**JSP AND JDBC:**

***package*** *com;*

***import*** *java.sql.Connection;*

***import*** *java.sql.PreparedStatement;*

***import*** *java.sql.ResultSet;*

***import*** *java.sql.Statement;*

***import*** *java.util.ArrayList;*

***import*** *java.util.Collections;*

***import*** *java.util.Comparator;*

***import*** *java.util.LinkedHashMap;*

***import*** *org.json.simple.JSONArray;*

***import*** *org.json.simple.JSONObject;*

***import*** *com.sun.xml.internal.bind.v2.schemagen.xmlschema.List;*

***public******class*** *AdminDAO {*

***public******static*** *String login(String email,String password){*

*String query="select \* from "+DBDetails.ADMIN\_TABLE+" where "+DBDetails.EMAIL\_COL+"=? and "+DBDetails.PASSWORD\_COL+"=?";*

***try****{*

*Connection con=DBConnect.getConnection();*

*PreparedStatement ps=con.prepareStatement(query);*

*ps.setString(1,email);*

*ps.setString(2,password);*

*ResultSet rs=ps.executeQuery();*

***if****(rs.next()){*

***return*** *"true";*

*}*

*ps.close();*

*con.close();*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

***return*** *"false";*

*}*

***public******static*** *String addQuestion(String question,String a,String b,String c,String d,String set,String answer){*

*String query="insert into "+DBDetails.QUESTION\_TABLE+" ("+DBDetails.TEXT\_COL+","+DBDetails.SET\_COL+","+DBDetails.ANSWER\_COL+") values(?,?,?)";*

***int*** *id=0;*

***try****{*

*Connection con=DBConnect.getConnection();*

*PreparedStatement ps=con.prepareStatement(query, Statement.RETURN\_GENERATED\_KEYS);*

*ps.setString(1,question);*

*ps.setString(2,set);*

*ps.setString(3,answer);*

*ps.executeUpdate();*

*ResultSet rs=ps.getGeneratedKeys();*

***if****(rs.next()){*

*id=rs.getInt(1);*

*}*

*query="insert into "+DBDetails.CHOICE\_TABLE+" ("+DBDetails.TEXT\_COL+","+DBDetails.QUESTION\_ID\_COL+") values(?,?)";*

*ps=con.prepareStatement(query);*

*ps.setString(1,a);*

*ps.setInt(2,id);*

*ps.executeUpdate();*

*query="insert into "+DBDetails.CHOICE\_TABLE+" ("+DBDetails.TEXT\_COL+","+DBDetails.QUESTION\_ID\_COL+") values(?,?)";*

*ps=con.prepareStatement(query);*

*ps.setString(1,b);*

*ps.setInt(2,id);*

*ps.executeUpdate();*

*query="insert into "+DBDetails.CHOICE\_TABLE+" ("+DBDetails.TEXT\_COL+","+DBDetails.QUESTION\_ID\_COL+") values(?,?)";*

*ps=con.prepareStatement(query);*

*ps.setString(1,c);*

*ps.setInt(2,id);*

*ps.executeUpdate();*

*query="insert into "+DBDetails.CHOICE\_TABLE+" ("+DBDetails.TEXT\_COL+","+DBDetails.QUESTION\_ID\_COL+") values(?,?)";*

*ps=con.prepareStatement(query);*

*ps.setString(1,d);*

*ps.setInt(2,id);*

*ps.executeUpdate();*

***return*** *"true";*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

***return*** *"false";*

*}*

***public******static*** *JSONArray getQuestions(String set){*

*String query="select \* from "+DBDetails.QUESTION\_TABLE+" where "+DBDetails.SET\_COL+"=?";*

*JSONArray array=****new*** *JSONArray();*

*JSONObject obj;*

***try****{*

*Connection con=DBConnect.getConnection();*

*PreparedStatement ps=con.prepareStatement(query);*

*ps.setString(1,set);*

*ResultSet rs=ps.executeQuery();*

*ResultSet rs1=****null****;*

***while****(rs.next()){*

*obj=****new*** *JSONObject();*

*obj.put("id", rs.getString(DBDetails.ID\_COL));*

*obj.put("question", rs.getString(DBDetails.TEXT\_COL));*

*obj.put("answer", rs.getString(DBDetails.ANSWER\_COL));*

*query="select \* from "+DBDetails.CHOICE\_TABLE+" where "+DBDetails.QUESTION\_ID\_COL+"=?";*

