## **JDBC Mini project**

**Aim:** To present a attendance monitoring system and attendance calculator using database management system and java .

## **Source code:**

```
import javax.swing.*;
import javax.swing.table.DefaultTableModel;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
class AttendanceCalculatorSwing extends JFrame {
  private static final String DB URL =
"jdbc:mysql://localhost:3306/attendance db";
  private static final String USER = "root";
  private static final String PASS = "12345678";
  private JTextField searchField;
  private JButton searchButton;
  private JTable resultsTable;
  private DefaultTableModel tableModel;
  public AttendanceCalculatorSwing() {
    setTitle("Attendance Calculator");
```

```
setSize(600, 400);
    setDefaultCloseOperation(JFrame.EXIT ON CLOSE);
    setLocationRelativeTo(null);
    // Layout and panel
    JPanel panel = new JPanel(new BorderLayout());
    JPanel inputPanel = new JPanel(new FlowLayout());
    // Search field
    searchField = new JTextField(20);
    searchButton = new JButton("Search");
    // Table for displaying results
    String[] columns = {"ID", "Name", "Total Classes", "Classes
Attended", "Attendance %", "Status"};
    tableModel = new DefaultTableModel(columns, 0);
    resultsTable = new JTable(tableModel);
    // Add search field and button to input panel
    inputPanel.add(new JLabel("Enter student name:"));
    inputPanel.add(searchField);
    inputPanel.add(searchButton);
    // Add components to main panel
    panel.add(inputPanel, BorderLayout.NORTH);
    panel.add(new JScrollPane(resultsTable), BorderLayout.CENTER);
    // Add main panel to the frame
    add(panel);
    // Action listener for search button
    searchButton.addActionListener(this::performSearch);
  }
```

```
// Method to perform the search and update table
  private void performSearch(ActionEvent e) {
    String studentNameInput = searchField.getText().trim();
    // Clear previous results
    tableModel.setRowCount(0);
    // Database guery with optional name filter
    String sqlQuery = "SELECT student id, student name,
total classes, classes attended FROM students";
    if (!studentNameInput.isBlank()) {
      sqlQuery += " WHERE student_name LIKE ?";
    }
    try (Connection connection =
DriverManager.getConnection(DB URL, USER, PASS);
       PreparedStatement preparedStatement =
connection.prepareStatement(sqlQuery)) {
      // Set the search parameter if a name was provided
      if (!studentNameInput.isBlank()) {
        preparedStatement.setString(1, "%" + studentNameInput +
"%");
      }
      ResultSet resultSet = preparedStatement.executeQuery();
      // Check if any results were found
      boolean hasResults = false;
      while (resultSet.next()) {
        hasResults = true;
        int studentId = resultSet.getInt("student id");
```

```
String studentName = resultSet.getString("student name");
        int totalClasses = resultSet.getInt("total classes");
        int classesAttended = resultSet.getInt("classes attended");
        // Calculate attendance percentage
        double attendancePercentage = (totalClasses > 0)?
             ((double) classesAttended / totalClasses) * 100 : 0.0;
        // Determine if there is a shortage of attendance
        String status = (attendancePercentage < 75)? "Shortage of
Attendance": "Sufficient Attendance";
        // Add row to table model
        tableModel.addRow(new Object[]{studentId, studentName,
totalClasses, classesAttended, String.format("%.2f",
attendancePercentage), status});
      // If no results were found, show a message
      if (!hasResults) {
        JOptionPane.showMessageDialog(this, "No records found
for student name: " + studentNameInput, "No Results",
JOptionPane.INFORMATION_MESSAGE);
      }
    } catch (SQLException ex) {
      JOptionPane.showMessageDialog(this, "Database error: " +
ex.getMessage(), "Error", JOptionPane. ERROR MESSAGE);
      ex.printStackTrace();
    }
  }
  public static void main(String[] args) {
```

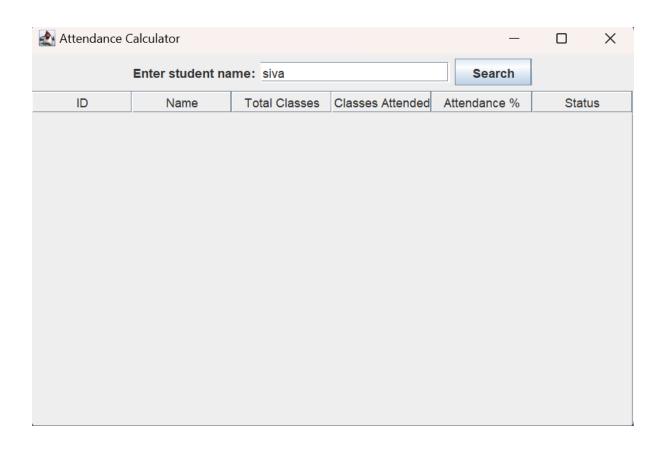
```
// Run the GUI application
SwingUtilities.invokeLater(() -> {
    AttendanceCalculatorSwing app = new
AttendanceCalculatorSwing();
    app.setVisible(true);
    });
}
```

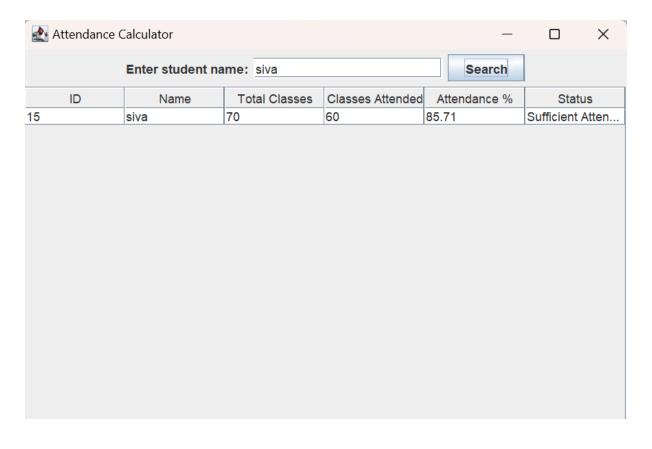
## **Output:**

## • Attendance Monitor

ID	Name	Total Classes	Classes Attended	Attendance %	
	Alice	30	28	93.33%	
	Bob	30	25	83.33%	
	Charlie	30	27	90.00%	
Diana		30	30	100.00%	
Eve		30	20	66.67%	
;	Alice	30	28	93.33%	
•	Bob	30	25	83.33%	
	Charlie	30	27	90.00%	
	Diana	30	30	100.00%	
0	Eve	30	20	66.67%	
1	keerthana	73	45	61.64%	
2	madhan	70	55	78.57%	
3	davis	70	67	95.71%	
4	hema	70	30	42.86%	
5	siva	70	60	85.71%	
6	cynthia	93	50	53.76%	
7	riya	90	55	61.11%	
8	tawfiq	80	47	58.75%	
9	das	84	53	63.10%	
20	leo	70	10	14.29%	

• Attendance Calculator





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The given project has been completed and performed successfully.

Team members: Sivarangini.Y

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