

o. Design a **JFrame Form** to create a GUI related to Student having fields as Roll no, Name, Level, Division and Major with different buttons as Save, Delete, Edit and Display where Records are shown in JTable.

```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
import javax.swing.*;
import javax.swing.table.*;

/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to
change this license
 * Click nbfs://nbhost/SystemFileSystem/Templates/GUIForms/JFrame.java to edit
this template
 */
public class StudentsGuiDesignCrud extends javax.swing.JFrame {

    public StudentsGuiDesignCrud() {
        setTitle("Students Entry Form");
        initComponents();
        DisplayTable();
    }

    /**
     * This method is called from within the constructor to initialize the form.
     * WARNING: Do NOT modify this code. The content of this method is always
     * regenerated by the Form Editor.
     */
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code"> //GEN-
BEGIN: initComponents
    private void initComponents() {

        jPanel1 = new javax.swing.JPanel();
        jLabel1 = new javax.swing.JLabel();
        jPanel2 = new javax.swing.JPanel();
        jLabel2 = new javax.swing.JLabel();
        rolltxt = new javax.swing.JTextField();
        nametxt = new javax.swing.JTextField();
        jLabel3 = new javax.swing.JLabel();
        jLabel4 = new javax.swing.JLabel();
        leveltxt = new javax.swing.JTextField();
        jLabel5 = new javax.swing.JLabel();
        divisiontxt = new javax.swing.JTextField();
        jLabel6 = new javax.swing.JLabel();
```

```

majortxt = new javax.swing.JTextField();
jPanel3 = new javax.swing.JPanel();
insertbtn = new javax.swing.JButton();
updatebtn = new javax.swing.JButton();
deletebtn = new javax.swing.JButton();
displaybtn = new javax.swing.JButton();
jScrollPane1 = new javax.swing.JScrollPane();
tableDisplay = new javax.swing.JTable();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

jPanel1.setBorder(javax.swing.BorderFactory.createBevelBorder(javax.swing
.border.BevelBorder.RAISED));

jLabel1.setText("Students Entry Form");
jPanel1.add(jLabel1);

jPanel2.setBorder(new javax.swing.border.MatteBorder(null));
jPanel2.setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

jLabel2.setText("Roll No");
jPanel2.add(jLabel2, new
org.netbeans.lib.awtextra.AbsoluteConstraints(24, 16, 63, -1));
jPanel2.add(rolltxt, new
org.netbeans.lib.awtextra.AbsoluteConstraints(93, 13, 350, -1));
jPanel2.add(nametxt, new
org.netbeans.lib.awtextra.AbsoluteConstraints(93, 48, 350, -1));

jLabel3.setText("Name");
jPanel2.add(jLabel3, new
org.netbeans.lib.awtextra.AbsoluteConstraints(24, 51, 63, -1));

jLabel4.setText("Level");
jPanel2.add(jLabel4, new
org.netbeans.lib.awtextra.AbsoluteConstraints(24, 86, 63, -1));
jPanel2.add(leveltxt, new
org.netbeans.lib.awtextra.AbsoluteConstraints(93, 83, 350, -1));

jLabel5.setText("Division");
jPanel2.add(jLabel5, new
org.netbeans.lib.awtextra.AbsoluteConstraints(24, 121, 63, -1));
jPanel2.add(divisiontxt, new
org.netbeans.lib.awtextra.AbsoluteConstraints(93, 118, 350, -1));

jLabel6.setText("Major");

```

```

jPanel12.add(jLabel6, new
org.netbeans.lib.awtextra.AbsoluteConstraints(24, 156, 63, -1));

majortxt.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        majortxtActionPerformed(evt);
    }
});
jPanel12.add(majortxt, new
org.netbeans.lib.awtextra.AbsoluteConstraints(93, 153, 350, -1));

jPanel13.setBorder(javax.swing.BorderFactory.createEtchedBorder());
jPanel13.setLayout(new java.awt.GridLayout(1, 0));

insertbtn.setText("Insert");
insertbtn.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        insertbtnActionPerformed(evt);
    }
});
jPanel13.add(insertbtn);

updatebtn.setText("Update");
updatebtn.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        updatebtnActionPerformed(evt);
    }
});
jPanel13.add(updatebtn);

deletebtn.setText("Delete");
deletebtn.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        deletebtnActionPerformed(evt);
    }
});
jPanel13.add(deletebtn);

displaybtn.setText("Display");
displaybtn.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        displaybtnActionPerformed(evt);
    }
});
jPanel13.add(displaybtn);

