



Experiment 8

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A}

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

login.html — HTML Form

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

LoginServlet.java — The Servlet

```
package com.example;
import jakarta.servlet.ServletException;
import jakarta.servlet.annotation.WebServlet;
import jakarta.servlet.http.*;

import java.io.IOException;

@WebServlet("/login")
public class LoginServlet extends HttpServlet {

    // Hardcoded valid credentials
    private static final String VALID_USERNAME = "admin";
```

```
private static final String VALID_PASSWORD = "password123";

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

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

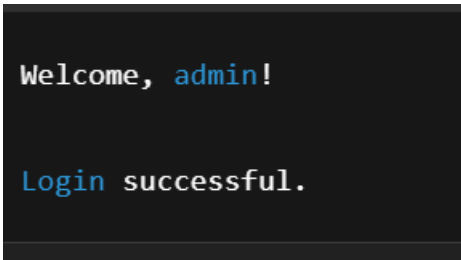
    if (VALID_USERNAME.equals(username) && VALID_PASSWORD.equals(password)) {
        request.setAttribute("username", username);
        request.getRequestDispatcher("welcome.jsp").forward(request, response);
    } else {
        request.setAttribute("errorMessage", "Invalid username or password.");
        request.getRequestDispatcher("error.jsp").forward(request, response);
    }
}
```

welcome.jsp — Welcome Message

```
<%@ page contentType="text/html; charset=UTF-8" %>
<html>
<head><title>Welcome</title></head>
<body>
    <h2>Welcome, <%= request.getAttribute("username") %>!</h2>
    <p>Login successful.</p>
</body>
</html>
```

error.jsp — Invalid Login

```
<%@ page contentType="text/html; charset=UTF-8" %>
<html>
<head><title>Login Failed</title></head>
<body>
    <h3 style="color: red;"><%= request.getAttribute("errorMessage") %></h3>
    <a href="login.html">Try Again</a>
</body>
</html>
```

4. Output :

```
Welcome, admin!

Login successful.
```



{B}

1. **Aim:** 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.

2. **Objective:** Use JDBC for displaying details.

4. Code:

Sample Employee Table (employees)

```
CREATE TABLE employees (  
  id INT PRIMARY KEY,  
  name VARCHAR(100),  
  department VARCHAR(100),  
  salary DECIMAL(10,2)  
);  
INSERT INTO employees (id, name, department, salary) VALUES  
(1, 'Alice Johnson', 'HR', 55000.00),  
(2, 'Bob Smith', 'Engineering', 72000.00),  
(3, 'Charlie Brown', 'Marketing', 48000.00);
```

EmployeeServlet.java

```
package com.example;  
import jakarta.servlet.ServletException;  
import jakarta.servlet.annotation.WebServlet;  
import jakarta.servlet.http.*;  
import java.io.IOException;  
import java.io.PrintWriter;  
import java.sql.*;  
  
@WebServlet("/employees")  
public class EmployeeServlet extends HttpServlet {  
  private static final String JDBC_URL = "jdbc:mysql://localhost:3306/your_database";  
  private static final String DB_USER = "your_user";  
  private static final String DB_PASSWORD = "your_password";  
  protected void doGet(HttpServletRequest request, HttpServletResponse response)  
    throws ServletException, IOException {  
    String searchId = request.getParameter("searchId");  
    response.setContentType("text/html");  
    PrintWriter out = response.getWriter();  
    out.println("<html><head><title>Employee List</title></head><body>");  
    out.println("<h2>Employee List</h2>");  
    try (Connection conn = DriverManager.getConnection(JDBC_URL, DB_USER, DB_PASSWORD)) {  
      Statement stmt = conn.createStatement();  
      ResultSet rs = stmt.executeQuery("SELECT * FROM employees");  
      out.println("<table border='1'><tr><th>ID</th><th>Name</th><th>Department</th><th>Salary</th></tr>");  
      while (rs.next()) {  
        out.printf("<tr><td>%d</td><td>%s</td><td>%s</td><td>%.2f</td></tr>",  
          rs.getInt("id"),  
          rs.getString("name"),
```

```

        rs.getString("department"),
        rs.getDouble("salary"));
    }
    out.println("<h3>Search Employee by ID</h3>");
    out.println("<form method='get'>");
    out.println("Employee ID: <input type='text' name='searchId'>");
    out.println("<input type='submit' value='Search'>");
    out.println("</form>");
    if (searchId != null && !searchId.trim().isEmpty()) {
        PreparedStatement ps = conn.prepareStatement("SELECT * FROM employees WHERE id = ?");
        ps.setInt(1, Integer.parseInt(searchId));
        ResultSet result = ps.executeQuery();
        if (result.next()) {
            out.println("<h3>Search Result:</h3>");
            out.printf("<p>ID: %d<br>Name: %s<br>Department: %s<br>Salary: %.2f</p>",
                result.getInt("id"),
                result.getString("name"),
                result.getString("department"),
                result.getDouble("salary"));
        } else {
            out.println("<p style='color:red;'>No employee found with ID " + searchId + "</p>");
        }
    }
} catch (Exception e) {
    out.println("<p style='color:red;'>Database error: " + e.getMessage() + "</p>");
}
out.println("</body></html>");
}
}
index.jsp (Redirect to Servlet)
<% response.sendRedirect("employees"); %>

