**Experiment 7**

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**Branch: BE-CSE Section/Group: 903-B**

**Semester: 6th Date of Performance:**

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

**Problem :- 1(Easy-Level)**

**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:**

* Implement a servlet to handle HTTP POST requests for user authentication.
* Accept username and password through an HTML form.
* Validate credentials and display a welcome message upon success.

#### ****3. Algorithm:****

· Create an HTML form with fields for username and password.

· Implement a Java Servlet to handle form submissions.

· Retrieve user credentials from the request.

· Validate credentials (using hardcoded values for simplicity).

· If valid, display a personalized welcome message; otherwise, show an error.

1. **Implementation :**

**HTML Form (index.html)**

<!DOCTYPE html>

<html>

<head>

<title>Login Page</title>

</head>

<body>

<form action="LoginServlet" method="post">

<label>Username:</label>

<input type="text" name="username" required><br>

<label>Password:</label>

<input type="password" name="password" required><br>

<input type="submit" value="Login">

</form>

</body>

</html>

#### ****Servlet (LoginServlet.java)****

import java.io.IOException;

import java.io.PrintWriter;

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("/LoginServlet")

public class LoginServlet extends HttpServlet {

protected void doPost(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

response.setContentType("text/html");

PrintWriter out = response.getWriter();

// Retrieve form parameters

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

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

// Hardcoded credentials for validation

if ("admin".equals(username) && "password123".equals(password)) {

out.println("<h2>Welcome, " + username + "!</h2>");

} else {

out.println("<h2>Invalid username or password. Try again.</h2>");

}

}

}

**5.Output:**

#### 

#### Problem:- 2(Medium-level)

**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:

* Establish a connection to a MySQL database using JDBC.
* Fetch and display all employees from the database.
* Provide a search form to retrieve employee details by ID.

**3.Algorithm:**

* Define database connection details (URL, username, password).
* Establish a connection using DriverManager.
* If an employee ID is provided, fetch and display the corresponding record.
* Otherwise, retrieve and display all employee records.
* Close the database connection.

1. **Implementation/Code:**

Servlet (EmployeeServlet.java)

import java.io.IOException;

import java.io.PrintWriter;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.PreparedStatement;

import java.sql.ResultSet;

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("/EmployeeServlet")

public class EmployeeServlet extends HttpServlet {

private static final String URL = "jdbc:mysql://localhost:3306/your\_database"; // Replace with DB name

private static final String USER = "your\_username"; // Replace with MySQL username

private static final String PASSWORD = "your\_password"; // Replace with MySQL password

protected void doGet(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

response.setContentType("text/html");

PrintWriter out = response.getWriter();

String empId = request.getParameter("empId");

try {

Connection conn = DriverManager.getConnection(URL, USER, PASSWORD);

String query;

PreparedStatement stmt;

if (empId != null && !empId.isEmpty()) {

query = "SELECT EmpID, Name, Salary FROM Employee WHERE EmpID = ?";

stmt = conn.prepareStatement(query);

stmt.setInt(1, Integer.parseInt(empId));

} else {

query = "SELECT EmpID, Name, Salary FROM Employee";

stmt = conn.prepareStatement(query);

}

ResultSet rs = stmt.executeQuery();

out.println("<h2>Employee Details</h2>");

while (rs.next()) {

out.println("EmpID: " + rs.getInt("EmpID") + ", Name: " + rs.getString("Name") +

", Salary: " + rs.getDouble("Salary") + "<br>");

}

conn.close();

} catch (Exception e) {

out.println("<h2>Error: " + e.getMessage() + "</h2>");

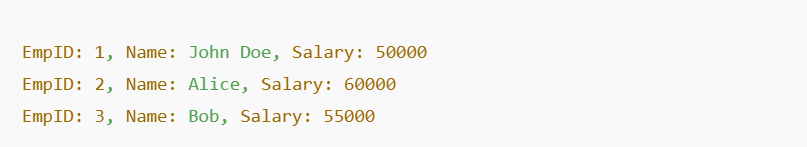
}

}

}

1. **Output:**

**1. Viewing All Employees:**



#### ****2. Searching for Employee by ID (Example: ID = 1)****



#### Problem:- 3(Hard-level)

**1.Aim:**Develop a JSP-based student portal that includes a form for entering attendance details and saves them to a database using a servlet.