```

```

        tableDisplay.setBorder(javax.swing.BorderFactory.createBevelBorder(javax.
swing.border.BevelBorder.RAISED));
        tableDisplay.setModel(new javax.swing.table.DefaultTableModel(
            new Object [][] {
                {null, null, null, null, null},
                {null, null, null, null, null},
                {null, null, null, null, null},
                {null, null, null, null, null},
                {null, null, null, null, null},
                {null, null, null, null, null},
                {null, null, null, null, null},
                {null, null, null, null, null},
                {null, null, null, null, null},
                {null, null, null, null, null},
                {null, null, null, null, null},
                {null, null, null, null, null},
                {null, null, null, null, null}
            },
            new String [] {
                "Roll No", "Name", "Level", "Division", "Major"
            }
        ) {
            Class[] types = new Class [] {
                java.lang.Integer.class, java.lang.String.class,
                java.lang.String.class, java.lang.String.class, java.lang.String.class
            };

            public Class getColumnClass(int columnIndex) {
                return types [columnIndex];
            }
        });
        tableDisplay.setCursor(new java.awt.Cursor(java.awt.Cursor.HAND_CURSOR));
        jScrollPane1.setViewportView(tableDisplay);

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addGroup(layout.createSequentialGroup()
                    .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Ali
gment.LEADING, false)

```

```

        .addComponent(jPanel12, javax.swing.GroupLayout.DEFAULT_SIZE,
463, Short.MAX_VALUE)
        .addComponent(jPanel13, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELAT
ED)
        .addComponent(jScrollPane1, javax.swing.GroupLayout.DEFAULT_SIZE,
398, Short.MAX_VALUE))
    );
    layout.setVerticalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addComponent(jPanel11, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELAT
ED)
            .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Align
ment.LEADING, false)
                .addGroup(layout.createSequentialGroup()
                    .addComponent(jPanel12,
javax.swing.GroupLayout.PREFERRED_SIZE, 187,
javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addPreferredGap(javax.swing.LayoutStyle.ComponentPlaceme
nt.RELATED)
                    .addComponent(jPanel13,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE, 0, Short.MAX_VALUE))
                .addContainerGap(15, Short.MAX_VALUE))
            );

    pack();
} // </editor-fold> // GEN-END: initComponents

private void majortxtActionPerformed(java.awt.event.ActionEvent evt) { // GEN-
FIRST:event_majortxtActionPerformed
    // TODO add your handling code here:
} // GEN-LAST:event_majortxtActionPerformed

private void deletebtnActionPerformed(java.awt.event.ActionEvent evt) { // GEN-
FIRST:event_deletebtnActionPerformed
    String rolldelete = JOptionPane.showInputDialog("Enter Roll number for
delete:");
    try {

```

```

String URL = "jdbc:mysql://localhost:3306/college";
String username = "root";
String password = "";
Connection conn = DriverManager.getConnection(URL, username,
password);

String deleteQuery = "DELETE FROM student WHERE id= (?)";
PreparedStatement pstmt = conn.prepareStatement(deleteQuery);

pstmt.setInt(1, Integer.parseInt(rolldelete));
Component frame = null;
int rowAffected = pstmt.executeUpdate();
if (rowAffected > 0) {
    JOptionPane.showMessageDialog(frame, "Record Delete Successfully
");
} else {
    JOptionPane.showMessageDialog(frame, "Error while Deleting
record... ");
}
DisplayTable();
} catch (NumberFormatException | SQLException e) {
    System.out.println(e.getMessage());
}
} //GEN-LAST:event_deletebtnActionPerformed

private void updatebtnActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
FIRST:event_updatebtnActionPerformed
    try {
        String URL = "jdbc:mysql://localhost:3306/college";
        String username = "root";
        String password = "";
        Connection conn = DriverManager.getConnection(URL, username,
password);

        String updateQuery = "UPDATE student SET name = ?, level = ?,
division = ?, major = ? WHERE id = ?";
        PreparedStatement pstmt = conn.prepareStatement(updateQuery);

        // Insert first record
        pstmt.setInt(5, Integer.parseInt(rolltxt.getText()));
        pstmt.setString(1, nametxt.getText());
        pstmt.setString(2, leveltxt.getText());
        pstmt.setString(3, divisiontxt.getText());
        pstmt.setString(4, majortxt.getText());
    }
}

