

Assignment 8

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Easy

Objective:

Create a simple login form that sends user credentials to a servlet. If the username and password match hardcoded values, display a personalized welcome message.

Features:

- HTML form for username & password
- Servlet validation
- Personalized greeting on success

Tech Stack:

- HTML
- Java Servlet

Code

index.html – HTML Login Form

```
<!DOCTYPE html>
<html>
<head>
  <title>Login Form</title>
</head>
<body>
  <h2>Login</h2>
  <form action="LoginServlet" method="post">
    <label for="username">Username:</label>
    <input type="text" name="username" required><br><br>

    <label for="password">Password:</label>
    <input type="password" name="password" required><br><br>

    <input type="submit" value="Login">
  </form>
</body>
</html>
```

LoginServlet.java – Java Servlet for Validation

```
import java.io.IOException;
import java.io.PrintWriter;
```

```

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/LoginServlet")
public class LoginServlet extends HttpServlet {
    private static final String USERNAME = "admin";
    private static final String PASSWORD = "password123";

    protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {

        String username = request.getParameter("username");
        String password = request.getParameter("password");

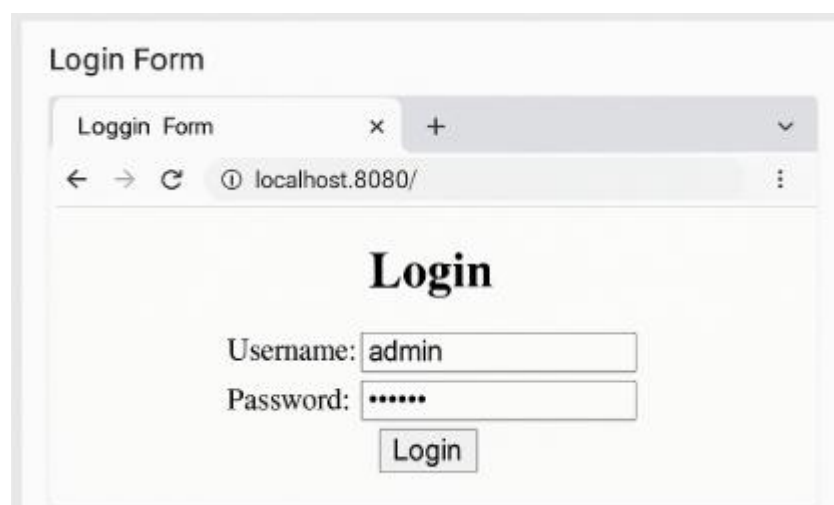
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        if (USERNAME.equals(username) && PASSWORD.equals(password)) {
            out.println("<h2>Welcome, " + username + "!</h2>");
        } else {
            out.println("<h2>Login Failed. Invalid username or password.</h2>");
        }

        out.close();
    }
}

```

Output



Medium

Objective:

Integrate JDBC to fetch employee data from a database and display it. Add a search option to get employee details by ID.

Features:

- JDBC connection setup
- List all employees
- Search employee by ID

Tech Stack:

- Java Servlet
- JDBC
- MySQL (or any RDBMS)
- HTML & CSS

Code

Database Setup (MySQL)

```
CREATE DATABASE company;
```

```
USE company;
```

```
CREATE TABLE employees (
  id INT PRIMARY KEY,
  name VARCHAR(100),
  department VARCHAR(100),
  email VARCHAR(100)
);
```

```
INSERT INTO employees (id, name, department, email) VALUES
(1, 'Alice Johnson', 'Engineering', 'alice@example.com'),
(2, 'Bob Smith', 'HR', 'bob@example.com'),
(3, 'Carol White', 'Finance', 'carol@example.com');
```

