**Code and steps for executing lab sheet 8**

1. Right click on the project and go to Build Path. Select Add External Archives.
2. Navigate to "C:\Program Files\glassfish-4.1\javadb\lib" and open derby.jar, derbyclient.jar, derbytools.jar

**OR**

If you are trying on your PCs and if glassfish is not installed. Please do the following steps

Download derby from the following link <http://db.apache.org/derby/derby_downloads.html>

|  |  |
| --- | --- |
| **Operating System** | **Download File** |
| Windows | db-derby-10.14.2.0-bin.zip |
| UNIX, Linux, and Mac | db-derby-10.14.2.0-bin.tar.gz |

Configure and verify derby following the steps mentioned in this link

<https://db.apache.org/derby/papers/DerbyTut/install_software.html#derby_configure>

1. Right click on the project and go to Build Path. Select Add External Archives.
2. Navigate to the folder you have created installed derby

For eg: C:\Apache\db-derby-10.14.2.0-bin\lib

and open derby.jar, derbyclient.jar, derbytools.jar

**import** java.io.\*;

**import** java.awt.\*;

**import** javax.swing.\*;

**import** java.awt.event.\*;

**import** java.sql.\*;

**import** java.util.\*;

**import** java.util.logging.Level;

**import** java.util.logging.Logger;

**class** Customer {

JFrame f;

JPanel p1,p2,p3;

JTabbedPane tp;

ImageIcon btnimg1,btnimg2;

JLabel l1, l2, l3, l4,l5,l6,l7,l8,l9,l10;

JTextField tf1,tf2,tf4,tf5,tf6,tf7,tf8,tf10,tf11;

JScrollPane sp1;

JButton savebtn,resetbtn,editbtn1,editbtn2,deletebtn ;

JComboBox tf3,tf9;

Customer(){

f=**new** JFrame("Customer Form");

p1=**new** JPanel(**new** GridLayout(5,2));

p2=**new** JPanel(**new** GridLayout(6,2));

p3=**new** JPanel(**new** GridLayout(2,2));

tp=**new** JTabbedPane();

l1=**new** JLabel("Customer Name:");

l2=**new** JLabel("Customer email:");

l3=**new** JLabel("Customer Country:");

l4=**new** JLabel("Customer Gender:");

l5=**new** JLabel("Enter Customer ID to delete record:");

l6=**new** JLabel("Customer ID:");

l7=**new** JLabel("Customer Name:");

l8=**new** JLabel("Customer email:");

l9=**new** JLabel("Customer Country:");

l10=**new** JLabel("Customer Gender:");

tf1=**new** JTextField(12);

tf2=**new** JTextField(12);

tf4=**new** JTextField(12);

tf5=**new** JTextField(12);

tf6=**new** JTextField(12);

tf7=**new** JTextField(12);

tf8=**new** JTextField(12);

tf10=**new** JTextField(12);

tf11 = **new** JTextField(12);

tf3=**new** JComboBox();

tf3.addItem("INDIA");

tf3.addItem("AMERICA");

tf3.addItem("AUSTRALIA");

tf3.addItem("PHILLIPHINES");

tf3.addItem("SPAIN");

tf9=**new** JComboBox();

tf9.addItem("INDIA");

tf9.addItem("AMERICA");

tf9.addItem("AUSTRALIA");

tf9.addItem("PHILLIPHINES");

tf9.addItem("SPAIN");

savebtn=**new** JButton(" Add ");

resetbtn=**new** JButton(" Reset");

editbtn1=**new** JButton(" Edit ");

editbtn2=**new** JButton(" Save");

deletebtn=**new** JButton("Delete");

p1.add(l1);

p1.add(tf1);

p1.add(l2);

p1.add(tf2);

p1.add(l3);

p1.add(tf3);

p1.add(l4);

p1.add(tf4);

p1.add(savebtn);

p1.add(resetbtn);

p2.add(l6);

p2.add(tf11);

p2.add(l7);

p2.add(tf7);

p2.add(l8);

p2.add(tf8);

p2.add(l9);

p2.add(tf9);

p2.add(l10);

p2.add(tf10);

p2.add(editbtn1);

p2.add(editbtn2);

p3.add(l5);

p3.add(tf5);

p3.add(deletebtn);

resetbtn.addActionListener(**new** ActionListener() {

**public** **void** actionPerformed(ActionEvent ae){

tf1.setText("");

tf2.setText("");

tf3.setSelectedIndex(0);

tf4.setText("");

}

});

// Uncomment the following lines when you execute the code for the first time to //create the database and comment it after the first time

// try {

// createDatabase();

// } catch (Exception e1) {

// e1.printStackTrace();

// }

savebtn.addActionListener(**new** ActionListener() {

**public** **void** actionPerformed(ActionEvent ae){

String value1=tf1.getText();

String value2=tf2.getText();

String value3=(String) tf3.getSelectedItem();

String value4=tf4.getText();

System.***out***.println(value1+value2+value3+value4);

