

## **Code:**

### **DBConnection Class:**

```
package student;
import java.sql.Connection;
import java.sql.DriverManager;

public class DBConnection {
    public static Connection connect() {
        Connection conn = null;
        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            conn = DriverManager.getConnection(
                "jdbc:mysql://localhost:3306/student_management",
                "root",
                ""
            );
        } catch (Exception e) {
            e.printStackTrace();
        }
        return conn;
    }
}
```

### **AddStudent Class:**

```
package student;
import javax.swing.*.*;
```

```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;

public class AddStudent extends JFrame {
    JTextField nameField, emailField, courseField;
    JButton addButton;

    AddStudent() {
        setTitle("Add Student");
        setSize(350, 300);
        setDefaultCloseOperation(DISPOSE_ON_CLOSE);
        setLocationRelativeTo(null);

        JPanel panel = new JPanel();
        panel.setLayout(null);
        panel.setBackground(new Color(232, 245, 233));
        add(panel);

        JLabel titleLabel = new JLabel("Add Student");
        titleLabel.setFont(new Font("Arial", Font.BOLD, 20));
        titleLabel.setBounds(110, 10, 200, 30);
        titleLabel.setForeground(new Color(56, 142, 60));
        panel.add(titleLabel);

        JLabel nameLabel = new JLabel("Name:");
        nameLabel.setBounds(30, 60, 80, 25);
```

```
panel.add(nameLabel);  
nameField = new JTextField();  
nameField.setBounds(120, 60, 180, 25);  
panel.add(nameField);
```

```
JLabel emailLabel = new JLabel("Email:");  
emailLabel.setBounds(30, 100, 80, 25);  
panel.add(emailLabel);  
emailField = new JTextField();  
emailField.setBounds(120, 100, 180, 25);  
panel.add(emailField);
```

```
JLabel courseLabel = new JLabel("Course:");  
courseLabel.setBounds(30, 140, 80, 25);  
panel.add(courseLabel);  
courseField = new JTextField();  
courseField.setBounds(120, 140, 180, 25);  
panel.add(courseField);
```

```
addButton = new JButton("Add");  
addButton.setBounds(120, 190, 100, 30);  
addButton.setBackground(new Color(76, 175, 80));  
addButton.setForeground(Color.WHITE);  
panel.add(addButton);
```

```
addButton.addActionListener(e -> {  
    try {
```

```

        Connection conn = DBConnection.connect();
        String query = "INSERT INTO students(name,
email, course) VALUES (?, ?, ?)";
        PreparedStatement pst =
conn.prepareStatement(query);
        pst.setString(1, nameField.getText());
        pst.setString(2, emailField.getText());
        pst.setString(3, courseField.getText());
        pst.executeUpdate();
        JOptionPane.showMessageDialog(null, "Student
Added!");
        conn.close();
    } catch (Exception ex) {
        ex.printStackTrace();
        JOptionPane.showMessageDialog(null, "Error
Adding Student!");
    }
});

setVisible(true);
}
}

```

### **UpdateStudent Class:**

```

package student;
import javax.swing.*.*;
import java.awt.*.*;
import java.awt.event.*;