*ps=con.prepareStatement(query);*

*ps.setString(1,rs.getString(DBDetails.ID\_COL));*

*rs1=ps.executeQuery();*

*rs1.absolute(1);*

*obj.put("a", rs1.getString(DBDetails.TEXT\_COL));*

*rs1.absolute(2);*

*obj.put("b", rs1.getString(DBDetails.TEXT\_COL));*

*rs1.absolute(3);*

*obj.put("c", rs1.getString(DBDetails.TEXT\_COL));*

*rs1.absolute(4);*

*obj.put("d", rs1.getString(DBDetails.TEXT\_COL));*

*array.add(obj);*

*}*

*rs.close();*

*rs1.close();*

*ps.close();*

*con.close();*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

***return*** *array;*

*}*

***public******static*** *JSONArray getResult(){*

*String query="select \* from "+DBDetails.USER\_TABLE;*

*JSONArray array=* ***new*** *JSONArray();*

*JSONObject obj;*

***try****{*

*Connection con=DBConnect.getConnection();*

*PreparedStatement ps=con.prepareStatement(query);*

*ResultSet rs=ps.executeQuery();*

*ResultSet rs1=****null****;*

*query="select \* from "+DBDetails.RESULT\_TABLE+" where "+DBDetails.USER\_ID\_COL+"=?";*

***while****(rs.next()){*

*ps=con.prepareStatement(query);*

*ps.setString(1,rs.getString(DBDetails.ID\_COL));*

*rs1=ps.executeQuery();*

***int*** *points=0;*

***while****(rs1.next()){*

***if****(checkAnswer(rs1.getString(DBDetails.QUESTION\_ID\_COL), rs1.getString(DBDetails.ANSWER\_COL))){*

*points++;*

*}*

*}*

*obj=****new*** *JSONObject();*

*obj.put("name", rs.getString(DBDetails.NAME\_COL));*

*obj.put("email", rs.getString(DBDetails.EMAIL\_COL));*

*obj.put("points", points);*

*array.add(obj);*

*}*

*rs1.close();*

*rs.close();*

*ps.close();*

*con.close();*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

*JSONArray sortedJsonArray =* ***new*** *JSONArray();*

*ArrayList<JSONObject> jsonValues =* ***new*** *ArrayList<JSONObject>();*

***for*** *(****int*** *i = 0; i < array.size(); i++) {*

*jsonValues.add((JSONObject)array.get(i));*

*}*

*Collections.sort( jsonValues,* ***new*** *Comparator<JSONObject>() {*

*//You can change "Name" with "ID" if you want to sort by ID*

***private******static******final*** *String KEY\_NAME = "points";*

*@Override*

***public******int*** *compare(JSONObject a, JSONObject b) {*

*Integer valA=****null****;*

*Integer valB=****null****;*

***try*** *{*

*valA =* ***new*** *Integer(String.valueOf(a.get(KEY\_NAME)));*

*valB =* ***new*** *Integer(String.valueOf(b.get(KEY\_NAME)));*

*}*

***catch*** *(Exception e) {*

*e.printStackTrace();*

*}*

***return*** *valB > valA ? 1 : valB < valA ? -1 : 0;*

*//if you want to change the sort order, simply use the following:*

*//return -valA.compareTo(valB);*

*}*

*});*

***for*** *(****int*** *i = 0; i < array.size(); i++) {*

*sortedJsonArray.add(jsonValues.get(i));*

*}*

***return*** *sortedJsonArray;*

*}*

***public******static******boolean*** *checkAnswer(String id,String answer){*

*String query="select \* from "+DBDetails.QUESTION\_TABLE+" where "+DBDetails.ID\_COL+"=?";*

***try****{*

*Connection con=DBConnect.getConnection();*

*PreparedStatement ps=con.prepareStatement(query);*

*ps.setString(1,id);*

*ResultSet rs=ps.executeQuery();*

***if****(rs.next()){*

***if****(rs.getString(DBDetails.ANSWER\_COL).equals(answer)){*

***return******true****;*

*}*

*}*

*rs.close();*

*ps.close();*

*con.close();*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

***return******false****;*

*}*

***public******static*** *JSONObject getQuestion(String id){*

*String query="select \* from "+DBDetails.QUESTION\_TABLE+" where "+DBDetails.ID\_COL+"=?";*