**try**{

Connection con = getConnection();

**int** customerid = getCustomerID(con);

PreparedStatement st=con.prepareStatement("insert into CUSTOMER\_INFO(CUSTOMER\_ID,CUSTOMER\_NAME,CUSTOMER\_EMAIL,CUSTOMER\_COUNTRY,CUSTOMER\_GENDER) values(?,?,?,?,?)");

st.setInt(1,customerid);

st.setString(2,value1);

st.setString(3,value2);

st.setString(4,value3);

st.setString(5,value4);

st.executeUpdate();

JOptionPane.*showMessageDialog*(p1,"Data is successfully inserted into database.");

}

**catch**(ClassNotFoundException e){

JOptionPane.*showMessageDialog*(p1,"Error in submitting data!");

} **catch** (SQLException ex) {

Logger.*getLogger*(Customer.**class**.getName()).log(Level.***SEVERE***, **null**, ex);

}

}

});

editbtn1.addActionListener(**new** ActionListener() {

**public** **void** actionPerformed(ActionEvent ae){

**int** value=Integer.*parseInt*(tf11.getText());

**try**{

Connection con = getConnection();

PreparedStatement st=con.prepareStatement("select \* from CUSTOMER\_INFO where CUSTOMER\_ID=?");

st.setInt(1,value);

ResultSet res=st.executeQuery();

res.next();

tf11.setText(Integer.*toString*(res.getInt(1)));

tf7.setText(res.getString(2));

tf8.setText(res.getString(3));

tf9.setSelectedItem(res.getString(4));

tf10.setText(res.getString(5));

con.close();

}

**catch**(ClassNotFoundException e)

{

JOptionPane.*showMessageDialog*(p2,"Can not edit data");

} **catch** (SQLException ex) {

Logger.*getLogger*(Customer.**class**.getName()).log(Level.***SEVERE***, **null**, ex);

}

}

});

editbtn2.addActionListener(**new** ActionListener() {

**public** **void** actionPerformed(ActionEvent ae){

**int** x=JOptionPane.*showConfirmDialog*(p2,"Confirm edit? All data will be replaced");

**if**(x==0){

**try**{

**int** value1=Integer.*parseInt*(tf11.getText());

String value2=tf7.getText();

String value3=tf8.getText();

String value4=(String) tf9.getSelectedItem();

String value5 =tf10.getText();

Connection con = getConnection();

Statement st=con.createStatement();

st.executeUpdate("update CUSTOMER\_INFO set CUSTOMER\_NAME='"+value2+"', CUSTOMER\_EMAIL='"+value3+"',CUSTOMER\_COUNTRY='"+value4+"',CUSTOMER\_GENDER='"+value5+"' where CUSTOMER\_ID="+value1+"");

JOptionPane.*showMessageDialog*(p2,"Updated successfully");

con.close();

}

**catch**(ClassNotFoundException ex)

{

JOptionPane.*showMessageDialog*(p2,"Error in updating edit fields");

} **catch** (SQLException ex) {

Logger.*getLogger*(Customer.**class**.getName()).log(Level.***SEVERE***, **null**, ex);

}

}

}

});

}

**void** dis()

{

f.getContentPane().add(tp);

tp.addTab("Add Record",p1);

tp.addTab("Edit Record",p2);

tp.addTab("Delete Record",p3);

f.setSize(400,200);

f.setVisible(**true**);

f.setResizable(**true**);

}

**public** Connection getConnection() **throws** ClassNotFoundException, SQLException{

Class.*forName*("org.apache.derby.jdbc.EmbeddedDriver");

Connection con = DriverManager.*getConnection*("jdbc:derby:cust;create=true;user=app;password=app");

**return** con;

}

**public** **void** closeConnection(Connection con) **throws** SQLException{

con.close();

}

**public** **int** getCustomerID(Connection con) **throws** SQLException{

**int** value = 0;

Statement stmt=con.createStatement();

ResultSet rs = stmt.executeQuery("Select Max(CUSTOMER\_ID) from CUSTOMER\_INFO");

**if**(rs.next()) value = rs.getInt(1);

**return** value+1;

}

**public** **static** **void** main(String z[]){

Customer pro=**new** Customer();

pro.dis();

}

**public** **void** createDatabase() **throws** ClassNotFoundException, SQLException {

Class.*forName*("org.apache.derby.jdbc.EmbeddedDriver");

Connection con = DriverManager.*getConnection*("jdbc:derby:cust;create=true;user=app;password=app");

String createString = "create table CUSTOMER\_INFO(CUSTOMER\_ID INTEGER PRIMARY KEY,\r\n" +

"CUSTOMER\_NAME VARCHAR(20),\r\n" +

"CUSTOMER\_EMAIL VARCHAR(50),\r\n" +

"CUSTOMER\_COUNTRY VARCHAR(20),\r\n" +

"CUSTOMER\_GENDER VARCHAR(20))";

Statement stmt = con.createStatement();

stmt.executeUpdate(createString); }

}