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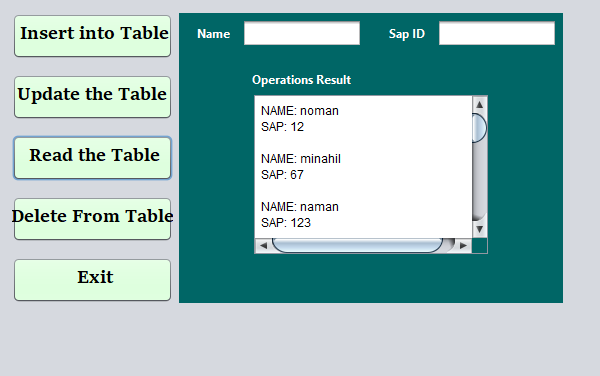
***SAP ID : 49004***

***Submitted to : Ms.Zulatun Gul Khan***

***Subject : Advance Computing Programming***

***Date : 09/05/2023***

**JDBC Assignment**

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**Instructions of using this Software is given below the code**

**Code**

import javax.swing.\*;

import java.sql.\*;

public class last extends javax.swing.JFrame {

private Connection connection;

private void connectToDatabase() {

try {

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

connection = DriverManager.getConnection("jdbc:mysql://localhost:3306/student", "root", "");

System.out.println("Connected to the database successfully");

} catch (ClassNotFoundException | SQLException ex) {

ex.printStackTrace();

JOptionPane.showMessageDialog(this, "Failed to connect to the database!");

System.exit(1);

}

}

public last() {

initComponents();

connectToDatabase();

}

@SuppressWarnings("unchecked")

// <editor-fold defaultstate="collapsed" desc="Generated Code">

private void initComponents() {

jButton1 = new javax.swing.JButton();

jButton2 = new javax.swing.JButton();

jButton3 = new javax.swing.JButton();

jButton4 = new javax.swing.JButton();

jButton5 = new javax.swing.JButton();

jPanel1 = new javax.swing.JPanel();

jTextField1 = new javax.swing.JTextField();

jTextField3 = new javax.swing.JTextField();

jLabel1 = new javax.swing.JLabel();

jLabel3 = new javax.swing.JLabel();

jScrollPane1 = new javax.swing.JScrollPane();

jTextArea1 = new javax.swing.JTextArea();

jLabel2 = new javax.swing.JLabel();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT\_ON\_CLOSE);

setBackground(new java.awt.Color(0, 0, 0));

jButton1.setBackground(new java.awt.Color(204, 255, 204));

jButton1.setFont(new java.awt.Font("Sitka Text", 1, 18)); // NOI18N

jButton1.setText(" Insert into Table");

jButton1.setBorder(new javax.swing.border.MatteBorder(null));

jButton1.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton1ActionPerformed(evt);

}

});

jButton2.setBackground(new java.awt.Color(204, 255, 204));

jButton2.setFont(new java.awt.Font("Sitka Text", 1, 18)); // NOI18N

jButton2.setText("Update the Table");

jButton2.setBorder(new javax.swing.border.MatteBorder(null));

jButton2.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton2ActionPerformed(evt);

}

});

jButton3.setBackground(new java.awt.Color(204, 255, 204));

jButton3.setFont(new java.awt.Font("Sitka Text", 1, 18)); // NOI18N

jButton3.setText(" Read the Table");

jButton3.setBorder(new javax.swing.border.MatteBorder(null));

jButton3.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton3ActionPerformed(evt);

}

});

jButton4.setBackground(new java.awt.Color(204, 255, 204));

jButton4.setFont(new java.awt.Font("Sitka Text", 1, 18)); // NOI18N

jButton4.setText("Delete From Table");

jButton4.setBorder(new javax.swing.border.MatteBorder(null));

jButton4.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton4ActionPerformed(evt);

}

});

jButton5.setBackground(new java.awt.Color(204, 255, 204));

jButton5.setFont(new java.awt.Font("Sitka Text", 1, 18)); // NOI18N

jButton5.setText(" Exit");

jButton5.setBorder(new javax.swing.border.MatteBorder(null));

jButton5.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton5ActionPerformed(evt);

}

});

jPanel1.setBackground(new java.awt.Color(0, 102, 102));

jLabel1.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N

jLabel1.setForeground(new java.awt.Color(255, 255, 255));

jLabel1.setText("Name");

jLabel3.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N

jLabel3.setForeground(new java.awt.Color(255, 255, 255));

jLabel3.setText("Sap ID");

jTextArea1.setColumns(20);

jTextArea1.setRows(5);

jScrollPane1.setViewportView(jTextArea1);

jLabel2.setFont(new java.awt.Font("Segoe UI", 1, 12)); // NOI18N

jLabel2.setForeground(new java.awt.Color(255, 255, 255));

jLabel2.setText("Operations Result");

javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);

jPanel1.setLayout(jPanel1Layout);

jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(jPanel1Layout.createSequentialGroup()

.addGap(18, 18, 18)

.addComponent(jLabel1)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

.addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED\_SIZE, 120, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 27, Short.MAX\_VALUE)

