```java
package DBLayer;
import ModelLayer.*;

import java.sql.*;


public class DBPlasmaDisease implements IFDBPlasmaDisease
{
   private Connection con;
   //private PreparedStatement pStmtSelect;

   // Creates a new instance of DBPlasmDisease
   public DBPlasmaDisease()
   {
         con = DbConnection.getInstance().getDBcon();
   }


   @Override
   //method to find the disease using diseaseId.
    public PlasmaDisease searchDiseaseById(int diseaseId,
    boolean retriveAssociation)
    {
         String wClause = "  diseaseId = '" + diseaseId + "'";
         return singleWhere(wClause, retriveAssociation);
    }


   @Override
   // find plasma disease using the name.
   public PlasmaDisease searchPlasmaDiseaseByName(String
   diseaseName, boolean retriveAssociation)
   {
         String wClause = "diseaseName like '%" + diseaseName +
         "%'";
        System.out.println("Search PlasmaDisease " + wClause)
        ;
        return singleWhere(wClause, retriveAssociation);
   }


   @Override
   public int updatePlasmaDisease(PlasmaDisease plasmadis)
   {
         PlasmaDisease plasObj  = plasmadis;
         int rc=-1;

         String query="UPDATE plasmadis SET "+
                     "clinicName ='"+ plasObj.getClinicName() + "', " +
                     "clinicCVR ='"+ plasObj.getClinicCVR() + "', " +
                     "diseaseName ='"+ plasObj.getDiseaseName()+"' " +
                     "WHERE diseaseId ='"+ plasObj.getDiseaseId()+"' ";

       System.out.println("Update query:" + query);
         try
         {
            // update employee
               Statement stmt = con.createStatement();
               stmt.setQueryTimeout(5);
               rc = stmt.executeUpdate(query);
               stmt.close();
         }//end try
         catch(Exception ex)
         {
```

```
65                System.out.println("Update exception in PlasmaDisease DB:
66                "+ex);
67           }
68           return(rc);
69       }
70
71
72       @Override
73       public int insertPlasmaDisease(PlasmaDisease plasmadis)
74        {
75            int rc = -1;
76            PreparedStatement pstmt = null;
77            String insert = "INSERT INTO mfPlasmaDisease (
78            diseaseId, clinicName, clinicCVR, diseaseName)"+
79                         "values (?,?,?,?)";
80            System.out.println(insert);
81            try
82            {
83                pstmt = con.prepareStatement(insert);
84                pstmt.setInt   ( 1, plasmadis.getDiseaseId() );
85                pstmt.setString( 2, plasmadis.getClinicName() );
86                pstmt.setString( 3, plasmadis.getClinicCVR() );
87                pstmt.setString( 4, plasmadis.getDiseaseName() );
88                rc = pstmt.executeUpdate();
89            }
90             catch(SQLException sqlE)
91             {
92                System.out.println("SQL Error");
93                System.out.println(sqlE.getMessage());
94             }
95             catch(Exception e)
96             {
97                e.getMessage();
98            }
99
100            return rc;
101      }
102
103
104      @Override
105      public int deletePlasmaDisease(int plasmaId)
106       {
107           int rc = -1;
108           PreparedStatement pstmt = null;
109           String delete = "DELETE FROM mfPlasmaDisease WHERE
110           diseaseId = ?";
111           System.out.println(delete);
112           try
113           {
114                 pstmt = con.prepareStatement(delete);
115               pstmt.setInt( 1, plasmaId);
116               rc = pstmt.executeUpdate();
117           }
118           catch(SQLException sqlE)
119           {
120               System.out.println("SQL Error");
121               System.out.println(sqlE.getMessage());
122           }
123           catch(Exception e)
124           {
125               e.getMessage();
126           }
127
128           return rc;
```

```
129     }
130
131
132   //SingleWhere is used to select one disease.
133   private PlasmaDisease singleWhere(String wClause, boolean
134   retrieveAssociation)
135   {
136         ResultSet results;
137       String query =  buildQuery(wClause);
138         System.out.println(query);
139
140         try
141         {
142               //read the disease from the database
143               Statement stmt = con.createStatement();
144               stmt.setQueryTimeout(5);
145               results = stmt.executeQuery(query);
146
147               if( results.next() )
148               {
149                     PlasmaDisease plasObj = buildPlasmaDisease(results);
150                 stmt.close();
151                 return plasObj;
152               }
153               else
154               {
155                     //no disease info was found
156                     return null;
157               }
158
159         }//end try
160         catch(Exception e)
161         {
162               System.out.println("Query exception: "+e);
163         }
164
165         return null;
166   }
167
168
169   //method to build the query
170   private String buildQuery(String wClause)
171   {
172         String query = "SELECT diseaseId, clinicName, clinicCVR,
173         diseaseName FROM mfPlasmaDisease";
174         if (wClause.length()>0)
175         query = query + " WHERE "+ wClause;
176         return query;
177   }
178
179
180   //method to build a plasma disease object.
181   private PlasmaDisease buildPlasmaDisease(ResultSet results)
182   {
183         try
184         {
185               //use columns from mfPlasmaDisease table.
186               PlasmaDisease plasmadisObj = new PlasmaDisease(
187                           results.getInt("diseaseId"),
188                           results.getString("clinicName"),
189                           results.getString("clinicCVR"),
190                           results.getString("diseaseName"));
191
192               return plasmadisObj;
```

```
193
194         }
195         catch (Exception e)
196         {
197               System.out.println("Error building the Disease Plasma
198               object.");
199         }
200
201         return null;
202   }
203
204 }// end of class DBPlasmaDisease.
```