HTML – index.html

```
<!DOCTYPE html>
<html>
<head>
  <title>Employee Directory</title>
  <style>
    body { font-family: Arial; }
    table { border-collapse: collapse; width: 60%; margin: 20px 0; }
    th, td { border: 1px solid #ddd; padding: 8px; }
    th { background-color: #f2f2f2; }
    form { margin-bottom: 20px; }
  </style>
</head>
<body>
  <h2>Search Employee by ID</h2>
  <form action="EmployeeServlet" method="get">
    <input type="text" name="searchId" placeholder="Enter Employee ID">
    <input type="submit" value="Search">
  </form>
```

```

<h2>All Employees</h2>
<form action="EmployeeServlet" method="get">
  <input type="hidden" name="listAll" value="true">
  <input type="submit" value="List All Employees">
</form>
</body>
</html>

```

Java Servlet – EmployeeServlet.java

```

import java.io.*;
import java.sql.*;
import javax.servlet.*;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/EmployeeServlet")
public class EmployeeServlet extends HttpServlet {

    private static final String JDBC_URL = "jdbc:mysql://localhost:3306/company";
    private static final String JDBC_USER = "root";
    private static final String JDBC_PASSWORD = "your_password"; // replace with
your actual password

    protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {

        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        String searchId = request.getParameter("searchId");
        boolean listAll = "true".equals(request.getParameter("listAll"));

        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection conn = DriverManager.getConnection(JDBC_URL, JDBC_USER,
JDBC_PASSWORD);

            String query;
            PreparedStatement stmt;

            if (searchId != null && !searchId.trim().isEmpty()) {
                query = "SELECT * FROM employees WHERE id = ?";
                stmt = conn.prepareStatement(query);
                stmt.setInt(1, Integer.parseInt(searchId));
            } else if (listAll) {
                query = "SELECT * FROM employees";
                stmt = conn.prepareStatement(query);
            } else {
                out.println("<p>No input provided.</p>");
                return;
            }

            ResultSet rs = stmt.executeQuery();

            out.println("<table>");

```

```

out.println("<tr><th>ID</th><th>Name</th><th>Department</th><th>Email</th></tr>");

        boolean found = false;
        while (rs.next()) {
            found = true;
            out.println("<tr><td>" + rs.getInt("id") + "</td><td>" +
                rs.getString("name") + "</td><td>" +
                rs.getString("department") + "</td><td>" +
                rs.getString("email") + "</td></tr>");
        }

        if (!found) {
            out.println("<tr><td colspan='4'>No employee found.</td></tr>");
        }

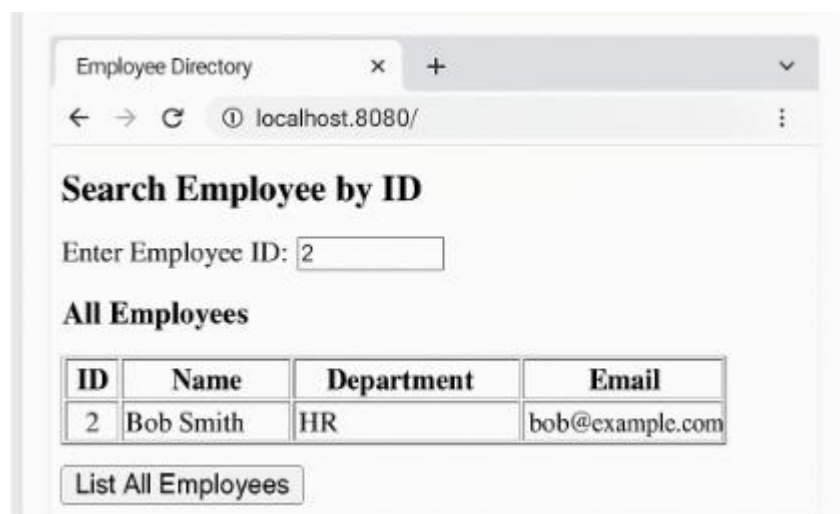
        out.println("</table>");
        rs.close();
        stmt.close();
        conn.close();

    } catch (Exception e) {
        out.println("<p>Error: " + e.getMessage() + "</p>");
    }

    out.close();
}
}

```

Output



Hard

Objective:

Develop a mini-portal using JSP to enter student attendance. Save the attendance to the database using a Servlet.

