Experiment 3.2

Student Name: Nikhil UID: 21BCS5892

Branch: CSE Section/Group: 620-A

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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.

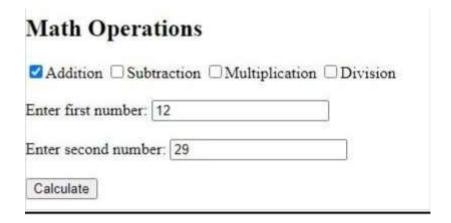
3. Code:

```
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</pre>
    type="checkbox" name="operation" value="multiply">Multiplication < input
    type="checkbox" name="operation" value="divide">Division<br><br>
    Enter second number: <input type="text" name="num2"><br><br>>
    <input type="submit" value="Calculate">
  </form>
</body>
</html>
```

```
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) { %>
    Result of <% = operation %>: <% =
  result %> <% }%>
</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>
 <%=
 request.getAttribute("error") %> </body>
 </html>

4. Output:



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.