#### **Experiment -8**

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Subject Name: Project Based Learning Subject Code: 22CSH-359

in Java with Lab

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

**8.1.2 Objective:** To develop a servlet that authenticates user credentials submitted via an HTML form and displays a personalized welcome message upon successful login.

```
8.1.3 Code:
LoginServlet.java
package mypackage;
import javax.servlet.*;
import javax.servlet.http.*;
import java.io.*;
public class LoginServlet extends HttpServlet {
  protected void doPost(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
    // Get the username and password from the request
     String username = request.getParameter("username");
     String password = request.getParameter("password");
    // Simple validation (you can improve this)
    if ("admin".equals(username) && "password123".equals(password)) {
       // If login is successful, send a welcome message
       response.setContentType("text/html");
       PrintWriter out = response.getWriter();
       out.println("<html><body>");
       out.println("<h2>Welcome, " + username + "!</h2>");
       out.println("</body></html>");
     } else {
       // If login fails, send an error message
       response.setContentType("text/html");
       PrintWriter out = response.getWriter();
```

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```
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        out.println("<html><body>");
        out.println("<h2>Invalid credentials, please try again.</h2>");
        out.println("</body></html>");
   }
 Login.html
 <!DOCTYPE html>
 <html lang="en">
 <head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Login</title>
 </head>
 <body>
   <h2>Login Form</h2>
   <form action="login" method="POST">
     <label for="username">Username:</label>
     <input type="text" id="username" name="username" required><br><br>
     <label for="password">Password:</label>
     <input type="password" id="password" name="password" required><br><br>
     <input type="submit" value="Login">
   </form>
 </body>
 </html>
 Web.xml
 <?xml version="1.0" encoding="UTF-8"?>
 <web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee"</pre>
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
        http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd"
      version="4.0">
   <servlet>
     <servlet-name>LoginServlet</servlet-name>
     <servlet-class>mypackage.LoginServlet</servlet-class>
   </servlet>
```

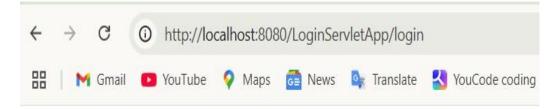


## **8.1.4 Output:**

# **Login Form**

Username: admin

Password: ----
Login



Welcome, admin!

- **8.2.1 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.
- **8.2.2 Objective**: To create a servlet using JDBC that displays a list of employees from a database and provides a search functionality to retrieve employee details by their ID.

```
by their ID.
8.2.3 Code:
EmployeeServlet.java
package com.example;
import java.io.*;
import java.sql.*;
import javax.servlet.*;
import javax.servlet.http.*;
public class EmployeeServlet extends HttpServlet {
  private static final long serialVersionUID = 1L;
  // Database connection parameters
  private final String jdbcURL = "jdbc:mysql://localhost:3306/EmployeesDB";
  private final String jdbcUsername = "root";
  private final String jdbcPassword = "password"; // use your password
  protected void doGet(HttpServletRequest request, HttpServletResponse response)
       throws ServletException, IOException {
    String searchId = request.getParameter("id");
    response.setContentType("text/html");
    PrintWriter out = response.getWriter();
    try {
       Class.forName("com.mysql.cj.jdbc.Driver");
       Connection conn = DriverManager.getConnection(jdbcURL, jdbcUsername,
jdbcPassword);
       Statement stmt = conn.createStatement();
       ResultSet rs:
       out.println("<html><body>");
       out.println("<h2>Employee Directory</h2>");
       out.println("<form method='get'>");
       out.println("Search by ID: <input type='text' name='id' />");
```

```
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       out.println("<input type='submit' value='Search'/>");
       out.println("</form><br>");
       if (searchId != null && !searchId.trim().isEmpty()) {
         rs = stmt.executeQuery("SELECT * FROM employees WHERE id=" + searchId);
       } else {
         rs = stmt.executeQuery("SELECT * FROM employees");
       out.println("<table
 border='1'>ID');
       while (rs.next()) {
         out.println("" + rs.getInt("id") + "" +
                rs.getString("name") + "" +
                rs.getString("department") + "" +
                rs.getString("email") + "");
       out.println("");
       out.println("</body></html>");
       rs.close();
       stmt.close();
       conn.close();
     } catch (Exception e) {
       out.println("Error: " + e.getMessage() + "");
   }
 Web.xml
 <?xml version="1.0" encoding="UTF-8"?>
 <web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee"</pre>
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
     http://xmlns.jcp.org/xml/ns/javaee/web-app_3_1.xsd"
      version="3.1">
   <display-name>EmployeeServletApp</display-name>
   <servlet>
     <servlet-name>EmployeeServlet</servlet-name>
     <servlet-class>com.example.EmployeeServlet</servlet-class>
   </servlet>
```

</web-app>

## **8.2.4 Output:**

# **Employee Directory**

Search by ID: 1 Search

ID	Name	Department	Email
1	John Doe	HR	john@example.com
2	Jane Smith	IT	alice@example.com
3	Alice Brown	Finance	bob@example.com

# **Employee Directory**

Search by ID: Search

ID	Name	Department	Email
1	John Doe	HR	john@example.com



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

**8.3.2 Objective:** To develop a JSP-based student portal where users can enter attendance details via a form, and the data is saved to the database through a servlet for storage and retrieval.

#### 8.3.3 Code:

# AttendanceServlet.java

package com.studentportal;