.addComponent(jLabel3)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

.addComponent(jTextField3, javax.swing.GroupLayout.PREFERRED\_SIZE, 120, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addContainerGap())

.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, jPanel1Layout.createSequentialGroup()

.addContainerGap(javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addComponent(jLabel2)

.addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGap(73, 73, 73))

);

jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(jPanel1Layout.createSequentialGroup()

.addContainerGap()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jTextField1)

.addComponent(jTextField3)

.addComponent(jLabel1)

.addComponent(jLabel3))

.addGap(24, 24, 24)

.addComponent(jLabel2)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED\_SIZE, 163, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(0, 0, Short.MAX\_VALUE))

);

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());

getContentPane().setLayout(layout);

layout.setHorizontalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(layout.createSequentialGroup()

.addGap(16, 16, 16)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jButton1, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton2, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton3, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton4, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton5, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addContainerGap(39, Short.MAX\_VALUE))

);

layout.setVerticalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(layout.createSequentialGroup()

.addGap(15, 15, 15)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addGroup(layout.createSequentialGroup()

.addComponent(jButton1, javax.swing.GroupLayout.PREFERRED\_SIZE, 46, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(15, 15, 15)

.addComponent(jButton2, javax.swing.GroupLayout.PREFERRED\_SIZE, 46, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(15, 15, 15)

.addComponent(jButton3, javax.swing.GroupLayout.PREFERRED\_SIZE, 46, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(15, 15, 15)

.addComponent(jButton4, javax.swing.GroupLayout.PREFERRED\_SIZE, 46, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(15, 15, 15)

.addComponent(jButton5, javax.swing.GroupLayout.PREFERRED\_SIZE, 46, javax.swing.GroupLayout.PREFERRED\_SIZE)))

.addContainerGap(148, Short.MAX\_VALUE))

);

pack();

}// </editor-fold>

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {

// TODO add your handling code here:

String name = jTextField1.getText();

int sap = Integer.parseInt(jTextField3.getText());

try {

String insertSQL = "INSERT INTO student (name, sap) VALUES (?, ?)";

PreparedStatement insert = connection.prepareStatement(insertSQL);

insert.setString(1, name);

insert.setInt(2, sap);

insert.executeUpdate();

jTextArea1.setText("Row Inserted Successfully");

} catch (SQLException ex) {

ex.printStackTrace();

jTextArea1.setText("Failed to insert row");

}

}

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {

// TODO add your handling code here:

String name = jTextField1.getText();

int newSap = Integer.parseInt(jTextField3.getText());

try {

String updateStatement = "UPDATE student SET sap = ? WHERE name = ?";

PreparedStatement update = connection.prepareStatement(updateStatement);

update.setInt(1, newSap);

update.setString(2, name);

int rowsAffected = update.executeUpdate();

jTextArea1.setText(rowsAffected + " Rows updated successfully");

} catch (SQLException ex) {

ex.printStackTrace();

jTextArea1.setText("Failed to update row");

}

}

private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {

// TODO add your handling code here:

try {

String sql = "SELECT \* FROM student";

Statement statement = connection.createStatement();

ResultSet rs = statement.executeQuery(sql);

StringBuilder result = new StringBuilder();

while (rs.next()) {

result.append("NAME: ").append(rs.getString("name")).append("\n");

result.append("SAP: ").append(rs.getInt("sap")).append("\n\n");

}

jTextArea1.setText(result.toString());

} catch (SQLException ex) {

ex.printStackTrace();

jTextArea1.setText("Failed to read from table");

}

}

private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {

// TODO add your handling code here:

String name = jTextField1.getText();

try {

String deleteQuery = "DELETE FROM student WHERE name = ?";

PreparedStatement delete = connection.prepareStatement(deleteQuery);

delete.setString(1, name);

int rowsAffected = delete.executeUpdate();

jTextArea1.setText(rowsAffected + " rows deleted successfully");

} catch (SQLException ex) {

ex.printStackTrace();

jTextArea1.setText("Failed to delete row");

}

}

private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) {

// TODO add your handling code here:

try {

if (connection != null) {

connection.close();

}

} catch (SQLException ex) {

ex.printStackTrace();

}

System.exit(0);

}

public static void main(String args[]) {

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(last.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(last.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(last.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(last.class.getName()).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 last().setVisible(true);

}

});

}

// Variables declaration - do not modify

private javax.swing.JButton jButton1;

private javax.swing.JButton jButton2;

private javax.swing.JButton jButton3;

private javax.swing.JButton jButton4;

private javax.swing.JButton jButton5;

private javax.swing.JLabel jLabel1;

private javax.swing.JLabel jLabel2;

private javax.swing.JLabel jLabel3;

private javax.swing.JPanel jPanel1;

private javax.swing.JScrollPane jScrollPane1;

private javax.swing.JTextArea jTextArea1;

private javax.swing.JTextField jTextField1;

private javax.swing.JTextField jTextField3;

// End of variables declaration

/\* 1. to insert a row write name and sap in the text fields first than click insert button.

2. to update write name of student that you want to update than update the sap first than click update button.

3. to read , just click the read button.

4. to delete , write name in text field first than click button.

5. click exit button to exit.

\*/

}