true);
                try{
                        java.util.Date thedate = new java.util.Date();
                        java.text.SimpleDateFormat dateFormat = new java.text.SimpleDateFormat("yyyy-MM-dd");
                        java.text.DateFormat timeFormat = DateFormat.getTimeInstance();
                        String date = dateFormat.format(thedate);
                        String time=timeFormat.format(thedate);
                        String user=(String)session.getAttribute("user");
                        String ip = req.getRemoteAddr();
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource) context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con = dataSource.getConnection();
                        st = con.createStatement();
                        st.executeUpdate("update access_details set logout_time='"+time+"' where login_name='"+use
r+"' and ip_address='"+ip+"' and access_date='"+date+"' ");
                        if (session != null) {
                                session.invalidate();
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }finally {
                        try {
                                if (con != null)
                                        con.close();
                        } catch (Exception e) {
```

```
                                System.out.println(e);
                            }
                    }
                    return am.findForward("logout");
            }


}./WEB-INF/src/org/icrisat/lims/startup/login/StartupDB.java


//Retrieval of project, studies and crop according to user
/*
 * Created on Jul 27, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.startup.login;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;
import javax.servlet.http.HttpSession;


import javax.servlet.http.HttpServletRequest;
import javax.servlet.ServletContext;

/**
 * @author tpraveenreddy
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class StartupDB {

        Connection con=null;
        int i=0;
        //Retrieves the study names
        public ArrayList studyList(String strQ,HttpServletRequest req,ServletContext sc, Connection con)
        {

                ArrayList studyNameList=new ArrayList();
                try
                {

```

```
                        /*DataSource dataSource = (DataSource)sc.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();*/

                        Statement stmtStudy=con.createStatement();

                        ResultSet rsStudy=stmtStudy.executeQuery(strQ);

                        while (rsStudy.next())
                        {
                                //DynaActionForm nfb=new DynaActionForm();
                                //nfb.set("study",rsStudy.getString("Study_Name"));
                                studyNameList.add(rsStudy.getString("study_name"));
                                i++;

                        }
                        req.setAttribute("Studycount",new Integer(i));
                        rsStudy.close();
                        stmtStudy.close();
                        //con.close();

                }
                catch(Exception e)
                {
                        e.printStackTrace();
                }

                return studyNameList;
        }

        ///retrieves project names
        public ArrayList projectList(String un,HttpServletRequest req,ServletContext sc,Connection con)
        {
                HttpSession session = req.getSession(true);
                if(session!=null){
                        session.removeAttribute("SCount");
                }
                ArrayList projectNameList=new ArrayList();
                try
                {

                        //Connection con2=null;
                        /*DataSource dataSource = (DataSource)sc.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();*/
                        Statement stmtProject=con.createStatement();

                        ResultSet rsProject=stmtProject.executeQuery(un);


```

```
                        while (rsProject.next())
                        {
                                //DynaActionForm nfb=new DynaActionForm();
                                //nfb.set("project",rsProject.getString("Project_Name"));
                                projectNameList.add(rsProject.getString("project_name"));
                                i++;
                        }
                        req.setAttribute("Count",new Integer(i));
                        session.setAttribute("SCount",new Integer(i));
                        rsProject.close();
                        stmtProject.close();
                        //con.close();

                }
                catch(Exception e)
                {
                        e.printStackTrace();
                }

                return projectNameList;
        }

        ///retrieve crop names
        public ArrayList cropList(String strQC, HttpServletRequest req,ServletContext sc, Connection con)
        {

                ArrayList cropNameList=new ArrayList();
                try
                {
                /*      DataSource dataSource = (DataSource)sc.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();*/

                        Statement stmtCrop=con.createStatement();
                        ResultSet rsCrop=stmtCrop.executeQuery(strQC);

                        while (rsCrop.next())
                        {
                                //DynaActionForm nfb=new DynaActionForm();
                                //nfb.set("crop",rsCrop.getString("Crop_Name"));
                                cropNameList.add(rsCrop.getString("crop_name"));

                                i++;
                        }
                        rsCrop.close();
                        stmtCrop.close();
                        //con.close();

                }
```

```
                catch(Exception e)
                {
                        e.printStackTrace();
                        //System.out.println("crop"+ e);
                }

                return cropNameList;
        }

//      /retrieve user names
        public ArrayList userList(String strQC, HttpServletRequest req,ServletContext sc, Connection con)
        {

                ArrayList userNameList=new ArrayList();
                try
                {
                /*      DataSource dataSource = (DataSource)sc.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();*/

                        Statement stmtUser=con.createStatement();
                        ResultSet rsCrop=stmtUser.executeQuery(strQC);

                        while (rsCrop.next())
                        {
                                //DynaActionForm nfb=new DynaActionForm();
                                //nfb.set("crop",rsCrop.getString("Crop_Name"));
                                userNameList.add(rsCrop.getString("user_id"));

                                i++;
                        }
                        rsCrop.close();
                        stmtUser.close();
                        //con.close();

                }
                catch(Exception e)
                {
                        e.printStackTrace();
                        //System.out.println("crop"+ e);
                }

                return userNameList;
        }



}
```

./WEB-INF/src/org/icrisat/lims/startup/login/RetrieveDataAction.java

```
     1  package org.icrisat.lims.startup.login;
     2
     3  import java.io.BufferedInputStream;
     4  import java.io.DataInputStream;
     5  import java.io.File;
     6  import java.io.FileInputStream;
     7  import java.io.FileNotFoundException;
     8  import java.io.IOException;
     9  import java.io.PrintWriter;
    10  import java.sql.Connection;
    11  import java.sql.ResultSet;
    12  import java.sql.Statement;
    13  import java.util.ArrayList;
    14  import java.util.zip.ZipEntry;
    15  import java.util.zip.ZipInputStream;
    16
    17  import javax.servlet.ServletContext;
    18  import javax.servlet.http.HttpServletRequest;
    19  import javax.servlet.http.HttpServletResponse;
    20  import javax.servlet.http.HttpSession;
    21  import javax.sql.DataSource;
    22
    23  import org.apache.struts.Globals;
    24  import org.apache.struts.action.Action;
    25  import org.apache.struts.action.ActionForm;
    26  import org.apache.struts.action.ActionForward;
    27  import org.apache.struts.action.ActionMapping;
    28  import org.apache.struts.action.DynaActionForm;
    29
    30  /**
    31   * created on Jul 15, 2008
    32   * @author swapnanair
    33   */
    34  public class RetrieveDataAction extends Action {
    35
    36          public ActionForward execute(ActionMapping map, ActionForm aform,HttpServletRequest req, HttpServletRespon
se res) throws Exception {
    37                  Connection con=null;
    38                  Statement stmt=null;
    39                  ResultSet rs=null;
    40                  Statement stmt1=null;
    41                  ResultSet rs1=null;
    42                  Statement stmt2=null;
    43                  ResultSet rs2=null;
    44                  Statement stmt3=null;
```

```
                ResultSet rs3=null;
                String marker="";
                String str="";

                ArrayList genoarr=new ArrayList();
                ArrayList markerarr=new ArrayList();

                try{
                        PrintWriter writer=res.getWriter();
                        res.setContentType("text/xml");
                        res.setHeader("Cache-Control", "no-cache");

                        HttpSession session=req.getSession(true);
                        String msg="";

                        if((String)session.getAttribute("user")==null){
                                msg="logout";
                                return map.findForward(msg);
                        }
                        if(session!=null){
                                session.removeAttribute("ReportcropName");
                                session.removeAttribute("ReportMarkers");
                                session.removeAttribute("Rcrop");
                        }
                        //database connection
                        ServletContext context=servlet.getServletContext();
                        DataSource datasource=(DataSource) context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=datasource.getConnection();

                        stmt=con.createStatement();
                        stmt1=con.createStatement();
                        stmt2=con.createStatement();
                        stmt3=con.createStatement();
                        //System.out.println("***************   Crop="+req.getParameter("rtype"));
                        if(req.getParameter("rtype")!=null){
                                rs2=stmt2.executeQuery("SELECT distinct Genotype_Master.Genotype_Id from pcr_track
ing_well inner join pcr_marker on pcr_marker.base_plate=pcr_tracking_well.pcr_plate_id inner join genotype_master on genot
ype_master.lims_id=pcr_tracking_well.lims_id inner join pcr_marker_well on pcr_marker_well.pcr_plate_id=pcr_marker.pcr_pla
te_id INNER JOIN user_psc on Genotype_Master.upsc_id=user_psc.upsc_id where Lower(user_psc.crop_name) ='"+req.getParameter
("Fcrop").toLowerCase()+"'");
                                while(rs2.next()){
                                        genoarr.add(rs2.getString(1));
                                }
                                rs3=stmt3.executeQuery("select marker_name from lims_pcr_markers where Lower(crop)
 ='"+req.getParameter("Fcrop").toLowerCase()+"'");
                                while(rs3.next()){

                                        if((rs3.getString(1).startsWith("m13")) || (rs3.getString(1).startsWith("M
```

```
13"))){
                                                String[] m13marker=rs3.getString(1).split("~;;~");

                                                markerarr.add(m13marker[0]);

                                        }else{
                                                markerarr.add(rs3.getString(1));
                                        }

                                }

                                ////////////Ajax XMLResponse code//////////////

                                writer.println("<RetrieveFile>");
                                for(int i=0;i<genoarr.size();i++){

                                        writer.println("<genotype><![CDATA["+genoarr.get(i)+"]]></genotype>");
                                }

                                for(int j=0;j<markerarr.size();j++){

                                        writer.println("<marker><![CDATA["+markerarr.get(j)+"]]></marker>");

                                }
                                writer.println("</RetrieveFile>");
                                return null;
                                ////////////End of Ajax XMLResponse code////////

                        }else{
                                //retrieveing primer sequences
                                DynaActionForm dyna= (DynaActionForm) aform;
                                String forSeq="";
                                String revSeq="";
                                if(req.getParameter("rparam").equals("primer")){
                                        String crop=req.getParameter("hCrop");
                                        rs=stmt.executeQuery("select marker_name,primer_sequences_forward,primer_s
equences_reverse from lims_pcr_markers where Lower(crop)='"+crop.toLowerCase()+"' order by marker_name asc");
                                        while(rs.next()){
                                                //System.out.println("***********  :"+rs.getString(3));
                                                if(rs.getString(3)!=""){

                                                        revSeq=rs.getString(3);

                                                }else{
                                                        revSeq="null";
                                                }
                                                if(rs.getString(2)!=""){
```

```
                                                        forSeq=rs.getString(2);

                                                }else{
                                                        forSeq="null";

