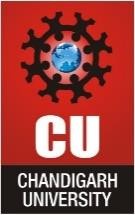
DEPARTMENT OF



COMPUTER SCIENCE & ENGINEERING

**Student Name:** Garv **Branch:** BE-CSE **Semester:** 6th

**Experiment 3.1**

**UID:** 22BCS11750

**Section/Group:** 22BCS\_IOT-638/B

**Date of Performance:** 08/04/2025

**Subject Name:** Project based Learning in JAVA **Subject Code:** 22CSH-359

# Easy

1. **Aim:**

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

1. **Objective:** Create a servlet that accepts login credentials from an HTML form and displays a personalized welcome message upon successful login.

# Implementation/Code:

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>

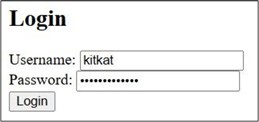
<servlet-name>LoginServlet</servlet-name>

<url-pattern>/login</url-pattern>

</servlet-mapping>

</web-app>

# Output:

****

1. **Learning Outcome:**
   * Learned how to create a basic servlet to handle form data using the POST method.
   * Understood how to retrieve request parameters and generate dynamic HTML responses.
   * Gained knowledge of basic servlet configuration using web.xml.
   * Practiced validating user credentials and displaying personalized messages.

# Medium Problem

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:** To develop a Java servlet that connects to a MySQL database using JDBC, displays a list of employees, and provides a search functionality to retrieve specific employee details by their ID.

# Implementation/Code:

import java.io.IOException; import java.sql.DriverManager; import java.sql.PreparedStatement; import java.sql.ResultSet;

import java.sql.SQLException;

import javax.servlet.ServletException;

EmployeeServlet.java

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>

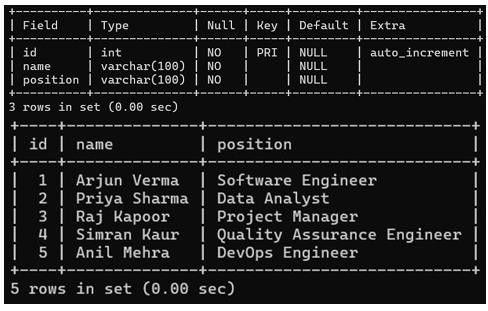
<servlet-name>EmployeeServlet</servlet-name>

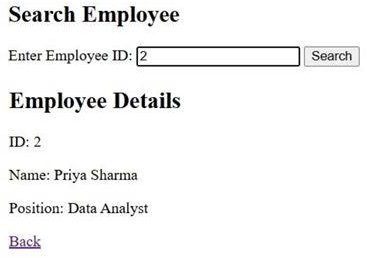
<url-pattern>/EmployeeServlet</url-pattern>

</servlet-mapping>

</web-app>

# Output:





1. **Learning Outcome:**
   * Gained hands-on experience with JDBC integration in a servlet.
   * Understood how to fetch and display data dynamically from a database.
   * Learned to implement search functionality in a web application.

# Hard Problem

1. **Aim:** Problem Develop a JSP-based student portal. Include a form for entering attendance details and save them to the database using a servlet.
2. **Objective:** To build a JSP-based student portal that allows users to submit attendance details, which are then saved into a MySQL database through a servlet.

# Implementation/Code:

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"](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>

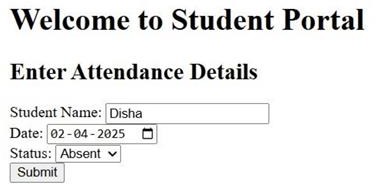
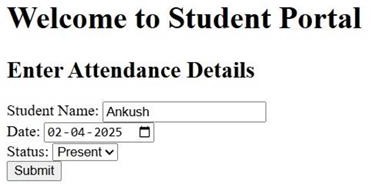
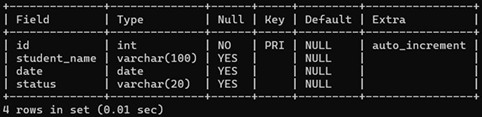
<welcome-file>default.jsp</welcome-file>

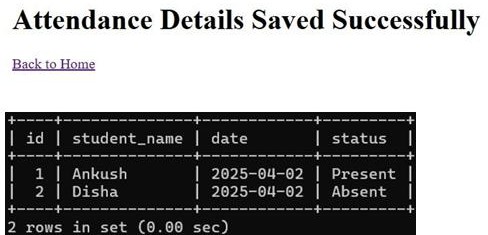
<welcome-file>default.htm</welcome-file>

</welcome-file-list>

</web-app>

# Output:

****



1. **Learning Outcome:**
   * Understood the interaction between JSP, servlets, and databases.
   * Learned how to process form data and persist it using JDBC.
   * Developed a complete dynamic web application using Java EE components.