



# DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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## Experiment No: 3.1

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**Semester:** 6<sup>th</sup>

**Date of Performance:** 11/02/2024

**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>

<style>

.container {

    display: flex;

    justify-content: center;

    align-items: center;

    height: 100vh;

}

.box {

    border: 2px solid #ccc;

    padding: 20px;

    border-radius: 10px;

}
```



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```
</style>
```

```
</head>
```

```
<body>
```

```
<div class="container">
```

```
<div class="box">
```

```
<form action="calculate.jsp" method="post">
```

```
<h2>Math Operations</h2>
```

```
<hr>
```

```
<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>
```

```
Enter Number 1: <input type="number" name="num1"><br>
```

```
Enter Number 2: <input type="number" name="num2"><br><br>
```

```
<input type="submit" value="Calculate">
```

```
</form>
```

```
</div>
```

```
</div>
```

```
</body>
```

```
</html>
```



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## 2. calculate.jsp

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

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Calculation Result</title>

<style>

.container {

    display: flex;

    justify-content: center;

    align-items: center;

    height: 100vh;

    box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);

}

.box {

    border: 2px solid #ccc;

    padding: 20px;

    border-radius: 10px;

}

</style>

</head>

<body>
```



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```
<div class="container">

    <div class="box">

        <h2>Calculation Result</h2>

        <hr>

        <%

            double num1 = Double.parseDouble(request.getParameter("num1"));

            double num2 = Double.parseDouble(request.getParameter("num2"));

            if (request.getParameter("add") != null) {

                out.println("Addition Result: " + (num1 + num2) + "<br>");

            }

            if (request.getParameter("subtract") != null) {

                out.println("Subtraction Result: " + (num1 - num2) + "<br>");

            }

            if (request.getParameter("multiply") != null) {

                out.println("Multiplication Result: " + (num1 * num2) + "<br>");

            }

            if (request.getParameter("divide") != null) {

                if (num2 != 0) {

                    out.println("Division Result: " + (num1 / num2) + "<br>");

                } else {

                    response.sendRedirect("error.jsp");

                }

            }

        %>

    </div>

</div>
```



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</body>

</html>

## 3. Error.jsp

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

```
    pageEncoding="UTF-8"%>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<meta charset="UTF-8">
```

```
<title>Error</title>
```

```
<style>
```

```
    body {
```

```
        margin: 0;
```

```
        padding: 0;
```

```
        height: 100vh;
```

```
        display: flex;
```

```
        justify-content: center;
```

```
        align-items: center;
```

```
        background-color: #f2f2f2;
```

```
    }
```

```
    .container {
```

```
        max-width: 400px;
```

```
        padding: 20px;
```

```
        background-color: #fff;
```

```
        border-radius: 10px;
```



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```
        box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);

        text-align: center;

    }

</style>

</head>

<body>

    <div class="container">

        <h2>Error!!!</h2>

        <hr>

        <p>Invalid data for division operation. Please enter a non-zero divisor.</p>

    </div>

</body>

</html>
```



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## Result/Output:

### Math Operations

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

Enter Number 1:

Enter Number 2:

### Calculation Result

Addition Result: 1010.0

Subtraction Result: 990.0

Multiplication Result: 10000.0

Division Result: 100.0

### Math Operations

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

Enter Number 1:

Enter Number 2:

### Error!!!

Invalid data for division operation. Please enter a non-zero divisor.





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