                                                }
                                                marker=marker+rs.getString(1)+"~!~"+forSeq+"~!~"+revSeq+",";
                                        }
                                        session.setAttribute("ReportcropName", crop);
                                        req.getSession().setAttribute("ReportMarkers", marker);
                                        if(req.getParameter("print").equals("no"))
                                                str="reportpage";
                                        else
                                                str="printpage";
                                }else if(req.getParameter("rparam").equals("filetype")){
                                        if(session != null){
                                                session.removeAttribute("SFileCrop");
                                                session.removeAttribute("SesMarker");
                                                session.removeAttribute("SesGenotype");
                                                session.removeAttribute("FileRetrievalType");
                                        }
                                        String filecrop=(String) dyna.get("FilescropsList");
                                        String typeoffile=(String) dyna.get("filesList");
                                        String path="";

                                        if(typeoffile.equals(".plt"))
                                        {
                                                path="PLTFiles";
                                        }else if(typeoffile.equals("ABI"))
                                        {
                                                path="UploadFolder//ABIRawFiles";
                                        }

                                        ArrayList studynames=new ArrayList();
                                        ArrayList usernames=new ArrayList();
                                        ArrayList arrlist=new ArrayList();
                                        ArrayList arrlist1=new ArrayList();
                                        ArrayList ABIarrfiles=new ArrayList();

                                        ArrayList studyarr=new ArrayList();
                                        ArrayList userarr=new ArrayList();

                                        String[] arrfilesList=null;
                                        String arrfilescont=null;
                                        String arrmarkerList=null;
                                        ArrayList arrfiles=new ArrayList();
                                        rs1=stmt1.executeQuery("select distinct study_name,user_id from user_psc w
here lower(crop_name)='"+filecrop.toLowerCase()+"'");
```

```
175                                             while(rs1.next()){
176                                                     studynames.add(rs1.getObject(1));
177                                                     usernames.add(rs1.getString(2));

178                                             }
179                                             for(int i=0;i<studynames.size();i++){
180
181                                                     File dir=new File(session.getServletContext().getRealPath("//")+"/
/"+ path + "//" +studynames.get(i)+"_"+filecrop+"_"+usernames.get(i));
182                                                     if(!dir.exists()){

183                                                             //return map.findForward(str);
184                                                     }else{
185                                                             studyarr.add(studynames.get(i));
186                                                             userarr.add(usernames.get(i));
187                                                     }
188                                             }
189
190                                             for(int i=0;i<studyarr.size();i++){
191                                                     File dir=new File(session.getServletContext().getRealPath("//")+"/
/"+ path + "//" +studyarr.get(i)+"_"+filecrop+"_"+userarr.get(i));
192                                                     String[] files=dir.list();
193                                                     String file1="";
194                                                     for(int k = 0; k < files.length; k++){
195                                                             file1=files[k];
196                                                             arrlist1.add(file1);
197                                                     }
198                                                     String filename=session.getServletContext().getRealPath("//")+"//"
+ path + "//" +studyarr.get(i)+"_"+filecrop+"_"+userarr.get(i);
199
200                                                     ArrayList filesarr=new ArrayList();
201                                                     filesarr.add(filename);
202                                                     String file="";
203
204                                                     for(int j=0;j<filesarr.size();j++){
205                                                             file=(String) filesarr.get(j);
206                                                             arrlist.add(file);
207                                                     }
208                                             }
209
210                                             //************** Retrieval Of PLT files*******************//
211                                             if(typeoffile.equals(".plt")){
212                                                     if(session !=null){
213                                                             session.removeAttribute("Rpathlist");

214                                                     }
215                                                     for(int i=0;i<arrlist.size();i++){
```

```
String s1="";
ArrayList filename99=new ArrayList();
for(int k=0;k<arrlist1.size();k++){

        filename99.add((String)arrlist.get(i)+"//"+(String) arrlist1.get(k));
}
for(int s=0;s<filename99.size();s++){
File filename1=new File((String)filename99.get(s));

String FileTYPE = filename1.getName();
String FileTYPE1=FileTYPE.substring(FileTYPE.indexOf(".")); 

//************** Retrieval Of PLT files******************//
//if(filename1.exists() && FileTYPE1.equals(".PLT")){
if(filename1.exists()){

//File f = new File(filename1);
FileInputStream fis = new FileInputStream(filename1);
BufferedInputStream bis = new BufferedInputStream(fis);
DataInputStream dis = new DataInputStream(bis);
String record = null;
String[] arrrecord=null;
try {
   while ( (record=dis.readLine()) != null ) {

        arrrecord=record.split("\t");
        ArrayList fileContents=new ArrayList();
        for(int w=0;w<arrrecord.length;w++){

                fileContents.add(arrrecord[w]);

        }
        //System.out.println(fileContents);
        for(int v=5;v<fileContents.size()-4;v++){

                arrfilescont=(String)fileContents.get(v);

                if(arrfilescont.contains("_")){

                        arrfilesList=arrfilescont.split("_");
                        for(int t=1;t<arrfilesList.length-1;t++){

                                if((arrfilesList[t].starts
```

```
With("m13")) || (arrfilesList[t].startsWith("M13")))
   255                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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ilesList[t]+"_"+arrfilesList[t+1];
   257                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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   259                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
ilesList[t];
   260                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   261
   262                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
ypes").equals(arrfilesList[0]) && req.getParameter("markers").equals(arrmarkerList)){
   263
   264                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
lename1.getName();
   265                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
";
   266                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
"";
   267                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
yarr.size();q++){
   268
   269                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
new File(session.getServletContext().getRealPath("//")+"//"+ path + "//" +studyarr.get(q)+"_"+filecrop+"_"+userarr.get(q)+
 "//" +filepath);
   270                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
ists()){
   271                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
nalpath=path + "//" +studyarr.get(q)+"_"+filecrop+"_"+userarr.get(q);
   272                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
serStudy=studyarr.get(q)+"~!!~"+userarr.get(q);
   273                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   274                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   275
   276                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
   277
   278                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
"+finalpath+ "/"+filepath+"' target=new>"+filepath+"</a>!~!"+SUserStudy;
   279
   280                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
th);
   281
   282                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
check=null;
   283                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
duplicates=new ArrayList();
```

```
   284                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for(int z=
0;z<arrfiles.size();z++){
   285                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
```

```
   319                                                                                ABIfilenames.add((String)arrlist.get(i)+"//"+(Stri
ng) arrlist1.get(j));
   320                                                                        }
   321
   322                                                                        for(int k=0;k<ABIfilenames.size();k++){
   323                                                                                File ABIFile=new File((String)ABIfilenames.get(k))
;
   324                                                                                String ZipFiletype=ABIFile.getName();
   325                                                                                String ZipFiletype1=ZipFiletype.substring(ZipFilet
ype.indexOf("."));
   326
   327                                                                                if(ABIFile.exists() && ZipFiletype1.equals(".zip")
){

   328                                                                                        try
   329                                                                                        {
   330                                                                                                FileInputStream ABIfis=new FileInp
utStream(ABIFile);
   331                                                                                                ZipInputStream zis=new ZipInputStr
eam(ABIfis);
   332                                                                                                ZipEntry Zentry;
   333
   334                                                                                                String[] strABI=null;
   335                                                                                                String[] strABI1=null;
   336                                                                                                String strABIGen=null;
   337                                                                                                ArrayList arrABIfilelist=new Array
List();
   338                                                                                                while((Zentry=zis.getNextEntry())!
=null){
   339                                                                                                        strABI=Zentry.getName().sp
lit("/");
   340                                                                                                        for(int m=1;m<strABI.lengt
h;m++){
   341
   342                                                                                                                String strABIfilet
ype=strABI[m].substring(strABI[m].indexOf("."));
   343
   344                                                                                                                if(strABIfiletype.
equals(".fsa")){
   345
   346                                                                                                                        strABI1=st
rABI[m].split("_");
   347                                                                                                                        for(int jj
=0;jj<strABI1.length-2;jj++){

   348
   349                                                                                                                                st
rABIGen=strABI1[jj];
```

```
   350                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if
(req.getParameter("genotypes").equals(strABIGen))
   351                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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   353
String ABIfilepath=ABIFile.getName();
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String ABIfinalpath="";
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String ABIUserStudy="";
   356
for(int n=0;n<studyarr.size();n++){
   357
        File dir2=new File(session.getServletContext().getRealPath("//")+"//"+ path + "//" +studyarr.get(n)+"_"+filecrop+"
_"+userarr.get(n)+ "//" +ABIfilepath);
   358
        if(dir2.exists()){
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                ABIfinalpath=path + "//" +studyarr.get(n)+"_"+filecrop+"_"+userarr.get(n);
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                ABIUserStudy=studyarr.get(n)+"~!!~"+userarr.get(n);
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String ABIstrpath="";
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ABIstrpath="<a href=’"+ABIfinalpath+ "/"+ABIfilepath+"’ target=new>"+ABIfilepath+"</a>!~!"+ABIUserStudy;
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ABIarrfiles.add(ABIstrpath);
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session.setAttribute("ABIpathlist",ABIarrfiles);

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```

./WEB-INF/src/org/icrisat/lims/startup/login/UserNameAction.java

```
/*
 * Created on Sep 12, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.startup.login;
```

```

import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;
/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class UserNameAction extends Action{

        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                Connection con=null;
                Statement stmt=null;
                ResultSet rs=null;
                String str=null;
                String page="";
            HttpSession session=req.getSession(true);
            try{
                //creating connection to database
                ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                        page="login";
                        ////////////Ajax Plain Text Response code///////////
                        if(!((req.getParameter("pass").equals("new"))||(req.getParameter("pass").equalsIgnoreCase("change")))){
                                stmt=con.createStatement();
                                rs=stmt.executeQuery("select user_id from User_Info where Lower(user_id) like Lower('"+req.getParameter("pass")+"%') order by user_id asc");
                                PrintWriter writer = res.getWriter();
                                res.setContentType("text/plain");
```

```
                                res.setHeader("Cache-Control", "no-cache");
                                String usersList="";
                                while(rs.next()){
                                usersList=usersList+rs.getString(1)+"!~!";
                        }
                                writer.println(usersList);
                                return null;

                        }else{
                                page=req.getParameter("pass");
                        }
                        session.setAttribute("Page", page);

                }catch(Exception e){
                    System.out.println(e);
                }
                finally{
                        try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                      if(page.equalsIgnoreCase("change"))
                          str="change";
                      else
                          str="loginform";

                session.setAttribute("logflag","login");

                return am.findForward(str);
            }
    }
```