#### 2.Objective:

* Create a JSP form to enter student attendance details.
* Implement a servlet to handle form submissions.
* Store attendance records in a MySQL database using JDBC.

**3.Algorithm:**

* Create a JSP form to enter student ID, name, and attendance status.
* Implement a servlet to handle form submission and insert data into the database.
* Retrieve form data using HttpServletRequest.
* Establish a database connection using DriverManager.
* Insert the data into the attendance table.
* Close the database connection.

1. **Implementation/Code:**

**JSP Form (attendance.jsp)**

<!DOCTYPE html>

<html>

<head>

<title>Student Attendance</title>

</head>

<body>

<h2>Enter Student Attendance</h2>

<form action="AttendanceServlet" method="post">

<label>Student ID:</label>

<input type="text" name="studentId" required><br>

<label>Name:</label>

<input type="text" name="name" required><br>

<label>Attendance:</label>

<select name="attendance">

<option value="Present">Present</option>

<option value="Absent">Absent</option>

</select><br>

<input type="submit" value="Submit">

</form>

</body>

</html>

**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 String URL = "jdbc:mysql://localhost:3306/your\_database"; // Replace with DB name

private static final String USER = "your\_username"; // Replace with MySQL username

private static final String PASSWORD = "your\_password"; // Replace with MySQL password

protected void doPost(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

response.setContentType("text/html");

PrintWriter out = response.getWriter();

String studentId = request.getParameter("studentId");

String name = request.getParameter("name");

String attendance = request.getParameter("attendance");

try {

Connection conn = DriverManager.getConnection(URL, USER, PASSWORD);

String query = "INSERT INTO Attendance (StudentID, Name, Status) VALUES (?, ?, ?)";

PreparedStatement stmt = conn.prepareStatement(query);

stmt.setInt(1, Integer.parseInt(studentId));

stmt.setString(2, name);

stmt.setString(3, attendance);

int rows = stmt.executeUpdate();

if (rows > 0) {

out.println("<h2>Attendance recorded successfully.</h2>");

} else {

out.println("<h2>Failed to record attendance.</h2>");

}

conn.close();

} catch (Exception e) {

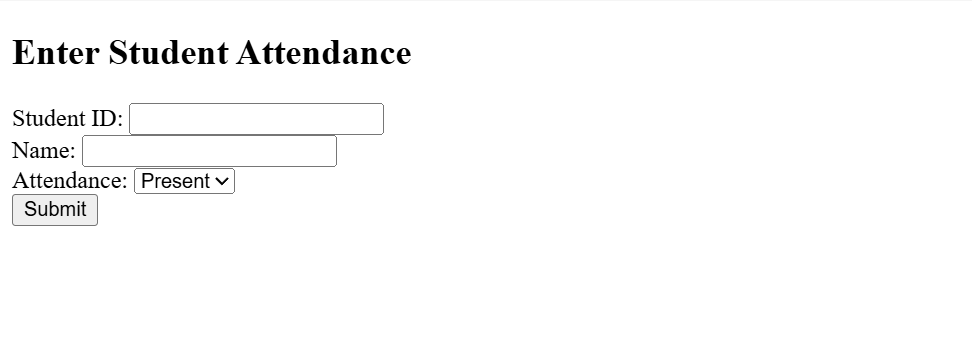
out.println("<h2>Error: " + e.getMessage() + "</h2>");

}

}

}

1. **Output:**



#### ****Learning Outcomes:****

* **JSP Form Handling:** How to create and submit forms using JSP.
* **Servlet Communication:** How a servlet processes form data sent from a JSP page.
* **JDBC Connectivity:** How to establish a connection to a MySQL database using JDBC.
* **Data Insertion:** How to insert form data into a database using PreparedStatement.
* **HTTP Request Handling:** How to use doPost() in servlets for handling form submissions.
* **Web Application Flow:** Understanding how JSP, servlets, and databases interact in a web application.