```
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 {

```
// Get the form data
String studentName = request.getParameter("studentName");
String date = request.getParameter("date");
String status = request.getParameter("status");

// Database connection setup
String jdbcURL = "jdbc:mysql://localhost:3306/StudentPortalDB
String jdbcUsername = "root";
String jdbcPassword = "paassword"; // Replace with your actual password

// SQL query to insert attendance
String insertSQL = "INSERT INTO attendance (student_name, date, status) VALUES
(?, ?, ?)";
```

```
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      Connection connection = null;
      PreparedStatement preparedStatement = null;
      response.setContentType("text/html");
      PrintWriter out = response.getWriter();
      try {
            Load JDBC driver
        Class.forName("com.mysql.cj.jdbc.Driver");
        // Establish connection
        connection = DriverManager.getConnection(jdbcURL, jdbcUsername,
 jdbcPassword);
        preparedStatement = connection.prepareStatement(insertSQL);
        // Set query parameters
        preparedStatement.setString(1, studentName);
        preparedStatement.setString(2, date);
        preparedStatement.setString(3, status);
        int result = preparedStatement.executeUpdate();
        if (result > 0) {
           out.println("<h3>Attendance successfully recorded!</h3>");
         } else {
           out.println("<h3>Failed to record attendance.</h3>");
      } catch (Exception e) {
        e.printStackTrace();
        out.println("<h3>Error: " + e.getMessage() + "</h3>");
      } finally {
        try {
           if (preparedStatement != null) preparedStatement.close();
           if (connection != null) connection.close();
         } catch (Exception ex) {
           ex.printStackTrace();
      }
      out.close(); } }
```



```
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 Attendance.jsp
 <%@ page language="java" contentType="text/html; charset=ISO-8859-1"
 pageEncoding="ISO-8859-1"%>
 <!DOCTYPE html>
 <html lang="en">
 <head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Student Attendance Portal</title>
 </head>
 <body>
   <h2>Enter Attendance</h2>
   <form action="AttendanceServlet" method="POST">
     <label for="studentName">Student Name:</label><br/>br>
     <input type="text" id="studentName" name="studentName" required><br><br>
     <label for="date">Date:</label><br>
     <input type="date" id="date" name="date" required><br><br>
     <label for="status">Attendance Status:</label><br>
     <select id="status" name="status" required>
        <option value="Present">Present</option>
        <option value="Absent">Absent
     </select><br><br>
     <input type="submit" value="Submit">
   </form>
 </body>
 </html>
 Web.xml
 <?xml version="1.0" encoding="UTF-8"?>
 <web-app xmlns="http://java.sun.com/xml/ns/javaee"</pre>
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
                  http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd"
      version="3.0">
   <!-- Welcome file list: the default page to display when you visit the site -->
   <welcome-file-list>
```

<welcome-file>attendance.jsp</welcome-file>

</welcome-file-list>

## **8.3.4 Output:**

## **Enter Attendance**

Student Name:

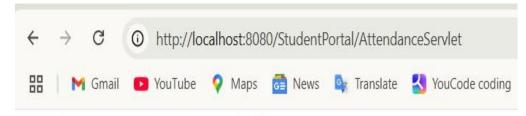
John Doe

Date:

14-04-2025

Attendance Status:

Present 
Submit



Attendance successfully recorded!



## **Learning Outcomes:**

- 1. Understand how to create a Java Servlet that interacts with a database using JDBC to perform CRUD operations.
- 2. Gain experience in using JSP to build dynamic web pages and handle form submissions for user interaction.
- 3. Learn how to implement user authentication and session management to personalize web applications.
- 4. Develop skills to design and implement a search functionality to fetch data from a database based on specific criteria.
- 5. Acquire knowledge of integrating web forms with backend servlets for storing and retrieving data in a relational database.