./WEB-INF/src/org/icrisat/lims/startup/login/RetrieveUserDataAction.java

```
package org.icrisat.lims.startup.login;

import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
```

```
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

/**
 *   created on Jul 15, 2008
 * @author psrikalyani
 */
public class RetrieveUserDataAction extends Action{

        Connection con=null;
        ResultSet rs=null;
        Statement stmt = null;

        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                DynaActionForm df = (DynaActionForm)af;
                String fromdate = (String)df.get("fromdate");
                String todate = (String)df.get("todate");
                String userData="";

                try{
                        HttpSession session=req.getSession(true);
                        if(session!=null){
                                session.removeAttribute("users");
                        }
                        if((String)session.getAttribute("user")==null){
                                 String msg="logout";
                                return am.findForward(msg);
                        }
//                       creating connection to database
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource) context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con = dataSource.getConnection();
                        stmt = con.createStatement();
                        if(req.getParameter("str").equals("user"))
                                rs=stmt.executeQuery("select distinct login_name, access_date from access_details where access_date between '"+fromdate+"' and '"+todate+"' order by login_name");
                        else
                                rs=stmt.executeQuery("select distinct login_name, access_date from access_details where access_date between '"+fromdate+"' and '"+todate+"' order by access_date");
                        while(rs.next()){
                                userData=userData+rs.getString(1)+"~!~"+rs.getString(2)+",";

                        }
                        req.getSession().setAttribute("users",userData);
```

```

                } catch (Exception e) {
                        e.printStackTrace();
                        System.out.println("Exception" + e.toString());
                } finally {
                        try {
                                if (con != null)
                                        con.close();
                        } catch (Exception e) {
                                System.out.println(e);
                        }
                }
                return am.findForward("returnData");
        }
}

```

./WEB-INF/src/org/icrisat/lims/startup/login/LoginAction.java

```
//Validating the user,project,study,crop
/*
 * Created on Jul 14, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */

/**
 * @author lswarupa
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.startup.login;

import java.util.ArrayList;
import java.text.DateFormat;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

```

```
import org.apache.struts.Globals;
import org.apache.struts.action.Action;

import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;

public class LoginAction extends Action {

        public ActionForward execute(ActionMapping am, ActionForm af,HttpServletRequest req, HttpServletResponse res) throws Exception {
                Connection con = null;
                Statement st = null;
                ResultSet rs = null;
                Statement st1 = null;
                ResultSet rs1 = null;
                Statement st2 = null;
                ResultSet rsCrop=null;
                Statement stCrop=null;
                //ResultSet rs2 = null;
                try {
                        PrintWriter writer = res.getWriter();
                        res.setContentType("text/xml");
                        res.setHeader("Cache-Control", "no-cache");

                        HttpSession session = req.getSession(true);
                        ActionErrors ae = new ActionErrors();
                        String user = "";
                        String pass = "";
                        String count = "";
                        if (session != null) {
                                session.removeAttribute("ABIusername");
                        }
                        DynaActionForm dyna = (DynaActionForm) af;
                        user = (String) dyna.get("uname");
                        pass = (String) dyna.get("pass");
                        String ip = req.getRemoteAddr();
                        java.util.Date thedate = new java.util.Date();
                        /*java.text.DateFormat dateFormat = DateFormat.getDateTimeInstance(DateFormat.SHORT, DateFormat.SHORT);
                        String date = dateFormat.format(thedate);*/
                        java.text.SimpleDateFormat dateFormat = new java.text.SimpleDateFormat("yyyy-MM-dd");
                        java.text.DateFormat timeFormat = DateFormat.getTimeInstance();
                        String date = dateFormat.format(thedate);
                        String time=timeFormat.format(thedate);
```

```
                        // creating connection to database
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource) context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con = dataSource.getConnection();
                        ArrayList crops=new ArrayList();
                        st = con.createStatement();
                        st1 = con.createStatement();
                        st2 = con.createStatement();
                        stCrop=con.createStatement();
                        rs = st.executeQuery("SELECT Password,access_level FROM User_Info WHERE(User_Id = '"+ user
 + "')");
                        if (rs.next()) {
                                String password = rs.getString(1);
                                int alevel=rs.getInt(2);
                                session.setAttribute("access_level", new Integer(alevel));
                                if (!password.equals(pass)) {
                                        ae.add("myerrors", new ActionError(
                                                        "prompt.invalid.password"));
                                        saveErrors(req, ae);
                                        // con.close();
                                        return (new ActionForward(am.getInput()));
                                }
                        }
                        rsCrop = stCrop.executeQuery("select distinct(crop_name) from lims_crops");
                        while(rsCrop.next()){
                                crops.add(rsCrop.getString(1));
                        }
                        session.setAttribute("crops", crops);

                        req.getSession().setAttribute("user", user);
                        req.getSession().setAttribute("pass", pass);
                        String pscQstring = req.getParameter("pa");
                        //System.out.println("query String="+pscQstring);
                        if (user.equalsIgnoreCase("Administrator")) {
                                return am.findForward("frontpage1");
                        } else if (user.equalsIgnoreCase("ABI Operator")) {
                                return am.findForward("frontpage2");
                        } else {

                                String str = "";
                                String str1 = "";
                                String str2="";
                                if (pscQstring == null) {
                                        pscQstring = "test";
                                        req.setAttribute("pscback", "pscBack");
                                }
                                StartupDB sdb = new StartupDB();
                                if (pscQstring.equals("project")) {
```

```
123                                             if (session != null) {
124                                                     session.removeAttribute("ProjectName");
125                                             }
126                                             String pname = req.getParameter("projectSelected");
127                                             if(pname.equals("Add New Project")){
128                                                     //ArrayList cList = sdb.cropList("select distinct(crop_name) from
user_psc", req, context, con);
129                                                     ArrayList cList = sdb.cropList("select distinct(crop_name) from li
ms_crops", req, context, con);
130                                                     //ArrayList nList = sdb.studyList("select distinct(study_name) fro
m user_psc where User_Id='"+ user + "' and project_name='" + pname+ "'", req, context, con);
131                                                     //////////Ajax XMLResponse code//////////////
132                                                     writer.println("<data>");
133                                                     writer.println("<crops>");
134                                                     writer.println("<cropname><![CDATA[" + "-Select Crop-"+ "]]></crop
name>");
135                                                     for (int i = 0; i < cList.size(); i++) {
136                                                             writer.println("<cropname><![CDATA[" + cList.get(i)+ "]]><
/cropname>");
137                                                     }
138                                                     writer.println("<cropname><![CDATA[" + "Add New Crop" + "]]></crop
name>");
139                                                     writer.println("</crops>");
140                                                     writer.println("<studies>");
141                                                     writer.println("<study><![CDATA[" + "-Select Study-"+ "]]></study>
");
142                                                     writer.println("<study><![CDATA[" + "Add New Study"+ "]]></study>"
);
143                                                     writer.println("</studies>");
144                                                     writer.println("</data>");
145                                             }else{
146                                                     ArrayList nList = sdb.studyList("select distinct(study_name) from
user_psc where User_Id='"+ user + "' and project_name='" + pname+ "'", req, context, con);
147                                                     if (Integer.parseInt(req.getAttribute("Studycount").toString()) ==
 1) {
148                                                             str = "Study";
149                                                     } else {
150                                                             str = "Studies";
151                                                     }
152                                                     count = "You have created "+ req.getAttribute("Studycount") + " "
+ str+ " under the project '" + pname + "'.";
153                                                     //session.setAttribute("StudyCount", count);
154                                                     //session.setAttribute("studyNames",nList);
155                                                     //ArrayList cList = sdb.cropList("select distinct(crop_name) from
user_psc where User_Id='"+ user + "'", req, context, con);
156
157                                                     ////////////Ajax XMLResponse code///////////
158                                                     writer.println("<studies>");
```

```
159                                                     writer.println("<study><![CDATA[" + "-Select Study-"+ "]]></study>
");
160                                                     for (int i = 0; i < nList.size(); i++) {

161                                                             writer.println("<study><![CDATA[" + nList.get(i)+ "]]></st
udy>");
162
163                                                     }
164                                                     writer.println("<study><![CDATA[" + "Add New Study"+ "]]></study>"
);
165                                                     writer.println("</studies>");

166                                             }
167
168                                             session.setAttribute("ProjectName", pname);
169                                             return null;
170                                             //////////////*********///////////////
171
172                                     } else if (pscQstring.equals("study")) {
173                                             if (session != null) {
174                                                     session.removeAttribute("StudyName");

175                                             }
176                                             // StartupDB sdb=new StartupDB();
177                                             String strStudy = req.getParameter("projectSelected");
178                                             String proj=(String)session.getAttribute("ProjectName");
179                                             ArrayList cList=null;
180                                             if (strStudy.equals("Add New Study")){
181                                                     //cList = sdb.cropList("select distinct(crop_name) from user_psc",
 req, context, con);
182                                                     cList = sdb.cropList("select distinct(crop_name) from lims_crops",
 req, context, con);
183                                             }else{
184                                                     //System.out.println("select distinct(crop_name) from user_psc whe
re User_Id='"+ user + "' and project_name='"+proj+"' and study_name='" + strStudy+ "'");
185                                                     cList = sdb.cropList("select distinct(crop_name) from user_psc whe
re User_Id='"+ user + "' and project_name='"+proj+"' and study_name='" + strStudy+ "'", req, context, con);
186                                             }
187
188                                             ////////////Ajax XMLResponse code//////////////
189                                             writer.println("<crops>");
190                                             writer.println("<cropname><![CDATA[" + "-Select Crop-"+ "]]></cropname>");
191                                             //List finalList = new ArrayList(1);
192                                             for (int i = 0; i < cList.size(); i++) {
193                                                     /*String sMarkers = (String) cList.get(i).toString().trim().toLowe
rCase();
194                                                     if (!finalList.equals(sMarkers)) {
195                                                             finalList.add(sMarkers);
```

```
196                                                 }*/
197                                                 writer.println("<cropname><![CDATA[" + cList.get(i)+ "]]></cropnam
e>");
198                                         }
199                                         //System.out.println("final list="+finalList);
200                                         writer.println("<cropname><![CDATA[" + "Add New Crop" + "]]></cropname>");
201                                         writer.println("</crops>");
202                                         session.setAttribute("StudyName", strStudy);
203                                         return null;
204                                         //////////////*********///////////////
205
206                                 } else if (pscQstring.equals("crop")) {
207                                         //System.out.println("select experiment_name from experiment_master where
upsc_id='"+ session.getAttribute("ProjectName")+ session.getAttribute("StudyName")+ req.getParameter("projectSelected")+ u
ser+ "'and date_of_creation=(select max(date_of_creation) from experiment_master where upsc_id='"+ session.getAttribute("P
rojectName")+ session.getAttribute("StudyName")+ req.getParameter("projectSelected")+ user + "')");
208                                         rs1 = st1.executeQuery("select experiment_name from experiment_master wher
e upsc_id='"+ session.getAttribute("ProjectName")+ session.getAttribute("StudyName")+ req.getParameter("projectSelected")+
 user+ "'and date_of_creation=(select max(date_of_creation) from experiment_master where upsc_id='"+ session.getAttribute(
"ProjectName")+ session.getAttribute("StudyName")+ req.getParameter("projectSelected")+ user + "')");
209                                         if (session != null)
210                                                 session.removeAttribute("status");
211                                         if (rs1.next()) {
212                                                 str1 = rs1.getString(1);
213                                                 str2=rs1.getString(1);
214                                                 if (rs1.getString(1).endsWith("~~~PCR")) {
215                                                         str2=rs1.getString(1);
216                                                         str1 = rs1.getString(1).substring(0,rs1.getString(1).lastI
ndexOf("~~~PCR"));
217                                                         //System.out.println("str1="+str1);
218                                                         str = "The last Experiment created under the '"+ session.g
etAttribute("StudyName")+ "' Study is '" + str1 + "'.";
219                                                 } else {
220                                                         str = "The last Experiment created under the '"+ session.g
etAttribute("StudyName")+ "' Study is '" + rs1.getString(1) + "'.";
221                                                 }
222
223                                         } else {
224                                                 str = "There are no experiments in this Study";
225                                                 str1 = "none";
226                                         }
227                                         ////////////Ajax XMLResponse code//////////////
228                                         writer.println("<Details>");
229                                         writer.println("<ExpDet><![CDATA[" + str + "]]></ExpDet>");
230                                         writer.println("<ExpStatus><![CDATA[" + str1 + "]]></ExpStatus>");
231                                         writer.println("<Exp><![CDATA[" + str2 + "]]></Exp>");
232                                         writer.println("</Details>");
233                                         session.setAttribute("status", str1);
```

```
234                                             return null;
235                                             ////////////////////////////////
236                                             //session.setAttribute("lastExperiment",str);
237                                             //session.setAttribute("status",str1);
238                                     } else {
239                                             ArrayList pList = sdb.projectList("select distinct(project_name) from user
_psc where User_Id='"+ user + "'", req, context, con);
240                                             session.setAttribute("projectNames", pList);
241                                             if (session != null)
242                                                     session.removeAttribute("ProjectCount");
243                                             if (Integer.parseInt(req.getAttribute("Count").toString()) == 0) {
244                                                     str = "You are a new user of LIMS";
245                                             } else {
246                                                     str = "You have used/created "+ req.getAttribute("Count") + " Proj
ect(s).";
247                                             }
248                                             session.setAttribute("ProjectCount", str);
249
250                                             ArrayList cList = sdb.cropList("select distinct(crop_name) from user_psc w
here User_Id='"+ user + "'", req, context, con);
251                                             //System.out.println("Crops="+cList);
252                                             session.setAttribute("cropNames", cList);
253
254                                             ArrayList uList = sdb.userList("select distinct(user_id) from user_info wh
ere scientist like '%"+ user + "%'  and user_id not like '%"+ user + "%'", req, context, con);
255                                             session.setAttribute("userNames", uList);
256
257                                             ArrayList nList = sdb.studyList("select distinct(study_name) from user_psc
 where User_Id='"+ user + "'", req, context, con);session.setAttribute("studyNames", nList);
258                                             //st2.executeUpdate("insert into access_details values('"+user+"','"+ip+"'
,'"+date+"')");
259                                             st2.executeUpdate("insert into access_details values('"+user+"','"+ip+"','
"+date+"','"+time+"","+null+")");
260                                     }
261                             }
262                             // con.close();
263                     } catch (Exception e) {
264                             e.printStackTrace();
265                             System.out.println("Exception" + e.toString());
266                     } finally {
267                             try {
268                                     if (con != null)
269                                             con.close();
270                             }catch (Exception e) {
271                                     System.out.println(e);
272                             }
273                     }
274                     return am.findForward("frontpage");
```

```
        }

}
```