Features:

- JSP form for attendance entry
- Servlet for saving data to DB
- Database schema for students & attendance

Tech Stack:

- JSP
- Java Servlet
- JDBC
- MySQL
- HTML & CSS

Code

Database Schema (MySQL)

```
CREATE DATABASE school;

USE school;

CREATE TABLE students (
    id INT PRIMARY KEY,
    name VARCHAR(100)
);

CREATE TABLE attendance (
    id INT AUTO_INCREMENT PRIMARY KEY,
    student_id INT,
    date DATE,
    status VARCHAR(10),
    FOREIGN KEY (student_id) REFERENCES students(id)
);

-- Sample students
INSERT INTO students (id, name) VALUES
(1, 'Alice'),
(2, 'Bob'),
(3, 'Charlie');
```

JSP Page – attendance.jsp

```
jsp
CopyEdit
<% @ page import="java.sql.*" %>
<!DOCTYPE html>
<html>
<head>
    <title>Student Attendance</title>
    <style>
        body { font-family: Arial; }
```

```

        table { width: 60%; border-collapse: collapse; margin: 20px auto; }
        th, td { border: 1px solid #ddd; padding: 8px; text-align: center; }
        th { background-color: #f2f2f2; }
        form { text-align: center; }
    </style>
</head>
<body>
    <h2 style="text-align:center;">Mark Attendance</h2>

    <form action="AttendanceServlet" method="post">
        <table>
            <tr>
                <th>Student ID</th>
                <th>Name</th>
                <th>Status</th>
            </tr>
            <%
                try {
                    Class.forName("com.mysql.cj.jdbc.Driver");
                    Connection conn =
DriverManager.getConnection("jdbc:mysql://localhost:3306/school", "root",
"your_password");
                    Statement stmt = conn.createStatement();
                    ResultSet rs = stmt.executeQuery("SELECT * FROM students");

                    while (rs.next()) {
                        int id = rs.getInt("id");
                        String name = rs.getString("name");
            %>
            <tr>
                <td><%= id %></td>
                <td><%= name %></td>
                <td>
                    <select name="status_<%= id %>">
                        <option value="Present">Present</option>
                        <option value="Absent">Absent</option>
                    </select>
                    <input type="hidden" name="studentId" value="<%= id %>">
                </td>
            </tr>
            <%
                }
                rs.close();
                stmt.close();
                conn.close();
            } catch (Exception e) {
                out.println("<tr><td colspan='3'>Error loading students: " +
e.getMessage() + "</td></tr>");
            }
            %>
        </table>
        <br>
        <input type="submit" value="Submit Attendance">
    </form>

```

```
</body>
</html>
```

Servlet – AttendanceServlet.java

```
import java.io.IOException;
import java.sql.*;
import java.util.*;
import javax.servlet.*;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/AttendanceServlet")
public class AttendanceServlet extends HttpServlet {

    protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {

        String url = "jdbc:mysql://localhost:3306/school";
        String user = "root";
        String pass = "your_password";

        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection conn = DriverManager.getConnection(url, user, pass);

            String[] studentIds = request.getParameterValues("studentId");

            if (studentIds != null) {
                PreparedStatement stmt = conn.prepareStatement("INSERT INTO
attendance (student_id, date, status) VALUES (?, CURDATE(), ?)");

                for (String idStr : studentIds) {
                    int id = Integer.parseInt(idStr);
                    String status = request.getParameter("status_" + id);

                    stmt.setInt(1, id);
                    stmt.setString(2, status);
                    stmt.addBatch();
                }

                stmt.executeBatch();
                stmt.close();
            }

            conn.close();

            response.sendRedirect("attendance.jsp");
        } catch (Exception e) {
            throw new ServletException("DB Error: " + e.getMessage());
        }
    }
}
```


Output

Student Attendance

Mark Attendance

Student ID	Name	Status
1	Alice	Present <input type="button" value="v"/>