*JSONObject obj=****null****;*

***try****{*

*Connection con=DBConnect.getConnection();*

*PreparedStatement ps=con.prepareStatement(query);*

*ps.setString(1,id);*

*ResultSet rs=ps.executeQuery();*

*ResultSet rs1=****null****;*

***if****(rs.next()){*

*obj=****new*** *JSONObject();*

*obj.put("id", rs.getString(DBDetails.ID\_COL));*

*obj.put("question", rs.getString(DBDetails.TEXT\_COL));*

*obj.put("answer", rs.getString(DBDetails.ANSWER\_COL));*

*obj.put("set", rs.getString(DBDetails.SET\_COL));*

*query="select \* from "+DBDetails.CHOICE\_TABLE+" where "+DBDetails.QUESTION\_ID\_COL+"=?";*

*ps=con.prepareStatement(query);*

*ps.setString(1,rs.getString(DBDetails.ID\_COL));*

*rs1=ps.executeQuery();*

*rs1.absolute(1);*

*obj.put("a", rs1.getString(DBDetails.TEXT\_COL));*

*rs1.absolute(2);*

*obj.put("b", rs1.getString(DBDetails.TEXT\_COL));*

*rs1.absolute(3);*

*obj.put("c", rs1.getString(DBDetails.TEXT\_COL));*

*rs1.absolute(4);*

*obj.put("d", rs1.getString(DBDetails.TEXT\_COL));*

*}*

*rs.close();*

*rs1.close();*

*ps.close();*

*con.close();*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

***return*** *obj;*

*}*

***public******static*** *String deleteQuestion(String id){*

*String query="delete from "+DBDetails.QUESTION\_TABLE+" where "+DBDetails.ID\_COL+"=?";*

***int*** *result1=0,result2=0;*

***try****{*

*Connection con=DBConnect.getConnection();*

*PreparedStatement ps=con.prepareStatement(query);*

*ps.setString(1, id);*

*result1=ps.executeUpdate();*

*query="delete from "+DBDetails.CHOICE\_TABLE+" where "+DBDetails.QUESTION\_ID\_COL+"=?";*

*ps=con.prepareStatement(query);*

*ps.setString(1,id);*

*result2=ps.executeUpdate();*

***if****(result1>0&&result2>0){*

***return*** *"true";*

*}*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

***return*** *"false";*

*}*

***public******static******boolean*** *checkAnswerExists(String id,LinkedHashMap lhm){*

***if****(lhm.containsKey(id)){*

***if****(lhm.get(id)!=****null****){*

***return******true****;*

*}*

*}*

***return******false****;*

*}*

***package*** *com;*

***import*** *java.sql.Connection;*

***import*** *java.sql.DriverManager;*

***public******class*** *DBConnect {*

***static*** *String URL="localhost:3306/";*

***static*** *String DATABASE\_NAME="codewarrior";*

***static*** *String USERNAME="root";*

***static*** *String PASSWORD="root";*

***public******static*** *Connection getConnection(){*

*Connection con=****null****;*

***try****{*

*Class.forName("com.mysql.jdbc.Driver");*

*con=DriverManager.getConnection("jdbc:mysql://"+URL+DATABASE\_NAME,USERNAME,PASSWORD);*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

***return*** *con;*

***package*** *com;*

***public******class*** *DBDetails {*

***static*** *String USER\_TABLE="USER";*

***static*** *String ID\_COL="ID";*

***static*** *String NAME\_COL="NAME";*

***static*** *String EMAIL\_COL="EMAIL";*

***static*** *String ADMIN\_TABLE="ADMIN";*

***static*** *String PASSWORD\_COL="PASSWORD";*

***static*** *String QUESTION\_TABLE="QUESTION";*

***static*** *String TEXT\_COL="TEXT";*

***static*** *String SET\_COL="Q\_SET";*

***static*** *String ANSWER\_COL="ANSWER";*

***static*** *String CHOICE\_TABLE="CHOICE";*

***static*** *String QUESTION\_ID\_COL="Q\_ID";*

***static*** *String RESULT\_TABLE="RESULT";*

***static*** *String USER\_ID\_COL="U\_ID";*

}

*}*

***package*** *com;*

***import*** *java.sql.Connection;*

***import*** *java.sql.PreparedStatement;*

***import*** *java.sql.ResultSet;*

***import*** *java.util.HashMap;*

***import*** *java.util.Iterator;*

***import*** *java.util.LinkedHashMap;*

***import*** *java.util.Map;*

***import*** *java.util.Set;*

***import*** *org.json.simple.JSONObject;*

***public******class*** *UserDAO {*

***public******static*** *String registerUser(String name,String email){*

*String query="select \* from "+DBDetails.USER\_TABLE+" where "+DBDetails.EMAIL\_COL+"=?";*