./WEB-INF/src/org/icrisat/lims/startup/login/SummaryAction.java

```
package org.icrisat.lims.startup.login;

import java.io.OutputStream;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.jfree.chart.ChartFactory;
import org.jfree.chart.ChartFrame;
import org.jfree.chart.ChartUtilities;
import org.jfree.chart.JFreeChart;
import org.jfree.data.general.DefaultPieDataset;

/**
 *   created on Jul 16, 2008
 * @author psrikalyani
 */
public class SummaryAction extends Action{

        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res) throws Exception {
                // TODO Auto-generated method stub
                Connection con=null;
                ResultSet rs=null;
                Statement st=null;
                ResultSet rs1=null;
                Statement st1=null;ResultSet rsplt=null;
                Statement stplt=null; ResultSet rsABI=null;
                Statement stABI=null;
                ChartFrame frame;String plts="";                String abi="";
                String qDate="";String retstr="";
```

```
                String fromDate="";
                String toDate="";
                try{
                        HttpSession session=req.getSession(true);
                        if((String)session.getAttribute("user")==null){
                                 String msg="logout";
                                return am.findForward(msg);
                        }
                        String upsc="";String dataset1="";
                        DefaultPieDataset dataset = new DefaultPieDataset();
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource) context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con = dataSource.getConnection();
                        if(req.getQueryString().equals("piechart")){
                                String date1=(String)session.getAttribute("qDate");
                                String[] pieDate=date1.split("###");
                                fromDate=pieDate[0];
                                toDate=pieDate[1];
                                st = con.createStatement();
                                //rs=st.executeQuery("select distinct login_name, count(login_name) from access_de
tails where access_date between '"+fromDate+"' and '"+toDate+"' group by login_name");
                                //System.out.println("select * from summary_report where date_of_creation between
'"+fromDate+"' and '"+toDate+"' order by user_id");
                                //rs=st.executeQuery("select distinct user_id, count(pcr_plate_id) from summary_re
port where date_of_creation between '"+fromDate+"' and '"+toDate+"' group by user_id");
                                rs=st.executeQuery("select distinct user_id, count(pcr_plate_id) from summary_repo
rt where date_of_creation between '"+fromDate+"' and '"+toDate+"' group by user_id order by user_id");
                                while(rs.next()){
                                        dataset.setValue(rs.getString(1),rs.getInt(2));
                                }
                                session.setAttribute("data", dataset1);
                                JFreeChart chart = ChartFactory.createPieChart(
                                                "LIMS Usage Summary Report",
                                                dataset,
                                                false, // legend?
                                                true, // tooltips?
                                                false // URLs?
                                                );
                                 frame = new ChartFrame("LIMS Usage Summary Report", chart);
                                 OutputStream out = res.getOutputStream();
                                 res.setContentType("image/png");
                                 ChartUtilities.writeChartAsPNG(out, chart,460,280);
                                 retstr="piechart";
                        }else{
                                st1=con.createStatement();
                                stplt=con.createStatement();
                                stABI=con.createStatement();
                                fromDate=req.getParameter("Repfromdate");
```

```
                                toDate=req.getParameter("Reptodate");
                                rs1=st1.executeQuery("select distinct user_psc.crop_name,user_psc.project_name,use
r_psc.study_name, user_psc.user_id, pcr_tracking.pcr_plate_id from pcr_tracking,user_psc where user_psc.upsc_id=pcr_tracki
ng.upsc_id and user_psc.date_of_creation between '"+fromDate+"%' and '"+toDate+"%' order by user_psc.crop_name");
                                while(rs1.next()){
                                        upsc=upsc+rs1.getString(1)+"~~~~"+rs1.getString(2)+"~~~~"+rs1.getString(3)
+"~~~~"+rs1.getString(4)+"~~~~"+rs1.getString(5)+",,,,";
                                }
                                if(!(upsc.equals("")){
                                        String upsc1[]=upsc.split(",,,,");
                                        for(int i=0;i<upsc1.length;i++){
                                                String plts1[]=upsc1[i].split("~~~~");
                                                rsplt=stplt.executeQuery("select pcr_plate_id from dna_electrophor
esis where pcr_plate_id='"+plts1[4]+"'");

                                                if(rsplt.next()){
                                                        plts=plts+plts1[4]+"="+"Yes"+",,,,";
                                                }else{
                                                        plts=plts+plts1[4]+"="+"No"+",,,,";
                                                }
                                                rsABI=stABI.executeQuery("select pcr_plate_id,description from lim
s_output_files where pcr_plate_id like '"+plts1[4]+"_%'");
                                                String str="";
                                                String[] stra={"ABI Raw File","Genotyper File","AnalysisFile"};
                                                while(rsABI.next()){

                                                        str=str+rsABI.getString(2)+"~!~";

                                                }
                                                String str1[]=str.split("~!~");
                                                int ii=0,kk=0,jj=0;
                                                for(int k=0;k<str1.length;k++){
                                                        if(str1[k].equalsIgnoreCase("ABI Raw File")){
                                                                ii++;
                                                        }
                                                        if (str1[k].equalsIgnoreCase("Genotyper File")){
                                                                kk++;
                                                        }
                                                        if (str1[k].equalsIgnoreCase("AnalysisFile")){
                                                                jj++;
                                                        }

                                                }
                                                if(ii!=0 && jj!=0 && kk!=0){
                                                        abi=abi+plts1[4]+"="+"Yes"+",,,,";
                                                }else{
                                                        abi=abi+plts1[4]+"="+"No"+",,,,";
                                                }
```

```
                                        }
                                }else{
                                        plts="";
                                        upsc="";
                                        abi="";
                                }
                                session.setAttribute("qDate", fromDate+"###"+toDate);
                                retstr="summary";
                        }

                        session.setAttribute("plts", plts);
                        session.setAttribute("upsc", upsc);
                        session.setAttribute("abi", abi);

                } catch (Exception e) {
                        e.printStackTrace();
                        System.out.println("Exception" + e.toString());
                } finally {
                        try {
                                if (con != null)
                                        con.close();
                        } catch (Exception e) {
                                System.out.println(e);
                        }
                }
                return am.findForward(retstr);
        }
}