```

```
import java.sql.*;
```

```
public class UpdateStudent extends JFrame {  
    JTextField idField, nameField, emailField, courseField;  
    JButton updateButton;
```

```
    UpdateStudent() {  
        setTitle("Update Student");  
        setSize(350, 350);  
        setDefaultCloseOperation(DISPOSE_ON_CLOSE);  
        setLocationRelativeTo(null);
```

```
        JPanel panel = new JPanel();  
        panel.setLayout(null);  
        panel.setBackground(new Color(240, 255, 240));  
        add(panel);
```

```
        JLabel titleLabel = new JLabel("Update Student");  
        titleLabel.setFont(new Font("Arial", Font.BOLD, 20));  
        titleLabel.setForeground(new Color(0, 102, 51));  
        titleLabel.setBounds(90, 10, 200, 30);  
        panel.add(titleLabel);
```

```
        JLabel idLabel = new JLabel("Student ID:");  
        idLabel.setBounds(30, 60, 80, 25);  
        panel.add(idLabel);
```

```
idField = new JTextField();  
idField.setBounds(120, 60, 180, 25);  
panel.add(idField);
```

```
JLabel nameLabel = new JLabel("Name:");  
nameLabel.setBounds(30, 100, 80, 25);  
panel.add(nameLabel);
```

```
nameField = new JTextField();  
nameField.setBounds(120, 100, 180, 25);  
panel.add(nameField);
```

```
JLabel emailLabel = new JLabel("Email:");  
emailLabel.setBounds(30, 140, 80, 25);  
panel.add(emailLabel);
```

```
emailField = new JTextField();  
emailField.setBounds(120, 140, 180, 25);  
panel.add(emailField);
```

```
JLabel courseLabel = new JLabel("Course:");  
courseLabel.setBounds(30, 180, 80, 25);  
panel.add(courseLabel);
```

```
courseField = new JTextField();  
courseField.setBounds(120, 180, 180, 25);  
panel.add(courseField);
```

```
updateButton = new JButton("Update");
updateButton.setBounds(110, 230, 120, 30);
updateButton.setBackground(new Color(0, 153, 76));
updateButton.setForeground(Color.WHITE);
panel.add(updateButton);

updateButton.addActionListener(e -> {
    try {
        Connection conn = DBConnection.connect();
        String query = "UPDATE students SET name=?,
email=?, course=? WHERE id=?";
        PreparedStatement pst =
conn.prepareStatement(query);
        pst.setString(1, nameField.getText());
        pst.setString(2, emailField.getText());
        pst.setString(3, courseField.getText());
        pst.setInt(4, Integer.parseInt(idField.getText()));
        pst.executeUpdate();
        JOptionPane.showMessageDialog(null, "Student
Updated!");
        conn.close();
    } catch (Exception ex) {
        ex.printStackTrace();
        JOptionPane.showMessageDialog(null, "Error
Updating Student!");
    }
}
```

```
});  
  
    setVisible(true);  
}  
}
```

### **DeleteStudent Class:**

```
package student;  
import javax.swing.*.*;  
import java.awt.*.*;  
import java.awt.event.*;  
import java.sql.*;  
  
public class DeleteStudent extends JFrame {  
    JTextField idField;  
    JButton deleteButton;  
  
    DeleteStudent() {  
        setTitle("Delete Student");  
        setSize(350, 200);  
        setDefaultCloseOperation(DISPOSE_ON_CLOSE);  
        setLocationRelativeTo(null);  
  
        JPanel panel = new JPanel();  
        panel.setLayout(null);  
        panel.setBackground(new Color(255, 235, 238));  
        add(panel);  
    }  
}
```



```
JLabel titleLabel = new JLabel("Delete Student");
titleLabel.setFont(new Font("Arial", Font.BOLD, 20));
titleLabel.setForeground(new Color(153, 0, 0));
titleLabel.setBounds(100, 10, 200, 30);
panel.add(titleLabel);
```

```
JLabel idLabel = new JLabel("Enter ID:");
idLabel.setBounds(30, 60, 80, 25);
panel.add(idLabel);
```

```
idField = new JTextField();
idField.setBounds(120, 60, 180, 25);
panel.add(idField);
```

```
deleteButton = new JButton("Delete");
deleteButton.setBounds(110, 100, 100, 30);
deleteButton.setBackground(new Color(204, 0, 0));
deleteButton.setForeground(Color.WHITE);
panel.add(deleteButton);
```

```
deleteButton.addActionListener(e -> {
    try {
        Connection conn = DBConnection.connect();
        String query = "DELETE FROM students
WHERE id=?";
```

```

        PreparedStatement pst =
conn.prepareStatement(query);
        pst.setInt(1, Integer.parseInt(idField.getText()));
        pst.executeUpdate();
        JOptionPane.showMessageDialog(null, "Student
Deleted!");
        conn.close();
    } catch (Exception ex) {
        ex.printStackTrace();
        JOptionPane.showMessageDialog(null, "Error
Deleting Student!");
    }
});

setVisible(true);
}
}