```

5. Output:

| ID | Name | Department | Salary |
|----|---------------|-------------|---------|
| 1 | Alice Johnson | HR | 55000.0 |
| 2 | Bob Smith | Engineering | 72000.0 |
| 3 | Charlie Brown | Marketing | 48000.0 |

```

Search Employee by ID

Employee ID: [ 2 ]
[ Search ]

```

```

Search Result:
ID: 2
Name: Bob Smith
Department: Engineering
Salary: 72000.00

```



C}

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

2. **Code :**

Attendance.jsp – Attendance Entry Form

```
<%@ page contentType="text/html; charset=UTF-8" %>
<html>
<head><title>Student Attendance</title></head>
<body>
<h2>Enter Attendance</h2>
<form action="submitAttendance" method="post">
  Name: <input type="text" name="studentName" required><br><br>
  Date: <input type="date" name="date" required><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>
```

AttendanceServlet.java – Save Data to DB

```
package com.example;

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

import java.io.IOException;
import java.sql.*;

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

  private static final String DB_URL = "jdbc:mysql://localhost:3306/your_database";
  private static final String DB_USER = "your_user";
  private static final String DB_PASSWORD = "your_password";
```



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

    String studentName = request.getParameter("studentName");
    String date = request.getParameter("date");
    String status = request.getParameter("status");
    try (Connection conn = DriverManager.getConnection(DB_URL, DB_USER, DB_PASSWORD)) {
        String sql = "INSERT INTO attendance (student_name, date, status) VALUES (?, ?, ?)";
        PreparedStatement ps = conn.prepareStatement(sql);
        ps.setString(1, studentName);
        ps.setDate(2, Date.valueOf(date));
        ps.setString(3, status);

        int rows = ps.executeUpdate();

        if (rows > 0) {
            request.setAttribute("name", studentName);
            request.getRequestDispatcher("success.jsp").forward(request, response);
        } else {
            throw new SQLException("Failed to insert data.");
        }
    } catch (Exception e) {
        throw new ServletException("Database insert error", e);
    }
}
```

success.jsp – Confirmation Page

```
<%@ page contentType="text/html; charset=UTF-8" %>
<html>
<head><title>Success</title></head>
<body>
    <h2>Attendance Recorded Successfully!</h2>
    <p>Thank you, <%= request.getAttribute("name") %>.</p>
    <a href="attendance.jsp">Back to Form</a>
</body>
</html>
```



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3. Screenshot of Outputs:

Enter Attendance

Name: [Alice Johnson]

Date: [2025-04-15]

Status: [Present ▼]

[Submit Attendance]

Attendance Recorded Successfully!

Thank you, Alice Johnson.

[Back to Form]

4. Learning Outcomes:

- Understanding of Object-Oriented Programming (OOP)
- Real-world Application of Software Design Principles.
- Servlet Development.
- Database Connectivity with JDBC.