```

./WEB-INF/src/org/icrisat/lims/startup/login/AdminValidAction.java

```
/*
 * Created on Sep 26, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.startup.login;

import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.ArrayList;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
```

```
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

/**
 * @author psrikalyani
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class AdminValidAction extends Action {
        public ActionForward execute(ActionMapping am, ActionForm af,
                        HttpServletRequest req, HttpServletResponse res) throws Exception {
                // TODO Auto-generated method stub
                HttpSession session = req.getSession(true);
                //user identification
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return am.findForward(msg);
                }
                String user=(String)req.getSession().getAttribute("user");

                Connection con=null;
                Statement stmt=null;
                ResultSet rs=null;
                Statement ScientistsStmt=null;
                ResultSet ScientistsRs=null;
                String accesslevel="";
                ArrayList scientists=new ArrayList();
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();

                        if(req.getParameter("ChkUserName")==null || req.getParameter("ChkUserName")==""){
                                stmt=con.createStatement();
                                ScientistsStmt=con.createStatement();
                                rs=stmt.executeQuery("select access_level from user_info where user_id='"+user+"'"
);
                                while (rs.next()){
                                        accesslevel=rs.getString(1);
                                }
```

```
                                //ScientistsRs=ScientistsStmt.executeQuery("Select Distinct(scientist) from user_i
nfo where user_id != 'Administrator'");
                                ScientistsRs=ScientistsStmt.executeQuery("Select Distinct(scientist) from user_inf
o");
                                while(ScientistsRs.next()){
                                if(ScientistsRs.getString(1)!=null)
                                        scientists.add(ScientistsRs.getString(1));
                                }
                                session.setAttribute("scientists",scientists);
                                //System.out.println("Scientist="+scientists);
                                session.setAttribute("acclevel",accesslevel);
                        }else{
//                              *********Ajax Plain Text Response ***********//
                                PrintWriter writer=res.getWriter();
                                res.setContentType("text/xml");
                                res.setHeader("Cache-Control", "no-cache");
                                String name=req.getParameter("ChkUserName");
                                String query="select * from user_info where user_id='"+name+"'";

                                Statement stmt1=con.createStatement();
                                ResultSet rs1=stmt1.executeQuery(query);
                                if(rs1.next()){
                                        writer.println("1");
                                        return null;
                                }

                        }
                        session.setAttribute("acclevel",accesslevel);
                        //con.close();
                }catch(Exception e){}
                finally{
                      try{
                                if(con!=null) con.close();
                         }catch(Exception e){System.out.println(e);}
                        }
                return am.findForward("action");
        }
}

./WEB-INF/src/org/icrisat/lims/startup/experiment/EditExptAction.java


/*
 * Created on Oct 3, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
```

```
 7  package org.icrisat.lims.startup.experiment;
 8
 9  import java.sql.Connection;
10  import java.sql.PreparedStatement;
11  import java.sql.ResultSet;
12  import java.sql.Statement;
13  import java.sql.Timestamp;
14
15  import java.util.ArrayList;
16
17  import javax.servlet.ServletContext;
18  import javax.servlet.http.HttpServletRequest;
19  import javax.servlet.http.HttpServletResponse;
20  import javax.servlet.http.HttpSession;
21  import javax.sql.DataSource;
22
23
24  import org.apache.struts.Globals;
25  import org.apache.struts.action.Action;
26  import org.apache.struts.action.ActionErrors;
27  import org.apache.struts.action.ActionError;
28  import org.apache.struts.action.ActionForm;
29  import org.apache.struts.action.ActionForward;
30  import org.apache.struts.action.ActionMapping;
31
32
33  import org.apache.struts.action.DynaActionForm;
34
35
36  /**
37   * @author praveenreddy t
38   *
39   * TODO To change the template for this generated type comment go to
40   * Window - Preferences - Java - Code Style - Code Templates
41   */
42  public class EditExptAction extends Action{
43
44          Connection con=null;
45          public ArrayList exptnamesList(String un,HttpServletRequest req, Connection con){
46
47                  ArrayList eptNameList=new ArrayList();
48                  try{
49
50                          Statement st = con.createStatement();
51                          System.out.println("SELECT Experiment_Name FROM Experiment_Master WHERE  (Experiment_Name
NOT IN  (SELECT Experiment_Name  FROM Genotype_Master  WHERE  upsc_id = '"+ un +"')) AND (upsc_id ='"+ un +"')");
52                          //ResultSet rs = st.executeQuery("SELECT Experiment_Name FROM Experiment_Master WHERE  (Ex
periment_Name NOT IN  (SELECT Experiment_Name  FROM Genotype_Master  WHERE  upsc_id = '"+ un +"')) AND (upsc_id ='"+ un +"
```

```
')");
                        ResultSet rs = st.executeQuery("SELECT Experiment_Name FROM Experiment_Master WHERE  upsc_
id = '"+ un +"'");
                        while(rs.next()){
                                eptNameList.add(rs.getString("Experiment_Name"));
                        }
                        //if(con!=null)con.close();
                }catch(Exception e){
                        e.printStackTrace();
                }
                return eptNameList;
        }

        public String setExperimentDetails(HttpSession session,ActionForm form,String exptname, String un, Connect
ion con){
                String msg="";
                String Experiment_Name;

                //Date Date_of_Experiment;
                try{

                        Statement st = con.createStatement();
                        ResultSet rs = st.executeQuery("select Experiment_Name,Description,Location,Year_Of_Experi
ment,No_of_Genotypes from Experiment_Master where Experiment_Name='"+ exptname +"' and upsc_id='"+ un +"'");
                        while (rs.next()){
                                DynaActionForm eef=(DynaActionForm) form;
                                eef.set("ekword",(rs.getString("Experiment_Name")));
                                eef.set("description",(rs.getString("Description")));
                                eef.set("sample",(rs.getString("Location")));
                                eef.set("year",(rs.getString("Year_Of_Experiment")));
                                eef.set("genotypes",(rs.getString("No_of_Genotypes")));

                                String ss=rs.getString("Experiment_Name");
                                String sub;
                                sub=ss.substring(ss.indexOf("_")+1,ss.length());
                                Experiment_Name=sub.substring(sub.indexOf("_")+1,sub.length());
                                session.setAttribute("Year",rs.getString("Year_Of_Experiment"));
                                session.setAttribute("Experiment_Name",Experiment_Name);
                                session.setAttribute("Description",rs.getString("Description"));
                                session.setAttribute("Location",rs.getString("Location"));
                                session.setAttribute("No_of_Genotypes",rs.getString("No_of_Genotypes"));
                                session.setAttribute("CID", exptname);

                        msg="sel";
                        }
                        //if(con!=null)con.close();
                }catch(Exception e){
                        e.printStackTrace();
```

```
                }
                return msg;
        }

        public String upExperimentDetails(HttpSession session, ActionForm form, HttpServletRequest req, String un, Connection con){
                        String msg="";

                        DynaActionForm etf=(DynaActionForm ) form;

                        String ExperimentName=etf.get("ekword").toString().trim();

                        String Description=etf.get("description").toString().trim();
                        String Location=etf.get("sample").toString();
                        int Year=Integer.parseInt(etf.get("year").toString());
                        int NoofGenotypes=Integer.parseInt(etf.get("genotypes").toString());

                        try{

                                //check the study name
                                String studyname=(String)session.getAttribute("study");

                                        Statement stconfirmname=con.createStatement();
                                        String Ename;
                                        Ename=Year + "_" + studyname  + "_" + ExperimentName;
                                        ///timestamp code
                                        java.util.Date utilDate=new java.util.Date(System.currentTimeMillis());
                                        Timestamp sqldate=new Timestamp(utilDate.getTime());
                                        Timestamp ts=new Timestamp(sqldate.getTime());

                                /// check the given name already exists
                                        String count="";
                                        if(!Ename.equals(session.getAttribute("CID"))){
                                                String qry="select Experiment_Name from Experiment_Master where lower(Experiment_Name)='"+Ename.toLowerCase()+"'";
                                                ResultSet rsconfirmname=stconfirmname.executeQuery(qry);
                                                while (rsconfirmname.next())
                                                        {
                                                                count = count + 1;
                                                        }
                                        }
                                if (count==""){
                                        PreparedStatement pstmt=con.prepareStatement("Update Experiment_Master SET Experiment_Name=?,Description=?,Location=?,Year_Of_Experiment=?,No_of_Genotypes=?,Date_Of_Correction=? where Experiment_Name='"+ session.getAttribute("CID")+"'");

                                        pstmt.setString(1,Ename);
                                        pstmt.setString(2,Description);
```

```
140                                     pstmt.setString(3,Location);
141                                     pstmt.setInt(4,Year);
142                                     pstmt.setInt(5,NoofGenotypes);
143                                     pstmt.setTimestamp(6,ts);
144                                     pstmt.executeUpdate();
145
146                                     msg="upt";
147                                     pstmt.close();
148                             }else{
149                                     msg="err";
150                             }
151
152                             //if(con!=null)con.close();
153
154                     }catch(Exception e){
155                             e.printStackTrace();
156                     }
157                 return msg;
158         }
159
160         public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse
resp)throws Exception
161         {
162
163                     HttpSession session = req.getSession(true);
164                     ActionErrors ae= new ActionErrors();
165  //                 user identification
166
167                     if((String)session.getAttribute("user")==null){
168                              String msg="logout";
169                             return map.findForward(msg);
170                     }
171
172                     String uname=(String) session.getAttribute("upsc");
173                     String msg="";
174                     try{
175                             ServletContext context = servlet.getServletContext();
176                             DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
177                             con=dataSource.getConnection();
178                             if (req.getQueryString().equals("exptnames")){
179                                     ArrayList enList = exptnamesList(uname,req,con);

180                                     msg="sel";
181                                     session.setAttribute("EditexptnamesList", enList);
182
183                             }else if (req.getQueryString().equals("exptredata")){
184                                     String ss=setExperimentDetails(req.getSession(true),form,req.getParameter(
"exptnames"),session.getAttribute("upsc").toString(),con);
```

```
185                                             msg=ss;
186                                     }else if (req.getQueryString().equals("dataupdate")){
187                                             String up=upExperimentDetails(session,form,req,session.getAttribute("upsc"
).toString(),con);
188                                             if(up.equalsIgnoreCase("err")){
189                                                     ae.add("myerror",new ActionError("prompt.Expname.Duplicate"));
190                                                     saveErrors(req,ae);
191                                                     //con.close();
192                                                     return (new ActionForward(map.getInput()));
193                                             }else{
194                                                     msg=up;
195                                             }
196                                     }else{
197                                             msg="er";
198                                     }
199                                     //con.close();
200                             }catch(Exception e){
201                                     System.out.println(e);
202                             }finally{
203                                   try{
204                                             if(con!=null) con.close();
205                                      }catch(Exception e){System.out.println(e);}
206                                     }
207                     return map.findForward(msg);
208             }
209     }
```

