1. **Aim: Write a servlet to accept user credentials through an HTML form and display a personalized welcome message if the login is successful.**

Code:

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.sql.*;

public class Login extends JFrame implements ActionListener {
   JTextField tfUsername;
   JPasswordField tfPassword;
   JButton loginBtn;

   Login() {
      try {
         UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());
      } catch (Exception e) {
         e.printStackTrace();
      }

      setTitle("Admin Login");
      getContentPane().setBackground(Color.WHITE);
      setLayout(null);

      JLabel searchLbl = new JLabel("Admin Login");
      searchLbl.setBounds(180, 20, 350, 50);
      searchLbl.setFont(new Font("serif", Font.BOLD, 40));
      add(searchLbl);

      JLabel usernameLbl = new JLabel("Username");
      usernameLbl.setBounds(70, 90, 100, 30);
      usernameLbl.setFont(new Font("serif", Font.PLAIN, 20));
      add(usernameLbl);

      tfUsername = new JTextField();
      tfUsername.setBounds(180, 90, 200, 30);
      add(tfUsername);

      JLabel passwordLbl = new JLabel("Password");
      passwordLbl.setBounds(70, 150, 100, 30);
      passwordLbl.setFont(new Font("serif", Font.PLAIN, 20));
      add(passwordLbl);

      tfPassword = new JPasswordField();
```

```
        tfPassword.setBounds(180, 150, 200, 30);
        add(tfPassword);

        loginBtn = new JButton("LOGIN");
        loginBtn.setBounds(180, 230, 200, 40);
        loginBtn.setBackground(Color.ORANGE);  // Changed to orange for better visibility
        loginBtn.setForeground(Color.BLACK);   // Black text for contrast
        loginBtn.setFont(new Font("Arial", Font.BOLD, 18));
        loginBtn.addActionListener(this);
        add(loginBtn);

        // Load Image
        try {
            ImageIcon i1 = new ImageIcon(getClass().getResource("/myjava/exp8/icon/second.jpg"));
            if (i1.getImageLoadStatus() != MediaTracker.COMPLETE) {
                throw new Exception("Image not found");
            }
            Image i2 = i1.getImage().getScaledInstance(250, 250, Image.SCALE_SMOOTH);
            JLabel image = new JLabel(new ImageIcon(i2));
            image.setBounds(400, 0, 250, 250);
            add(image);
        } catch (Exception e) {
            System.out.println("Image not found!");
        }

        setSize(700, 400);
        setLocationRelativeTo(null); // Centers the window
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setVisible(true);
    }

    public void actionPerformed(ActionEvent ae) {
        String username = tfUsername.getText();
        String password = new String(tfPassword.getPassword());

        try (Connection con = conn.getConnection();
             PreparedStatement pstmt = con.prepareStatement("SELECT * FROM users WHERE username = ?
AND password = ?")) {

            pstmt.setString(1, username);
            pstmt.setString(2, password);

            try (ResultSet rs = pstmt.executeQuery()) {
                if (rs.next()) {
                    JOptionPane.showMessageDialog(this, "Welcome, " + username + "!", "Login Successful",
JOptionPane.INFORMATION_MESSAGE);
                } else {
                    JOptionPane.showMessageDialog(this, "Invalid username or password", "Login Failed",
JOptionPane.ERROR_MESSAGE);
                }
```

```
            }
        } catch (Exception e) {
            JOptionPane.showMessageDialog(this, "Error connecting to database", "Error",
JOptionPane.ERROR_MESSAGE);
            e.printStackTrace();
        }
    }

    public static void main(String[] args) {
        new Login();
    }
}
```

Database Structure:

```
create database Information;
use Information;

CREATE TABLE IF NOT EXISTS users (
    id INT AUTO_INCREMENT PRIMARY KEY,
    username VARCHAR(50) UNIQUE NOT NULL,
    password VARCHAR(255) NOT NULL
);
INSERT INTO users (username, password) VALUES ('admin', 'admin123');
INSERT INTO users (username, password) VALUES ('sachin', 'sachin123');

select * from users;
```

2. **Create a servlet integrated with JDBC to display a list of employees from a database. Include a search form to fetch employee details by ID.**

```
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.*;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/employees")
public class EmployeeServlet extends HttpServlet {
   protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
      response.setContentType("text/html");
      PrintWriter out = response.getWriter();
      String empId = request.getParameter("empId");

      out.println("<html><body>");
      out.println("<h2>Employee Details</h2>");
      out.println("<form action='employees' method='GET'>");
      out.println("Enter Employee ID: <input type='text' name='empId'>");
      out.println("<input type='submit' value='Search'></form>");

      try {
         // Database Connection
```

```
        Class.forName("com.mysql.cj.jdbc.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/Information", "root",
"admin@123");
        Statement stmt = con.createStatement();
        String query = "SELECT * FROM employees";

        if (empId != null && !empId.isEmpty()) {
           query = "SELECT * FROM employees WHERE id = " + empId;
        }

        ResultSet rs = stmt.executeQuery(query);
        out.println("<table border='1'><tr><th>ID</th><th>Name</th><th>Designation</th><th>Salary</
th></tr>");

        while (rs.next()) {
           out.println("<tr><td>" + rs.getInt("id") + "</td><td>" + rs.getString("name") +
                   "</td><td>" + rs.getString("designation") + "</td><td>" + rs.getDouble("salary") + "</td></
tr>");
        }

        out.println("</table>");
        con.close();
      } catch (Exception e) {
        out.println("<p>Error fetching data</p>");
        e.printStackTrace(out);
      }

      out.println("</body></html>");
   }
}
```

3. Aim: Develop a JSP-based student portal. Include a form for entering attendance details and save them to the database using a servlet.

```
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.*;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/AttendanceServlet")
public class AttendanceServlet extends HttpServlet {
   protected void doPost(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
      response.setContentType("text/html");
      PrintWriter out = response.getWriter();
```

```
        String studentId = request.getParameter("studentId");
        String studentName = request.getParameter("studentName");
        String date = request.getParameter("date");
        String status = request.getParameter("status");

        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/Information", "root",
"password");

            String query = "INSERT INTO attendance (student_id, student_name, date, status) VALUES
(?, ?, ?, ?)";
            PreparedStatement pstmt = con.prepareStatement(query);
            pstmt.setString(1, studentId);
            pstmt.setString(2, studentName);
            pstmt.setString(3, date);
            pstmt.setString(4, status);

            int rows = pstmt.executeUpdate();
            if (rows > 0) {
                out.println("<h3>Attendance marked successfully!</h3>");
            } else {
                out.println("<h3>Error marking attendance</h3>");
            }

            con.close();
        } catch (Exception e) {
            out.println("<h3>Error connecting to database</h3>");
            e.printStackTrace(out);
        }
    }
}
```