***try****{*

*Connection con=DBConnect.getConnection();*

*PreparedStatement ps=con.prepareStatement(query);*

*ps.setString(1,email);*

*ResultSet rs=ps.executeQuery();*

***if****(rs.next()){*

***return*** *"registered";*

*}*

*query="insert into "+DBDetails.USER\_TABLE+" ("+DBDetails.NAME\_COL+","+DBDetails.EMAIL\_COL+") values(?,?)";*

*ps=con.prepareStatement(query);*

*ps.setString(1,name);*

*ps.setString(2,email);*

***int*** *result=ps.executeUpdate();*

*ps.close();*

*con.close();*

***if****(result>0){*

***return*** *"true";*

*}*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

***return*** *"false";*

*}*

***public******static*** *String getQuestion(String question\_no,String set){*

*String query="select \* from "+DBDetails.QUESTION\_TABLE+" where "+DBDetails.SET\_COL+"=?";*

*JSONObject obj=****new*** *JSONObject();*

***try****{*

*Connection con=DBConnect.getConnection();*

*PreparedStatement ps=con.prepareStatement(query);*

*ps.setString(1,set);*

*ResultSet rs=ps.executeQuery();*

*ResultSet rs1=****null****;*

***if****(rs.next()){*

*rs.absolute(Integer.parseInt(question\_no));*

*obj.put("question", rs.getString(DBDetails.TEXT\_COL));*

*obj.put("id", rs.getString(DBDetails.ID\_COL));*

*query="select \* from "+DBDetails.CHOICE\_TABLE+" where "+DBDetails.QUESTION\_ID\_COL+"=?";*

*ps=con.prepareStatement(query);*

*ps.setString(1,rs.getString(DBDetails.ID\_COL));*

*rs1=ps.executeQuery();*

***if****(rs1.next()){*

*rs1.absolute(1);*

*obj.put("a", rs1.getString(DBDetails.TEXT\_COL));*

*rs1.absolute(2);*

*obj.put("b", rs1.getString(DBDetails.TEXT\_COL));*

*rs1.absolute(3);*

*obj.put("c", rs1.getString(DBDetails.TEXT\_COL));*

*rs1.absolute(4);*

*obj.put("d", rs1.getString(DBDetails.TEXT\_COL));*

*}*

*}*

*ps.close();*

*rs.close();*

*rs1.close();*

*con.close();*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

***return*** *obj.toString();*

*}*

***public******static******void*** *setResult(String id,LinkedHashMap lhm){*

*String query="insert into "+DBDetails.RESULT\_TABLE+" ("+DBDetails.ANSWER\_COL+","+DBDetails.QUESTION\_ID\_COL+","+DBDetails.USER\_ID\_COL+") values(?,?,?)";*

***try****{*

*Connection con=DBConnect.getConnection();*

*PreparedStatement ps;*

*Set set=lhm.entrySet();*

*Iterator it=set.iterator();*

***while****(it.hasNext()){*

*Map.Entry m=(Map.Entry)it.next();*

*ps=con.prepareStatement(query);*

*ps.setString(1,m.getValue().toString());*

*ps.setString(2,m.getKey().toString());*

*ps.setString(3,id);*

*ps.executeUpdate();*

*}*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

*}*

***public******static*** *String getUserID(String email){*

*String query="select \* from "+DBDetails.USER\_TABLE+" where "+DBDetails.EMAIL\_COL+"=?";*

*String id="";*

***try****{*

*Connection con=DBConnect.getConnection();*

*PreparedStatement ps=con.prepareStatement(query);*

*ps.setString(1,email);*

*ResultSet rs=ps.executeQuery();*

***if****(rs.next()){*

*id=rs.getString(DBDetails.ID\_COL);*

*}*

*}****catch****(Exception e){*

*e.printStackTrace();*

*}*

***return*** *id;*

}

}