./WEB-INF/src/org/icrisat/lims/startup/experiment/CreateExptAction.java

```
  1  /*
  2   * Created on Sep 6, 2005
  3   *
  4   * TODO To change the template for this generated file go to
  5   * Window - Preferences - Java - Code Style - Code Templates
  6   */
  7  package org.icrisat.lims.startup.experiment;
  8
  9  import java.sql.Connection;
 10
 11
 12  import java.sql.PreparedStatement;
 13  import java.sql.ResultSet;
 14  import java.sql.Statement;
 15  import java.sql.Timestamp;
 16
 17  import javax.servlet.ServletContext;
 18  import javax.servlet.http.HttpServletRequest;
 19  import javax.servlet.http.HttpServletResponse;
```

```
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;


import org.apache.struts.Globals;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;

import org.apache.struts.action.DynaActionForm;

/**
 * @author praveenreddy t
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class CreateExptAction extends Action{
        String msg="";


        public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse resp)throws Exception
        {


                HttpSession session=req.getSession(true);
                ActionErrors ae=new ActionErrors();
                // user identification
                if((String)session.getAttribute("user")==null){

                        msg="logout";
                        return map.findForward(msg);
                }

                        DynaActionForm dyna=(DynaActionForm) form;

                        String Experiment_Name=dyna.get("ekword").toString().trim();
                        String Description=dyna.get("description").toString().trim();
                        String Location=dyna.get("sample").toString();
                        int No_of_Genotypes=0;
                        if (Location=="Add New" || Location.equals("Add New"))
                                Location=dyna.get("studytxt1").toString();
                        int Year=Integer.parseInt(dyna.get("year").toString());
                        No_of_Genotypes=Integer.parseInt((String)dyna.get("genotypes"));
```

```

                        String studyname=(String)session.getAttribute("study");
                        String upscid=(String)session.getAttribute("upsc");

                        Connection con=null;
                        try{
                                //creating connection to database
                                ServletContext context = servlet.getServletContext();
                                DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                                con=dataSource.getConnection();

                                Statement st=con.createStatement();
                                Statement stconfirmname=con.createStatement();

                                String Ename;
                                Ename=Year + "_" + studyname  + "_" + Experiment_Name;

                                String qry="select Experiment_Name from Experiment_Master where lower(Experiment_N
ame)='"+Ename.toLowerCase()+"'";
                                ResultSet rsconfirmname=stconfirmname.executeQuery(qry);

                                String count="";
                                while (rsconfirmname.next()){
                                        count = count + 1;
                                }

                                ///timestamp code
                        java.util.Date utilDate=new java.util.Date(System.currentTimeMillis());
                                Timestamp sqldate=new Timestamp(utilDate.getTime());
                                Timestamp ts=new Timestamp(sqldate.getTime());

                                if (count==""){
                                        //PreparedStatement pstmt=con.prepareStatement("insert into Experiment_Mas
ter values(?,?,?,?,?,?,?,?,?)");
                                        PreparedStatement pstmt=con.prepareStatement("insert into Experiment_Maste
r values(?,?,?,?,?,?,?,?)");
                                        pstmt.setString(1,Ename);
                                        pstmt.setString(2,Description);
                                        pstmt.setString(3,Location);
                                        pstmt.setInt(4,Year);
                                        pstmt.setInt(5,No_of_Genotypes);

                                        pstmt.setString(6,upscid);
                                        pstmt.setTimestamp(7,ts);
                                        pstmt.setTimestamp(8,null);
                                        pstmt.executeUpdate();
                                        session.setAttribute("exptnamefordisplay",Ename);
                                        msg="insert";
```

```
                                }else{
                                        ae.add("myerror",new ActionError("prompt.Expname.Duplicate"));
                                        saveErrors(req,ae);
                                        //con.close();
                                        return (new ActionForward(map.getInput()));
                                }
                                rsconfirmname.close();
                                st.close();
                        }
                        catch(Exception e){
                                e.printStackTrace();
                        }finally{
                              try{
                                        if(con!=null) con.close();
                                 }catch(Exception e){System.out.println(e);}
                                }
                  return map.findForward(msg);
          }


  }
```

./WEB-INF/src/org/icrisat/lims/startup/details/Accessgmd.java

```
 /*
  * Created on Nov 29, 2006
  *
  * TODO To change the template for this generated file go to
  * Window - Preferences - Java - Code Style - Code Templates
  */
 package org.icrisat.lims.startup.details;

 import org.apache.struts.Globals;
 import org.apache.struts.action.Action;
 import java.sql.*;
 import java.util.*;

 import javax.servlet.ServletContext;
 import javax.servlet.http.HttpServletRequest;
 import javax.servlet.http.HttpServletResponse;
 import javax.servlet.http.HttpSession;
 import javax.sql.DataSource;

 import org.apache.struts.action.ActionForm;
 import org.apache.struts.action.ActionForward;
 import org.apache.struts.action.ActionMapping;

 /**
```

```
 * @author pprasad
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class Accessgmd extends Action{
        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {
                HttpSession session = req.getSession(true);
                String uname=(String) session.getAttribute("user");
                // user identification
                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                        return am.findForward(msg);
                }
                //       retrieves the Experiment Names
                Vector v=new Vector();
                String str="Accessins";
                Connection con=null;
                Statement st=null;
                ResultSet rs=null;
                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st = con.createStatement();
                        rs = st.executeQuery("SELECT Experiment_Name FROM Experiment_Master WHERE (Experiment_Name
 NOT IN  (SELECT Experiment_Name  FROM Genotype_Master  WHERE  upsc_id = '"+req.getSession().getAttribute("upsc")+"') AND
(upsc_id ='"+req.getSession().getAttribute("upsc")+"'))");
                        while(rs.next()){
                                String geno=rs.getString(1);
                                v.add(geno);
                        }
                }catch(Exception e){System.out.println(e);}
                finally{
                        if(rs!=null)rs.close();
                        if(st!=null)st.close();
                        if(con!=null)con.close();
                }
                req.getSession().setAttribute("exptnamesList",v);
                //System.out.println(v);
                return am.findForward(str);
        }
}


./WEB-INF/src/org/icrisat/lims/startup/details/InsertAccessgmd.java
```

```
/*
 * Created on Dec 1, 2006
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.startup.details;

import java.io.File;
import java.io.InputStream;
import java.sql.*;
import java.util.Calendar;
import java.util.GregorianCalendar;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import org.apache.struts.Globals;
import org.apache.struts.upload.FormFile;
import org.apache.struts.action.Action;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.action.DynaActionForm;
//import org.apache.struts.upload.FormFile;

import org.icrisat.lims.common.UploadExcel;

/**
 * @author pprasad
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */

public class InsertAccessgmd  extends Action{
//      generates the lims id
        public String getLimsid(long n){
                        String limsid="";
                        String temp="";
                        GregorianCalendar calendar = new GregorianCalendar();
```

```
                        int intY=calendar.get(Calendar.YEAR);
                        String strYear=String.valueOf(intY);
                        limsid=String.valueOf(n+1);
                        for (int i=0;i<7-limsid.length();i++){
                                temp="0" + temp;
                        }
                        limsid=strYear +"_"+temp + limsid;

                return limsid;
        }

        public ActionForward execute(ActionMapping am, ActionForm af, HttpServletRequest req, HttpServletResponse
res)throws Exception
        {
                HttpSession session = req.getSession(true);
                // user identification
                if((String)session.getAttribute("user")==null){
                        String msg="logout";
                        return am.findForward(msg);
                }

                Connection  con=null;
                Connection  con1=null;
                Statement st=null;
                ResultSet rs1=null;
                ResultSet rs2=null;
                ResultSet rs3=null;
                ResultSetMetaData rsmd =null;
                ResultSetMetaData rsmd1 =null;
                InputStream stream=null;
                ActionErrors ae= new ActionErrors();
                String saveFtoServer="";
                String saveF="";
                String fileName="";
                UploadExcel Gxf = null;
                Gxf=new UploadExcel();
                String msg="";
                String exptname=req.getParameter("exptnames");
                String upscid=(String) session.getAttribute("upsc");
                String tablename1=req.getParameter("tablename");

                DynaActionForm AccUF=(DynaActionForm) af;
                FormFile file=(FormFile) AccUF.get("fileup");
                session.setAttribute("sFileName",file.getFileName());
                stream=file.getInputStream();
                saveFtoServer="UploadFiles";
        saveF=session.getServletContext().getRealPath("//")+"/"+saveFtoServer;
        if(!new File(saveF).exists())
```

```
                    new File(saveF).mkdir();
                    fileName=saveF+"//"+file.getFileName();
                    Gxf.createFile(stream,fileName);

                    //timestamp code
                    java.util.Date utilDate=new java.util.Date(System.currentTimeMillis());
                    Timestamp sqldate=new Timestamp(utilDate.getTime());
                    Timestamp ts=new Timestamp(sqldate.getTime());
                    try{
                            ServletContext context = servlet.getServletContext();
                            DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                            con=dataSource.getConnection();
                            st = con.createStatement();
                            ResultSet noofgenotypesrs = st.executeQuery("select Experiment_Name,No_of_Genotypes from E
xperiment_Master where Experiment_Name='"+  exptname +"'");
                            int noof=0;
                            //Genotypeid should be first col & row
                            while(noofgenotypesrs.next()){
                                    noof= noofgenotypesrs.getInt("No_of_Genotypes");
                            }

                            //Get the maximum lims id
                            Statement stmtMaxid=con.createStatement();
                            ResultSet rsMaxid=stmtMaxid.executeQuery("select max(LIMS_Id)as lid from Genotype_Master")
;
                            String strMaxlimsid=null;
                            GregorianCalendar calendar = new GregorianCalendar();
                            int intYear=calendar.get(Calendar.YEAR);
                            String strYear=String.valueOf(intYear);
                            try{
                                    if(rsMaxid.next()){
                                            strMaxlimsid=rsMaxid.getString("lid");
                                    }
                            }catch(Exception e){e.printStackTrace();}

                            ///check the maximum lims id and assign the new lims id
                            if(strMaxlimsid==null || strMaxlimsid.equals("")){
                                    strMaxlimsid=strYear +"_000000";
                            }else if(Integer.parseInt(strMaxlimsid.substring(0,4))!=intYear){
                                    strMaxlimsid=strYear +"_000000";
                            }
                            String  strL=strMaxlimsid;

                            Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
                            con1 = DriverManager.getConnection("jdbc:odbc:Driver={MicroSoft Access Driver (*.mdb)};DBQ
="+fileName+"");
                            Statement st1=con1.createStatement();
                            rs1=st1.executeQuery("select count(*) from "+tablename1+"");
```

```


                        int i;
                        int recordsCount=0;
                        if(rs1.next())
                                recordsCount=rs1.getInt(1);
                        rs1.close();

                        //check the first column
                        rs1=st1.executeQuery("select * from "+tablename1+"");
                        rsmd1 = rs1.getMetaData();
                        String Tname1=rsmd1.getColumnName(1);
                        rs1.close();


                        rs2=st1.executeQuery("select count(*) from "+tablename1+" where ["+Tname1+"] is not null")
;

                        int recordsCount1=0;
                        if(rs2.next())
                                recordsCount1=rs2.getInt(1);
                                rs2.close();

                        rs3=st1.executeQuery("SELECT COUNT(*)FROM (select distinct(["+Tname1+"]) from "+tablename1
+")");

                        int recordsCount2=0;
                        if(rs3.next())
                                recordsCount2=rs3.getInt(1);
                                rs3.close();
                        //check the column names of the uploaded table
                    if ((Tname1.equalsIgnoreCase("Extraction number"))||(Tname1.equalsIgnoreCase("Genotype ID"))){

                        //check the number of uploaded genomics with number of genomics in experiment master
                        if (noof==recordsCount)

                                //check the empty rows in uploaded genomics table
                                if(noof==recordsCount1)

                                        //check the duplicate values in uploaded genomics table
                                                if(noof==recordsCount2)


                        {
                        rs1=st1.executeQuery("select * from "+tablename1+"");
                        rsmd = rs1.getMetaData();
                        int numColumns = rsmd.getColumnCount();
                        PreparedStatement pstmt1=null;
```

```
PreparedStatement pstmt=null;
pstmt=con.prepareStatement("insert into Genotype_Master values(?,?,?,?,?,?)");
pstmt1=con.prepareStatement("insert into Genotype_Traitdetails values(?,?,?)");

while(rs1.next())

{

        String sLid=getLimsid(Long.parseLong(strL.substring(5)));
        String genoTypeId=(rs1.getString(1));
        String genoTypeId1=genoTypeId.replace(".0","");
        pstmt.setString(1,sLid);
        pstmt.setString(2,genoTypeId1);
        pstmt.setString(3,exptname);
        pstmt.setString(4,upscid);
        pstmt.setTimestamp(5,ts);
        pstmt.setTimestamp(6,null);
        pstmt.addBatch();


        for(i=2;i<=numColumns;i++)
        {
        String Tname=rsmd.getColumnName(i);
        String Tvalue=rs1.getString(i);
        pstmt1.setString(1,sLid);
        pstmt1.setString(2,Tname);
        pstmt1.setString(3,Tvalue);
        pstmt1.addBatch();
        }
        strL=getLimsid(Long.parseLong(strL.substring(5)));
}
pstmt.executeBatch();
pstmt1.executeBatch();
pstmt.close();
pstmt1.close();
msg="insgeno";
}else{
        msg="DuplAccessGenomics";
        ae.add("myerro",new ActionError("prompt.DuplAccessGenomics"));
        saveErrors(req, ae);
        return (new ActionForward(am.getInput()));
}else{
        msg="EmptyAccessGenomics";
        ae.add("myerro",new ActionError("prompt.EmptyAccessGenomics"));
        saveErrors(req, ae);
        return (new ActionForward(am.getInput()));
}else{
        msg="NoofAccessGenomics";
```

```
                                ae.add("myerro",new ActionError("prompt.NoofAccessGenomics"));
                                saveErrors(req, ae);
                                return (new ActionForward(am.getInput()));
                        }
                }else{
                        msg="FirstColumnAccessGenomics";
                        ae.add("myerro",new ActionError("prompt.firstcolumn"));
                        saveErrors(req, ae);
                        return (new ActionForward(am.getInput()));
                }
                }catch(Exception e){
                                msg="WrongTable";
                                ae.add("myerro",new ActionError("prompt.Wrongtable"));
                                saveErrors(req, ae);
                                return (new ActionForward(am.getInput()));
                                //e.printStackTrace();
                        }
                finally{
                        if(con!=null)con.close();
                }
                Gxf.deleteFile(fileName);
                return am.findForward(msg);
        }
}
```