```

### **ViewStudents Class:**

```

package student;
import javax.swing.*.*;
import javax.swing.table.*;
import java.awt.*.*;
import java.sql.*;

public class ViewStudents extends JFrame {
    JTable table;

```

```
ViewStudents() {
    setTitle("View Students");
    setSize(550, 350);
    setDefaultCloseOperation(DISPOSE_ON_CLOSE);
    setLocationRelativeTo(null);

    JPanel panel = new JPanel(new BorderLayout());
    panel.setBackground(new Color(245, 245, 255));
    add(panel);

    JLabel titleLabel = new JLabel("All Students",
SwingConstants.CENTER);
    titleLabel.setFont(new Font("Arial", Font.BOLD, 20));
    titleLabel.setForeground(new Color(51, 0, 102));
    panel.add(titleLabel, BorderLayout.NORTH);

    String[] columns = {"ID", "Name", "Email", "Course"};
    String[][] data = new String[100][4];

    try {
        Connection conn = DBConnection.connect();
        Statement st = conn.createStatement();
        ResultSet rs = st.executeQuery("SELECT * FROM
students");

        int i = 0;
```

```

        while (rs.next()) {
            data[i][0] = String.valueOf(rs.getInt("id"));
            data[i][1] = rs.getString("name");
            data[i][2] = rs.getString("email");
            data[i][3] = rs.getString("course");
            i++;
        }
        conn.close();
    } catch (Exception e) {
        e.printStackTrace();
    }
}

table = new JTable(data, columns);
JTableHeader header = table.getTableHeader();
header.setBackground(new Color(102, 0, 153));
header.setForeground(Color.WHITE);
header.setFont(new Font("Arial", Font.BOLD, 14));

JScrollPane scroll = new JScrollPane(table);
panel.add(scroll, BorderLayout.CENTER);

setVisible(true);
}
}

```

### **MainDashboard Class:**

```
package student;
```

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

public class MainDashboard extends JFrame {
    MainDashboard() {
        setTitle("Student Management System");
        setSize(400, 400);
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setLocationRelativeTo(null);

        JPanel panel = new JPanel();
        panel.setLayout(null);
        panel.setBackground(new Color(224, 242, 241));
        add(panel);

        JLabel title = new JLabel("Student Management");
        title.setBounds(70, 30, 300, 30);
        title.setFont(new Font("Arial", Font.BOLD, 22));
        title.setForeground(new Color(0, 77, 64));
        panel.add(title);

        JButton addBtn = new JButton("Add Student");
        addBtn.setBounds(120, 90, 150, 40);
        addBtn.setBackground(new Color(0, 150, 136));
        addBtn.setForeground(Color.WHITE);
        panel.add(addBtn);
    }
}
```

```
JButton viewBtn = new JButton("View Students");  
viewBtn.setBounds(120, 140, 150, 40);  
viewBtn.setBackground(new Color(0, 137, 123));  
viewBtn.setForeground(Color.WHITE);  
panel.add(viewBtn);
```

```
JButton updateBtn = new JButton("Update Student");  
updateBtn.setBounds(120, 190, 150, 40);  
updateBtn.setBackground(new Color(0, 121, 107));  
updateBtn.setForeground(Color.WHITE);  
panel.add(updateBtn);
```

```
JButton deleteBtn = new JButton("Delete Student");  
deleteBtn.setBounds(120, 240, 150, 40);  
deleteBtn.setBackground(new Color(0, 105, 92));  
deleteBtn.setForeground(Color.WHITE);  
panel.add(deleteBtn);
```

```
addBtn.addActionListener(e -> new AddStudent());  
viewBtn.addActionListener(e -> new ViewStudents());  
updateBtn.addActionListener(e -> new  
UpdateStudent());  
deleteBtn.addActionListener(e -> new  
DeleteStudent());  
  
setVisible(true);
```

```
}
```

```
public static void main(String[] args) {
```

```
    new MainDashboard();
```

```
}
```

```
}
```