```

```

        int rowAffected = pstmt.executeUpdate();
        Component frame = null;
        if (rowAffected > 0) {
            JOptionPane.showMessageDialog(frame, "Record Update Successfully
");
        } else {
            JOptionPane.showMessageDialog(frame, "Error while Update
record... ");
        }
        DisplayTable();
    } catch (HeadlessException | NumberFormatException | SQLException e) {
        System.out.println(e.getMessage());
    }
} //GEN-LAST:event_updatebtnActionPerformed

private void insertbtnActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
FIRST:event_insertbtnActionPerformed
    // TODO add your handling code here:
    try {
        String URL = "jdbc:mysql://localhost:3306/college";
        String username = "root";
        String password = "";
        Connection conn = DriverManager.getConnection(URL, username,
password);

        String insertQuery = "INSERT INTO student VALUES (?, ?, ?, ?, ?)";
        PreparedStatement pstmt = conn.prepareStatement(insertQuery);

        // Insert first record
        pstmt.setInt(1, Integer.parseInt(rolltxt.getText()));
        pstmt.setString(2, nametxt.getText());
        pstmt.setString(3, leveltxt.getText());
        pstmt.setString(4, divisiontxt.getText());
        pstmt.setString(5, majortxt.getText());
        int rowAffected = pstmt.executeUpdate();
        Component frame = null;
        if (rowAffected > 0) {
            JOptionPane.showMessageDialog(frame, "Record Insert Successfully
");
        } else {
            JOptionPane.showMessageDialog(frame, "Error while inserting
record... ");
        }
        DisplayTable();
    } catch (HeadlessException | NumberFormatException | SQLException e) {

```

```

        System.out.println(e.getMessage());
    }
} //GEN-LAST:event_insertbtnActionPerformed

public void InsertFunction() {
}

private void displaybtnActionPerformed(java.awt.event.ActionEvent evt)
{ //GEN-FIRST:event_displaybtnActionPerformed
    DisplayTable();
} //GEN-LAST:event_displaybtnActionPerformed
// function to display data in tables and thsi functio is called in
display button , after inser , update,delete
public void DisplayTable() {
    try {
        String URL = "jdbc:mysql://localhost:3306/college";
        String username = "root";
        String password = "";
        Connection conn = DriverManager.getConnection(URL, username,
password);

        String displayQuery = "SELECT * FROM student";
        PreparedStatement pstmt = conn.prepareStatement(displayQuery);

        ResultSet rs = pstmt.executeQuery();
        DefaultTableModel tblModel = (DefaultTableModel)
tableDisplay.getModel();
        tblModel.setRowCount(0); // Clear the existing rows

        while (rs.next()) {
            int roll = rs.getInt(1);
            String name = rs.getString(2);
            String level = rs.getString(3);
            String div = rs.getString(4);
            String major = rs.getString(5);

            Object[] tblData = {roll, name, level, div, major};
            tblModel.addRow(tblData);
        }

        rs.close();
        pstmt.close();
        conn.close();
    } catch (SQLException e) {
        System.out.println(e.getMessage());
    }
}

