

# Project Based Learning in Java

## EXPERIMENT - 8

*Submitted by,*

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## Easy Problem

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

### 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");
        String username = request.getParameter("username");
        String password = request.getParameter("password");
        if ("admin".equals(username) && "password123".equals(password)) {
            // Display a personalized welcome message
            PrintWriter out = response.getWriter();
            out.println("<!DOCTYPE html>");
            out.println("<html><head><title>Welcome</title></head><body>");
            out.println("<h1>Welcome, " + username + "!</h1>");
            out.println("<p>Login successful. Enjoy your session!</p>");
            out.println("</body></html>");
        } else {
            // Invalid credentials
            out.println("<!DOCTYPE html>");
            out.println("<html><head><title>Login Failed</title></head><body>");
            out.println("<h1>Invalid username or password!</h1>");
            out.println("<p>Please <a href='index.html'>try again</a>.</p>");
            out.println("</body></html>");
        }
    }
}
```

### index.html

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

web.xml

```
<web-app>
  <servlet>
    <servlet-name>LoginServlet</servlet-name>
    <servlet-class>LoginServlet</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>LoginServlet</servlet-name>
    <url-pattern>/login</url-pattern>
  </servlet-mapping>
</web-app>
```

OUTPUT:

**Login**

Username:

Password:

## Medium Problem

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.

### EmployeeServlet.java

```
import java.io.IOException;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import java.io.PrintWriter;
import java.sql.Connection;

@WebServlet("/EmployeeServlet")
public class EmployeeServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        out.println("<html><body>");
        out.println("<h2>Employee List</h2>");

        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection conn =
DriverManager.getConnection("jdbc:mysql://localhost:3306/PBLJ", "root", "1234");
            PreparedStatement stmt = conn.prepareStatement("SELECT * FROM
employees");
            ResultSet rs = stmt.executeQuery();

            out.println("<table
border='1'><tr><th>ID</th><th>Name</th><th>Position</th></tr>");
            while (rs.next()) {
                out.println("<tr><td>" + rs.getInt("id") + "</td><td>" +
rs.getString("name") + "</td><td>" + rs.getString("position") + "</td></tr>");
            }
            out.println("</table>");

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

            conn.close();
```

```

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

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

    protected void doPost(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>");

        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection conn =
DriverManager.getConnection("jdbc:mysql://localhost:3306/PBLJ", "root", "1234");
            PreparedStatement stmt = conn.prepareStatement("SELECT * FROM
employees WHERE id = ?");
            stmt.setInt(1, Integer.parseInt(empId));
            ResultSet rs = stmt.executeQuery();

            if (rs.next()) {
                out.println("<p>ID: " + rs.getInt("id") + "</p>");
                out.println("<p>Name: " + rs.getString("name") + "</p>");
                out.println("<p>Position: " + rs.getString("position") +
"</p>");
            } else {
                out.println("<p>No employee found with ID: " + empId + "</p>");
            }

            conn.close();
        } catch (Exception e) {
            out.println("Error: " + e.getMessage());
        }

        out.println("<a href='EmployeeServlet'>Back</a>");
        out.println("</body></html>");
    }
}

```

### web.xml

```

<web-app
    xmlns="http://java.sun.com/xml/ns/javaee" version="3.0">
    <servlet>
        <servlet-name>EmployeeServlet</servlet-name>
        <servlet-class>EmployeeServlet</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>EmployeeServlet</servlet-name>
        <url-pattern>/EmployeeServlet</url-pattern>
    </servlet-mapping>
</web-app>

```

OUTPUT:

```
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra      |
+-----+-----+-----+-----+-----+-----+
| id     | int       | NO   | PRI | NULL    | auto_increment
| name   | varchar(100) | NO   |     | NULL    |
| position | varchar(100) | NO   |     | NULL    |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

+-----+-----+-----+
| id | name           | position           |
+-----+-----+-----+
| 1  | Arjun Verma   | Software Engineer |
| 2  | Priya Sharma  | Data Analyst      |
| 3  | Raj Kapoor    | Project Manager   |
| 4  | Simran Kaur   | Quality Assurance Engineer
| 5  | Anil Mehra    | DevOps Engineer   |
+-----+-----+-----+
5 rows in set (0.00 sec)
```

Employee List

ID	Name	Position
1	Arjun Verma	Software Engineer
2	Priya Sharma	Data Analyst
3	Raj Kapoor	Project Manager
4	Simran Kaur	Quality Assurance Engineer
5	Anil Mehra	DevOps Engineer

Search Employee

Enter Employee ID:

Search

Employee Details

ID: 2

Name: Priya Sharma

Position: Data Analyst

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## Hard Problem

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

### AttendanceServlet.java

```
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
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 {
    private static final long serialVersionUID = 1L;

    protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

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

        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection conn =
DriverManager.getConnection("jdbc:mysql://localhost:3306/PBLJ", "root", "1234");

            String query = "INSERT INTO attendance (student_name, date, status)
VALUES (?, ?, ?)";
            PreparedStatement stmt = conn.prepareStatement(query);
            stmt.setString(1, studentName);
            stmt.setString(2, date);
            stmt.setString(3, status);
            stmt.executeUpdate();

            out.println("<html><body>");
            out.println("<h1>Attendance Details Saved Successfully</h1>");
            out.println("<a href='index.jsp'>Back to Home</a>");
            out.println("</body></html>");

            conn.close();
        } catch (Exception e) {
            out.println("<html><body>");
            out.println("<h1>Error: " + e.getMessage() + "</h1>");
            out.println("<a href='index.jsp'>Back to Home</a>");
            out.println("</body></html>");
        }
    }
}
```

```

    }
}
}

```

### index.jsp

```

<%@ page language="java" contentType="text/html; charset=UTF-8"
pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <title>Student Portal</title>
</head>
<body>
    <h1>Welcome to Student Portal</h1>
    <h2>Enter Attendance Details</h2>
    <form action="AttendanceServlet" method="post">
        Student Name: <input type="text" name="student_name"><br>
        Date: <input type="date" name="date"><br>
        Status:
        <select name="status">
            <option value="Present">Present</option>
            <option value="Absent">Absent</option>
        </select><br>
        <input type="submit" value="Submit">
    </form>
</body>
</html>

```

### web.xml

```

<web-app
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns="http://xmlns.jcp.org/xml/ns/javaee"
    xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd" id="WebApp_ID"
    version="4.0">
    <display-name>EXP_313</display-name>
    <welcome-file-list>
        <welcome-file>index.html</welcome-file>
        <welcome-file>index.jsp</welcome-file>
        <welcome-file>index.htm</welcome-file>
        <welcome-file>default.html</welcome-file>
        <welcome-file>default.jsp</welcome-file>
        <welcome-file>default.htm</welcome-file>
    </welcome-file-list>
</web-app>

```

## OUTPUT:

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
student_name	varchar(100)	YES		NULL	
date	date	YES		NULL	
status	varchar(20)	YES		NULL	


4 rows in set (0.01 sec)



# Welcome to Student Portal

## Enter Attendance Details

Student Name:

Date:  

Status:

# Welcome to Student Portal

## Enter Attendance Details

Student Name:

Date:  

Status:

# Attendance Details Saved Successfully

[Back to Home](#)

id	student_name	date	status
1	Ankush	2025-04-02	Present
2	Disha	2025-04-02	Absent

2 rows in set (0.00 sec)