



Experiment 3.2

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Subject Name: Project based learning in Java with Lab

Subject Code: 21CSH-319

1. Aim: Create JSP application for addition, multiplication and division.

2. Objective: The objective of this program is to create an application that uses Java Servlet and takes input from user to add, multiply or divide numbers. The application then returns the output on the interface.

3. Code:

index.jsp:

```
<!DOCTYPE
```

```
html> <html>
```

```
<head>
```

```
<title>Math
```

```
Operations</title> </head>
```

```
<body>
```

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

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

```
<input type="checkbox" name="operation" value="add" checked>Addition
```

```
<input type="checkbox" name="operation" value="subtract">Subtraction <input
```

```
type="checkbox" name="operation" value="multiply">Multiplication <input
```

```
type="checkbox" name="operation" value="divide">Division<br><br>
```

```
Enter first number: <input type="text" name="num1"><br><br>
```

```
Enter second number: <input type="text" name="num2"><br><br>
```

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

```
</form>
```

```
</body>
```

```
</html>
```



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calculate.jsp:

```
<% @ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <title>Result</title>
</head>
<body>
    <h2>Result</h2>
    <%
        String operation = request.getParameter("operation");
        double num1 = Double.parseDouble(request.getParameter("num1"));
        double num2 = Double.parseDouble(request.getParameter("num2"));
        double result = 0;
        String errorMessage = null;

        if ("add".equals(operation)) {
            result = num1 + num2;
        } else if ("subtract".equals(operation)) {
            { result = num1 - num2;
        } else if ("multiply".equals(operation)) {
            { result = num1 * num2;
        } else if ("divide".equals(operation)) {
            { if (num2 != 0) {
                result = num1 / num2;
            } else {
                errorMessage = "Error: Cannot divide by zero.";
                request.setAttribute("error", errorMessage);
                request.getRequestDispatcher("error.jsp").forward(request, response);
            }
        }
    }
    %>

    <% if (errorMessage == null) { %>
        <p>Result of <%= operation %>: <%=
        result %></p> <% } %>
</body>
</html>
```

```
error.jsp:
<% @ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <title>Error</title>
</head>
<body>
    <h2>Error</h2>
    <p><%=
request.getAttribute("error") %></p> </body>
</html>
```

4. Output:



Math Operations

☒ Addition ☐ Subtraction ☐ Multiplication ☐ Division

Enter first number:

Enter second number:

Result

Result of add: 41.0

5. Learning Outcomes:

- Learned how to use Apache Tomcat to run JSP applications.
- Design and implement a dynamic JSP calculator application.
- Deploy and test the JSP calculator on a web server optimizing performance.