Experiment No. 9

Problem stmt1:

Create a JSP page that displays a personalized welcome message based on user input.

Code:

Index.jsp:

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
<html>
<head>
   <title>Personalized Welcome</title>
</head>
<body>
   <h2>Enter Your Name:</h2>
   <form action="welcome.jsp" method="post">
      <input type="text" name="username" required />
      <input type="submit" value="Submit" />
   </form>
</body>
</html>
```

welcome.jsp:

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
<html>
<head>
   <title>Welcome Page</title>
</head>
<body>
   <%
      String name = request.getParameter("username");
   %>
   <h2>Welcome, <%= name %>!</h2>
```

```html
</body>
</html>
```

Problem stmt2:

Develop a JSP-based calculator that performs basic arithmetic operations.

Code:

Calculator.jsp:

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8"%>
<html>
<head>
   <title>Simple JSP Calculator</title>
</head>
<body>
   <h2>JSP Calculator</h2>
   <form method="post">
      Number 1: <input type="text" name="num1" required /><br><br>
      Number 2: <input type="text" name="num2" required /><br><br>
      Operation:
      <select name="op">
         <option value="+">Add</option>
         <option value="-">Subtract</option>
         <option value="*">Multiply</option>
         <option value="/">Divide</option>
      </select><br><br>
      <input type="submit" value="Calculate" />
   </form>

   <%
      String n1 = request.getParameter("num1");
      String n2 = request.getParameter("num2");
      String op = request.getParameter("op");

      if(n1 != null && n2 != null && op != null) {
         double num1 = Double.parseDouble(n1);
         double num2 = Double.parseDouble(n2);
         double result = 0;

         switch(op) {
            case "+": result = num1 + num2; break;
            case "-": result = num1 - num2; break;
```

```
            case "*": result = num1 * num2; break;
            case "/":
                if (num2 != 0)
                    result = num1 / num2;
                else
                    out.println("<p style='color:red;'>Error: Division by zero</p>");
                break;
        }

        if(!(op.equals("/") && num2 == 0)) {
            out.println("<h3>Result: " + result + "</h3>");
        }
    }
%>
</body>
</html>
```

Problem stmt3:

Implement a JSP page that accepts user input and processes it dynamically.

Code:

userinput.jsp:

```
<%@ page language="java" contentType="text/html; charset=UTF-8"%>
<html>
<head>
    <title>Dynamic User Input</title>
</head>
<body>
    <h2>Enter Your Name</h2>
    <form method="post">
        <input type="text" name="username" required />
        <input type="submit" value="Submit" />
    </form>

    <%
        String user = request.getParameter("username");
        if (user != null && !user.trim().equals("")) {
    %>
        <h3>Hello, <%= user %>! Welcome to JSP.</h3>
```

```jsp
<%
    }
%>
</body>
</html>
```

Problem stmt4:

Implement JSP scripting elements such as declarations, expressions, and scriptlets.

Code:

Scriptingelements.jsp:

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8" %>
<html>
<head>
   <title>JSP Scripting Elements Example</title>
</head>
<body>
   <h2>JSP Scripting Elements Demo</h2>

   <!-- Declaration: Declare a method or variable -->
   <%!
      int count = 0;

      // A method to return a greeting
      public String getGreeting(String name) {
         return "Hello, " + name + "! Welcome to JSP scripting elements.";
      }
   %>

   <!-- HTML form to take user input -->
   <form method="post">
      Enter your name: <input type="text" name="username" required />
      <input type="submit" value="Submit" />
   </form>

   <!-- Scriptlet: Control logic -->
   <%
      String user = request.getParameter("username");
```

```
    if (user != null && !user.trim().equals("")) {
        count++; // Increment count every time user submits
    %>


    <!-- Expression: Print value directly -->
    <p><b><%= getGreeting(user) %></b></p>
    <p>You are visitor number <%= count %> on this page (since server started).</p>


    <%
        }
    %>
</body>
</html>
```

Problem stmt5:

Develop a simple form handling application using JSP

Code:

index.html:

```
<!-- index.html -->
<!DOCTYPE html>
<html>
<head>
    <title>Form Handling with JSP</title>
</head>
<body>
    <h2>User Registration Form</h2>
    <form action="handleform.jsp" method="post">
        Name: <input type="text" name="username" required><br><br>
        Email: <input type="email" name="useremail" required><br><br>
        <input type="submit" value="Submit">
    </form>
</body>
</html>
```

handleform.jsp:

```
<!-- handleForm.jsp -->

<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>

<!DOCTYPE html>
<html>
<head>
```

```html
    <title>Form Submission Result</title>
</head>
<body>
  <h2>Form Submission Received</h2>
  <%
     String name = request.getParameter("username");
     String email = request.getParameter("useremail");
  %>
  <p><strong>Name:</strong> <%= name %></p>
  <p><strong>Email:</strong> <%= email %></p>
</body>
</html>
```

Problem stmt6:
 Experiment with JSP directives and implicit objects.

Code:

directivesimplicit.jsp:

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"
import="java.util.Date, javax.servlet.http.HttpServletRequest" %>

<!DOCTYPE html>
<html>
<head>
  <title>JSP Implicit Objects and Directives</title>
</head>
<body>
  <h2>📄 JSP Implicit Objects & Directives Demo</h2>

  <p><strong>Client IP Address:</strong> <%= request.getRemoteAddr() %></p>

  <%
     response.setHeader("Custom-Header", "JSPExperiment");
     session.setAttribute("username", "Vaishnawi");
     application.setAttribute("appName", "WebTechApp");
  %>

  <p><strong>Session Username:</strong> <%= session.getAttribute("username") %></p>
  <p><strong>Application Name:</strong> <%= application.getAttribute("appName") %></p>
  <p><strong>Servlet Config Name:</strong> <%= config.getServletName() %></p>
  <p><strong>Current Date:</strong> <%= new Date() %></p>

  <p><strong>Request URI from PageContext:</strong>
```

```
        <%= ((HttpServletRequest)pageContext.getRequest()).getRequestURI() %>
    </p>

</body>
</html>
```