```



```

    }
}

/**
 * @param args the command line arguments
 */
public static void main(String args[]) {
    /* Set the Nimbus look and feel */
    //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code
(optional) ">
    /* If Nimbus (introduced in Java SE 6) is not available, stay with the
default look and feel.
    * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
    */
    try {
        for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
            if ("Nimbus".equals(info.getName())) {
                javax.swing.UIManager.setLookAndFeel(info.getClassName());
                break;
            }
        }
    } catch (ClassNotFoundException ex) {
        java.util.logging.Logger.getLogger(StudentsGuiDesignCrud.class.getNam
e()).log(java.util.logging.Level.SEVERE, null, ex);
    } catch (InstantiationException ex) {
        java.util.logging.Logger.getLogger(StudentsGuiDesignCrud.class.getNam
e()).log(java.util.logging.Level.SEVERE, null, ex);
    } catch (IllegalAccessException ex) {
        java.util.logging.Logger.getLogger(StudentsGuiDesignCrud.class.getNam
e()).log(java.util.logging.Level.SEVERE, null, ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {
        java.util.logging.Logger.getLogger(StudentsGuiDesignCrud.class.getNam
e()).log(java.util.logging.Level.SEVERE, null, ex);
    }
}
//</editor-fold>

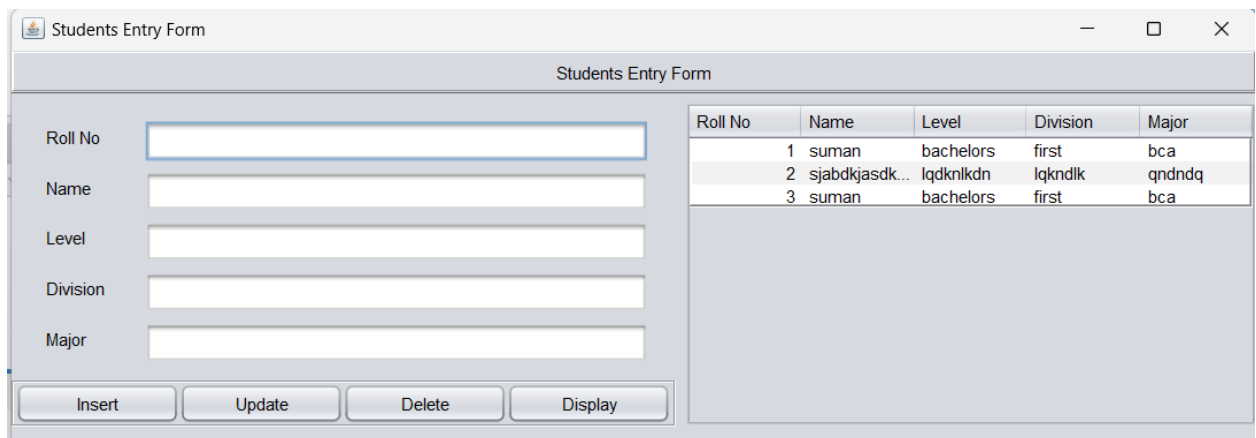
/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new StudentsGuiDesignCrud().setVisible(true);
    }
});
}

```

```

// Variables declaration - do not modify//GEN-BEGIN:variables
private javax.swing.JButton deletebtn;
private javax.swing.JButton displaybtn;
private javax.swing.JTextField divisiontxt;
private javax.swing.JButton insertbtn;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel2;
private javax.swing.JLabel jLabel3;
private javax.swing.JLabel jLabel4;
private javax.swing.JLabel jLabel5;
private javax.swing.JLabel jLabel6;
private javax.swing.JPanel jPanel1;
private javax.swing.JPanel jPanel2;
private javax.swing.JPanel jPanel3;
private javax.swing.JScrollPane jScrollPane1;
private javax.swing.JTextField leveltxt;
private javax.swing.JTextField majortxt;
private javax.swing.JTextField nametxt;
private javax.swing.JTextField rolltxt;
private javax.swing.JTable tableDisplay;
private javax.swing.JButton updatebtn;
// End of variables declaration//GEN-END:variables
}

```



Roll No	Name	Level	Division	Major
1	suman	bachelors	first	bca
2	sjabdkjasdk...	lqdknlkdn	lqkndlk	qndndq
3	suman	bachelors	first	bca