./WEB-INF/src/org/icrisat/lims/startup/details/GenotypesAction.java

```
/*
 * Created on Sep 6, 2005
 *
 * TODO To change the template for this generated file go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
package org.icrisat.lims.startup.details;

import java.io.File;
import java.io.InputStream;
//import java.io.OutputStream;
import java.sql.Connection;
import java.sql.PreparedStatement;
```

```
import java.sql.ResultSet;
import java.sql.Statement;
import java.sql.Timestamp;
import java.text.SimpleDateFormat;
import java.util.ArrayList;
import java.util.Calendar;
import java.util.GregorianCalendar;

import org.apache.struts.Globals;
import org.apache.struts.action.DynaActionForm;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import javax.sql.DataSource;

import jxl.Cell;
import jxl.Sheet;
import jxl.Workbook;

import org.apache.struts.action.Action;
import org.apache.struts.action.ActionError;
import org.apache.struts.action.ActionErrors;
import org.apache.struts.action.ActionForm;
import org.apache.struts.action.ActionForward;
import org.apache.struts.action.ActionMapping;
import org.apache.struts.upload.FormFile;
import org.icrisat.lims.common.CreateTemplate;
import org.icrisat.lims.common.UploadExcel;


/**
 * @author tpraveenreddy
 *
 * TODO To change the template for this generated type comment go to
 * Window - Preferences - Java - Code Style - Code Templates
 */
public class GenotypesAction extends Action{
        Statement st=null;
        ResultSet rs=null;
        // finds the duplicate genotypes
        public String getDuplicates(String filename, String sheetname){
                String strDuplicates="No";
                String s1="";
                try{
                Workbook workbook=Workbook.getWorkbook(new File(filename));
                Sheet sheet=workbook.getSheet(sheetname);
```

```
                int noofRows=sheet.getRows();
                        for(int i=1;i<noofRows;i++){
                                Cell cs=sheet.getCell(0,i);
                                String s2=cs.getContents().trim();

                                for(int j=1;j<noofRows;j++){
                                        Cell c1=sheet.getCell(0,j);
                                        s1=c1.getContents().trim();

                                                if(s2.equals(s1) && i!=j && !s1.equals("")){
                                                        strDuplicates="Yes";
                                                }
                                }
                        }
                }catch(Exception e){
                        e.toString();
                        strDuplicates="Exception"+e;
                        }
                return strDuplicates;
        }
        public ArrayList protocolList(HttpServletRequest req, Connection con){
                ArrayList protocolsList=new ArrayList();
                try{
                        Statement stprotocols=con.createStatement();
                        ResultSet rs=stprotocols.executeQuery("select Protocol_Name from DNA_Protocols where Proto
col_Type='Extraction'");
                        while(rs.next()){
                                protocolsList.add(rs.getString(1));
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }

                return protocolsList;
        }
        public ArrayList TissueSourceList(HttpServletRequest req, Connection con){
                ArrayList TissueSource=new ArrayList();
                try{
                        Statement stprotocols=con.createStatement();
                        ResultSet rs=stprotocols.executeQuery("select Distinct(type_of_material) from dna_extracti
on_exptdetails");
                        while(rs.next()){
                                TissueSource.add(rs.getString(1));
                        }
                }catch(Exception e){
                        e.printStackTrace();
                }

