# Web Applications Using Servlets and JSP for User Input Handling and Database Integration

## Part a: User Login Using Servlet and HTML Form

Objective: To develop a Java Servlet that accepts user credentials through an HTML form and displays a personalized welcome message upon successful login.

### HTML Form (login.html):

<!DOCTYPE html>  
<html>  
<head>  
 <title>User Login</title>  
</head>  
<body>  
 <h2>Login Form</h2>  
 <form action="LoginServlet" method="post">  
 Username: <input type="text" name="username"><br><br>  
 Password: <input type="password" name="password"><br><br>  
 <input type="submit" value="Login">  
 </form>  
</body>  
</html>

### Servlet (LoginServlet.java):

import java.io.\*;  
import javax.servlet.\*;  
import javax.servlet.http.\*;  
  
public class LoginServlet extends HttpServlet {  
 protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {  
 response.setContentType("text/html");  
 PrintWriter out = response.getWriter();  
   
 String username = request.getParameter("username");  
 String password = request.getParameter("password");  
  
 if("admin".equals(username) && "1234".equals(password)) {  
 out.println("<h2>Welcome, " + username + "!</h2>");  
 } else {  
 out.println("<h3>Invalid username or password!</h3>");  
 }  
 }  
}

## Part b: Display Employee Records with JDBC and Servlet Integration

Objective: To create a Java Servlet that integrates with a database using JDBC and displays a list of employees. The servlet should also include a search feature to fetch employee details by ID.

### HTML Form (searchEmployee.html):

<!DOCTYPE html>  
<html>  
<head>  
 <title>Search Employee</title>  
</head>  
<body>  
 <h2>Search Employee by ID</h2>  
 <form action="EmployeeServlet" method="get">  
 Employee ID: <input type="text" name="empId">  
 <input type="submit" value="Search">  
 </form>  
</body>  
</html>

### Servlet (EmployeeServlet.java):

import java.io.\*;  
import java.sql.\*;  
import javax.servlet.\*;  
import javax.servlet.http.\*;  
  
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");  
   
 try {  
 Class.forName("com.mysql.cj.jdbc.Driver");  
 Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/employee\_db", "root", "admin451");  
 Statement stmt = con.createStatement();  
 String query;  
  
 if(empId != null && !empId.isEmpty()) {  
 query = "SELECT \* FROM Employee WHERE EmpID='" + empId + "'";  
 } else {  
 query = "SELECT \* FROM Employee";  
 }  
  
 ResultSet rs = stmt.executeQuery(query);  
 out.println("<h2>Employee Records</h2><table border='1'><tr><th>ID</th><th>Name</th><th>Salary</th></tr>");  
 while(rs.next()) {  
 out.println("<tr><td>" + rs.getString("EmpID") + "</td><td>" + rs.getString("Name") + "</td><td>" + rs.getDouble("Salary") + "</td></tr>");  
 }  
 out.println("</table>");  
 con.close();  
 } catch(Exception e) {  
 out.println("Error: " + e.getMessage());  
 }  
 }  
}

## Part c: Student Attendance Portal Using JSP and Servlet

Objective: To develop a simple student attendance portal using JSP for the frontend and a Servlet for handling form submissions and saving attendance data to a database.

### JSP Page (attendance.jsp):

<%@ page language="java" contentType="text/html; charset=ISO-8859-1" pageEncoding="ISO-8859-1"%>  
<!DOCTYPE html>  
<html>  
<head>  
 <title>Student Attendance</title>  
</head>  
<body>  
 <h2>Attendance Form</h2>  
 <form action="AttendanceServlet" method="post">  
 Student ID: <input type="text" name="studentId"><br><br>  
 Date: <input type="date" name="date"><br><br>  
 Status:   
 <select name="status">  
 <option value="Present">Present</option>  
 <option value="Absent">Absent</option>  
 </select><br><br>  
 <input type="submit" value="Submit Attendance">  
 </form>  
</body>  
</html>

### Servlet (AttendanceServlet.java):

import java.io.\*;  
import java.sql.\*;  
import javax.servlet.\*;  
import javax.servlet.http.\*;  
  
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 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/attendance\_db", "root", "admin451");  
 PreparedStatement ps = con.prepareStatement("INSERT INTO Attendance(StudentID, Date, Status) VALUES (?, ?, ?)");  
 ps.setString(1, studentId);  
 ps.setString(2, date);  
 ps.setString(3, status);  
 int result = ps.executeUpdate();  
  
 if(result > 0) {  
 out.println("<h3>Attendance submitted successfully!</h3>");  
 } else {  
 out.println("<h3>Error saving attendance.</h3>");  
 }  
 con.close();  
 } catch(Exception e) {  
 out.println("Error: " + e.getMessage());  
 }  
 }  
}