



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment No: 3.2

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Section/Group 21BCS-CC-646(A)

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Subject Name: Project Based Learning in Java with Lab

Subject Code: 21CSH-319

Aim: Create a program to create JSP application to demonstrate the expression tag by using mathematical operation.

Objective:

1. To learn about JSP tags.
2. To learn about how jsp works java.

Input/Apparatus Used: IntelliJ / VS Code.

Procedure/Algorithm/Pseudocode

1. Display the HTML form (index.jsp):

- a. Provide input fields for two numbers.
- b. Provide checkboxes for addition, subtraction, multiplication, and division operations.
- c. Set the "Addition" checkbox as checked by default.

2. Handle form submission (calculate.jsp):

- a. Retrieve values of num1, num2, and selected checkboxes.
- b. Use expression tags to perform selected mathematical operations:
 - If "Addition" checkbox is checked:
Display $\text{num1} + \text{num2}$.
 - If "Subtraction" checkbox is checked:
Display $\text{num1} - \text{num2}$.
 - If "Multiplication" checkbox is checked:
Display $\text{num1} * \text{num2}$.
 - If "Division" checkbox is checked:
 - i. Check if num2 is zero:
 - If yes, redirect to error.jsp.



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- If no, display num1 / num2.

3. Error Handling (error.jsp):

Display an error message indicating invalid data for division operation.

Code:

1. Index.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Math Operations</title>
</head>
<body>
    <h2>Math Operations</h2>
    <form action="calculate.jsp" method="post">
        Enter Number 1: <input type="number" name="num1"><br>
        Enter Number 2: <input type="number" name="num2"><br><br>

        <input type="checkbox" name="add" checked> Addition<br>
        <input type="checkbox" name="subtract"> Subtraction<br>
        <input type="checkbox" name="multiply"> Multiplication<br>
        <input type="checkbox" name="divide"> Division<br><br>

        <input type="submit" value="Calculate">
    </form>
</body>
</html>
```

2. calculate.jsp

```
3.<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Calculation Result</title>
</head>
<body>
    <h2>Calculation Result</h2>
    <%
        double num1 = Double.parseDouble(request.getParameter("num1"));
        double num2 = Double.parseDouble(request.getParameter("num2"));
```



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```
        if (request.getParameter("add") != null) {
            out.println("Addition Result: " + (num1 + num2));
        }
        if (request.getParameter("subtract") != null) {
            out.println("Subtraction Result: " + (num1 - num2));
        }
        if (request.getParameter("multiply") != null) {
            out.println("Multiplication Result: " + (num1 * num2));
        }
        if (request.getParameter("divide") != null) {
            if (num2 != 0) {
                out.println("Division Result: " + (num1 / num2));
            } else {
                response.sendRedirect("error.jsp");
            }
        }
    }
    %>
</body>
</html>
```

4. Error.jsp

```
5.<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Error</title>
</head>
<body>
    <h2>Error</h2>
    <p>Invalid data for division operation. Please enter a non-zero
divisor.</p>
</body>
</html>
```



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Result/Output:

Math Operations

Enter Number 1:
Enter Number 2:

- ☒ Addition
- ☒ Subtraction
- ☒ Multiplication
- ☒ Division

Calculation Result

Addition Result: 135.0 Subtraction Result: 111.0 Multiplication Result: 1476.0 Division Result: 10.25



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