```

```
                return TissueSource;
        }
        // retrieves the Experiment Names
        public ArrayList exptnamesList(String un,HttpServletRequest req, Connection con){

                ArrayList eptNameList=new ArrayList();
                try{
                        Statement st = con.createStatement();
                        rs= st.executeQuery("SELECT Experiment_Name FROM Experiment_Master WHERE  (Experiment_Name
 NOT IN  (SELECT Experiment_Name  FROM Genotype_Master  WHERE  upsc_id = '"+ un +"')) AND (upsc_id ='"+ un +"')");
                        while(rs.next()){
                                eptNameList.add(rs.getString("Experiment_Name"));

                        }
                }catch(Exception e){
                        e.printStackTrace();
                }

                return eptNameList;
        }

        //generates the lims id
        public String getLimsid(long n){
                        String limsid="";
                        String temp="";
                        GregorianCalendar calendar = new GregorianCalendar();
                        int intY=calendar.get(Calendar.YEAR);
                        String strYear=String.valueOf(intY);
                        limsid=String.valueOf(n+1);
                        for (int i=0;i<7-limsid.length();i++){
                                temp="0" + temp;
                        }
                        limsid=strYear +"_"+temp + limsid;

                return limsid;
        }


        public ActionForward execute(ActionMapping map,ActionForm form,HttpServletRequest req,HttpServletResponse
resp)throws Exception
        {
                HttpSession session = req.getSession(true);
 //             user identification
                ActionErrors ae= new ActionErrors();
                DynaActionForm genoUF=(DynaActionForm) form;
                if((String)session.getAttribute("user")==null){
                         String msg="logout";
                        return map.findForward(msg);
```

```
                }

                Connection con=null;

                if(session!=null)
                {
                        //session.removeAttribute("exptnamesList");
                        session.removeAttribute("sFileName");
                }

                String msg="";
                String message="";
                String expt=req.getQueryString();
                PreparedStatement pstmt1=null;
                PreparedStatement pstmt=null;
                PreparedStatement pstmt2=null;
                PreparedStatement pstmt3=null;
                PreparedStatement pstmt4=null;

                try{
                        ServletContext context = servlet.getServletContext();
                        DataSource dataSource = (DataSource)context.getAttribute(Globals.DATA_SOURCE_KEY);
                        con=dataSource.getConnection();
                        st = con.createStatement();
                        String uname=(String) session.getAttribute("upsc");
                        if (expt!=null){
                                String Exceltype=genoUF.get("ExcelType").toString();
                                if(Exceltype.equals("arranged")){
                                        String count=genoUF.get("ExcelType1").toString();
                                        String foldername=session.getServletContext().getRealPath("//")+"/UploadFi
les";
                                         if(!new File(foldername).exists())
                                                   new File(foldername).mkdir();
                                        String name="Genotypes.xls";
                                        String finalFName=foldername+"//"+name;
                                        CreateTemplate geno=new CreateTemplate();
                                        geno.CreateGenotypesTemplate(Integer.parseInt(count),finalFName, "");
                                        session.setAttribute("Excelcount", count);
                                        ArrayList protocols = protocolList(req,con);
                                        session.setAttribute("protocols", protocols);
                                        ArrayList Tissue = TissueSourceList(req,con);
                                        session.setAttribute("Tissue",Tissue);
                                }
                                ArrayList enList = exptnamesList(uname,req,con);
                                session.setAttribute("exptnamesList", enList);
                                session.setAttribute("Exceltype", Exceltype);
                                msg="ins";
                        }else if(expt=="first"){
```

```
                                ArrayList enList = exptnamesList(uname,req,con);
                                session.setAttribute("exptnamesList", enList);
                        }else{
                                //Excel file upload and save
                                String Genotypeid="";
                                String sheetname="";
                                String exptname="";
                                InputStream stream=null;

                                UploadExcel Gxf = null;
                                String fileName="";
                                //String check = "";
                                Gxf=new UploadExcel();
                                exptname=genoUF.get("exptnames").toString();
                                if(session.getAttribute("Exceltype").equals("arranged")){
                                        sheetname="Genotypes";
                                }else{
                                        sheetname=genoUF.get("sheetname").toString();
                                }
                                String foldername=session.getServletContext().getRealPath("//")+"//"+"UploadFiles"
;
                                if(!new File(foldername).exists())
                                new File(foldername).mkdir();
                                if(req.getParameter("hdup")==null){
                                        FormFile file=(FormFile) genoUF.get("fileup");
                                        session.setAttribute("sFileName",file.getFileName());
                                        stream=file.getInputStream();

                                        fileName=foldername+"//"+file.getFileName();
                                        Gxf.createFile(stream,fileName);
                                }else{
                                        fileName=foldername+"//"+req.getParameter("fileup1");
                                }

                                String upscid=(String) session.getAttribute("upsc");

                                Workbook workbook=Workbook.getWorkbook(new File(fileName));
                                Sheet sheet=workbook.getSheet(sheetname);
                                if (sheet==null){
                                        ae.add("myerro",new ActionError("prompt.Sheet.err"));
                                        saveErrors(req, ae);
                                        return (new ActionForward(map.getInput()));

                                }else{
                                        ResultSet noofgenotypesrs = st.executeQuery("select Experiment_Name,No_of_
Genotypes from Experiment_Master where Experiment_Name='"+  exptname +"'");
                                        int noof=0;
                                        //Genotypeid should be first col & row
```

```
245                                         if(noofgenotypesrs.next()){
246                                                 noof= noofgenotypesrs.getInt("No_of_Genotypes");
247                                         }
248  //                                     /Get the maximum lims id
249                                         st=con.createStatement();
250                                         rs=st.executeQuery("select max(LIMS_Id)as lid from Genotype_Master");
251                                         String strMaxlimsid=null;
252
253                                         GregorianCalendar calendar = new GregorianCalendar();
254                                         int intYear=calendar.get(Calendar.YEAR);
255                                         String strYear=String.valueOf(intYear);
256                                         try{
257                                                 while(rs.next()){
258                                                         strMaxlimsid=rs.getString("lid");
259                                                 }
260                                         }catch(NullPointerException e){}
261                                         ///check the maximum lims id and assign the new lims id
262                                         if(strMaxlimsid==null || strMaxlimsid.equals("")){
263                                                 strMaxlimsid=strYear +"_000000";
264                                         }else if(Integer.parseInt(strMaxlimsid.substring(0,4))!=intYear){
265                                                 strMaxlimsid=strYear +"_000000";
266                                         }
267                                         String strL="";
268                                         strL=strMaxlimsid;
269
270  //                                     timestamp code
271                                         java.util.Date utilDate=new java.util.Date(System.currentTimeMillis());
272                                         Timestamp sqldate=new Timestamp(utilDate.getTime());
273                                         Timestamp ts=new Timestamp(sqldate.getTime());
274
275                                         pstmt=con.prepareStatement("insert into Genotype_Master values(?,?,?,?,?,?
)");
276                                         pstmt1=con.prepareStatement("insert into Genotype_Traitdetails values(?,?,
?)");
277
278
279
280                                         if(session.getAttribute("Exceltype").equals("arranged")){
281                                                 int Excelcount=Integer.parseInt((String)session.getAttribute("Exce
lcount"));
282                                                 int k=2;
283                                                 int total=0;
284                                                 String content="";
285                                                 String FinalContent="";
286                                                 for(int p=0;p<Excelcount;p++){
287                                                         String ContentInPlate="";
288                                                         String plate_name=sheet.getCell(1, k).getContents();
289                                                         if((plate_name.equals("Enter DNA Plate Id here"))||(plate_
```

```
name.equals(""))||(plate_name==null)){
                                                                        ae.add("myerro",new ActionError("dna.plate.id"));
                                                                        saveErrors(req, ae);
                                                                        return (new ActionForward(map.getInput()));
                                                                }else{
                                                                        st=con.createStatement();
                                                                        rs=st.executeQuery("select dna_plate_id from dna_e
xtraction_tracking where dna_plate_id='"+plate_name+"'");
                                                                        if(rs.next()){
                                                                                ae.add("myerro",new ActionError("PlateId.a
lready.exists"));
                                                                                saveErrors(req, ae);
                                                                                return (new ActionForward(map.getInput()))
;
                                                                        }
                                                                }

                                                                int cha=65;
                                                                for(int n=k+2;n<k+10;n++){
                                                                        for(int j=1;j<13;j++){
                                                                                content=sheet.getCell(j, n).getContents();
                                                                                if(!(content.equals("")){
                                                                                        ContentInPlate=ContentInPlate+cont
ent+"~!~"+new Character((char)cha).toString()+"~!~"+j+"~~~";
                                                                                        total++;
                                                                                }
                                                                        }
                                                                        cha=cha+1;
                                                                }
                                                                if(ContentInPlate.equals("")){
                                                                        ae.add("myerro",new ActionError("dna.empty.plate")
);
                                                                        saveErrors(req, ae);
                                                                        return (new ActionForward(map.getInput()));
                                                                }else{
                                                                        FinalContent=FinalContent+plate_name+"!~!"+Content
InPlate+"~~!!";
                                                                }
                                                                k=k+12;
                                                        }
                                                        System.out.println(noof+"!="+total);
                                                        if(noof!=total){
                                                                ae.add("myerro",new ActionError("prompt.noOfGenotypes.err"
));
                                                                saveErrors(req, ae);
                                                                return (new ActionForward(map.getInput()));
                                                        }
                                                        String ExtractionProtocol=(String)genoUF.get("ExtractionProtocol")
```

```
;
                                                        String TissueSource=(String)genoUF.get("TissueSource");
                                                        String Age=(String)genoUF.get("Age");
                                                        //date of extraction
                                                        java.util.Date udate=null;
                                                        Timestamp ts1=null;
                                                SimpleDateFormat df=new SimpleDateFormat("dd-MM-yy");
                                                udate=df.parse(req.getParameter("fromdate").toString());

                                                java.util.Date utilDate1=new java.util.Date(udate.getTime());
                                                        Timestamp sqldate1=new Timestamp(utilDate1.getTime());
                                                        ts1=new Timestamp(sqldate1.getTime());

                                                        if(TissueSource.equals("Add New")){
                                                                TissueSource=(String)genoUF.get("tissuetxt1");
                                                        }
                                                        pstmt2=con.prepareStatement("insert into dna_extraction_exptdetail
s values(?,?,?,?)");
                                                        pstmt3=con.prepareStatement("insert into dna_extraction_tracking v
alues(?,?,?,?,?,?)");
                                                        pstmt4=con.prepareStatement("insert into dna_extraction_well value
s(?,?,?,?)");

                                                        String[]SplitFinalContent=FinalContent.split("~~!!");
                                                        for(int a=0;a<SplitFinalContent.length;a++){
                                                                String[]plateDetails=SplitFinalContent[a].split("!~!");
                                                                String[]AccessionDetails=plateDetails[1].split("~~~");
                                                                for(int f=0;f<AccessionDetails.length;f++){
                                                                        String[]SplitAccessionDetails=AccessionDetails[f].
split("~!~");
                                                                        Genotypeid=SplitAccessionDetails[0];
                                                                        String sLid=getLimsid(Long.parseLong(strL.substrin
g(5)));
                                                                        pstmt.setString(1,sLid);
                                                                        pstmt.setString(2,Genotypeid);
                                                                        pstmt.setString(3,exptname);
                                                                        pstmt.setString(4,upscid);
                                                                        pstmt.setTimestamp(5,ts);
                                                                        pstmt.setTimestamp(6,null);
                                                                        pstmt.addBatch();

                                                                        pstmt4.setString(1, plateDetails[0]);
                                                                        pstmt4.setString(2, sLid);

                                                                        pstmt4.setInt(3, Integer.parseInt(SplitAccessionDe
tails[2]));
                                                                        pstmt4.setString(4, SplitAccessionDetails[1]);
                                                                        pstmt4.addBatch();
```

```


                                                                        strL=getLimsid(Long.parseLong(strL.substring(5)));
                                                                }
                                                                pstmt2.setString(1, plateDetails[0]);
                                                                pstmt2.setString(2, exptname);
                                                                pstmt2.setString(3, TissueSource);
                                                                pstmt2.setString(4, Age);
                                                                pstmt2.addBatch();

                                                                pstmt3.setString(1, plateDetails[0]);
                                                                pstmt3.setString(2, ExtractionProtocol);
                                                                pstmt3.setString(3, "96");
                                                                pstmt3.setString(4, upscid);
                                                                pstmt3.setTimestamp(5, ts1);
                                                                pstmt3.setTimestamp(6, null);
                                                                pstmt3.addBatch();
                                                        }
                                                        pstmt.executeBatch();
                                                        pstmt3.executeBatch();
                                                        pstmt2.executeBatch();
                                                        pstmt4.executeBatch();
                                                        msg="success";
                                                }else{
                                                        ///************** type of ExcelSheets is plain ****************
  //                                                    confirmation of row and column are not empty
                                                        /*int intNR=sheet.getRows();
                                                        int intNC=sheet.getColumns();
                                                        int intRowCount=0;
                                                        int intColCount=0;
                                                        for (int i=0;i<intNC;i++){
                                                                Cell c=sheet.getCell(i,0);
                                                                String s=c.getContents().trim();
                                                                if(!s.equals("")){
                                                                        intColCount=intColCount + 1;
                                                                }
                                                        }
                                                        for(int i=0;i<intNR;i++){
                                                                Cell c=sheet.getCell(0,i);
                                                                String s=c.getContents().trim();
                                                                if(!s.equals("")){
                                                                        intRowCount=intRowCount+1;
                                                                }
                                                        }

                                                        if (sheet.getCell(0,0).getContents().trim().equalsIgnoreCase("Geno
typeID") || sheet.getCell(0,0).getContents().trim().equalsIgnoreCase("Genotype ID")){
                                                                int intnoofrows=sheet.getRows();
```

```
416                                                                 //check the number of uploaded genomics with number of gen
omics in experiment master
417                                                                 if (intRowCount-1!=noof){

418                                                                         ae.add("myerro",new ActionError("prompt.noOfGenoty
pes.err"));
419                                                                         saveErrors(req, ae);
420                                                                         return (new ActionForward(map.getInput()));
421                                                                 }else{

422                                                                         if(req.getParameter("hdup")==null){
423                                                                                 String strDuplicateValues=getDuplicates(fi
leName,sheetname);
424                                                                                 if (strDuplicateValues.equals("Yes")){
425                                                                                         return map.findForward("duplicates
");
426                                                                                 }
427                                                                         }
428
429                                                                         int intnoofcolumns=sheet.getColumns();
430                                                                         int intAdd=0;
431                                                                         String s1="";
432                                                                         String[] ss=new String[intnoofcolumns];
433                                                                         String[] ssvalue=new String[intnoofcolumns];
434
435


436                                                                         for(int i=0;i<intnoofrows;i++){
437                                                                                 for(int j=0;j<intnoofcolumns;j++){
438                                                                                         Cell c1=sheet.getCell(j,i);
439                                                                                         s1=c1.getContents().trim();
440                                                                                         if (sheet.getCell(j,i) == sheet.ge
tCell(j,0) && !sheet.getCell(j, 0).getContents().trim().equals("") && !sheet.getCell(j, 0).getContents().trim().equals(nul
l)){
441                                                                                                 ss[j]=s1;
442                                                                                         }
443                                                                                         if (sheet.getCell(j,i) != sheet.ge
tCell(j,0) && !sheet.getCell(j,0).getContents().trim().equals("") && !sheet.getCell(0,i).getContents().trim().equals("") )
{
444                                                                                                 ssvalue[j]=s1;
445                                                                                         }
446                                                                                 }
447
448                                                                                 if (i != 0 ){
449                                                                                         Genotypeid=ssvalue[0];
450                                                                                         String sLid=getLimsid(Long.parseLo
ng(strL.substring(5)));
451                                                                                         if (intnoofcolumns>1){
```

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   452                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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ong(strL.substring(5)));
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ong(strL.substring(5)));
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                }

                return map.findForward(msg);
        }

}
```