Assignment

Learner Details

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- **Enrollment Number: SU625MR011**
- **Batch / Class: June 2025 MERN**
- **Assignment: Simple calculator using JavaScript Functions**
- **Date of Submission: 16/07/2025**

Problem Solving Activity 1.1

1. Program Statement

The goal of this program is to create a simple calculator using HTML, CSS, and JavaScript that takes two numeric inputs from the user and performs one of the four basic arithmetic operations: addition, subtraction, multiplication, or division. The user selects the desired operation from a dropdown menu and clicks a button to calculate and display the results.

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2. Algorithm

- Accept two number inputs from the user using input fields.
- Provide a dropdown (select) to choose the arithmetic operation.
- On clicking the calculate button, call the calculate() function.
- Inside the function:
- Retrieve the input values and selected operation.
- Convert the inputs to numbers using parseFloat().
- Validate the inputs.
- Based on the selected operation, call the corresponding arithmetic function (add, subtract, multiply, divide).
- Handle division by zero separately.
- Display the result in a result section on the page.

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3. Pseudocode

START

READ num1 from input field

READ num2 from input field

READ selected operation from dropdown

IF num1 or num2 is not a number THEN

  DISPLAY error message

ELSE

  SWITCH operation

    CASE 'add': result = num1 + num2

    CASE 'subtract': result = num1 - num2

    CASE 'multiply': result = num1 * num2

    CASE 'divide':

      IF num2 == 0 THEN

        DISPLAY 'Cannot divide by zero'

      ELSE

        result = num1 / num2

  END SWITCH

  DISPLAY result

END IF

END

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4. Program Code

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8" />
  <meta name="viewport" content="width=device-width, initial-scale=1.0"/>
  <title>Simple Calculator using JavaScript</title>
   <link rel="icon" type="image/x-icon" href="../../arr1.jpg">
  <style>
    body {
```

```
    display: flex;
    justify-content: center;
    align-items: center;
    height: 650px;
    background-color:antiquewhite;
    font-family: Arial, sans-serif;
  }
  .calculator {
    background-color:burlywood;
    padding: 30px;
    border-radius: 10px;
    box-shadow: 0 0 15px goldenrod;
    width: 300px;
    text-align: center;
  }
  input, select, button {
    width: 100%;
    padding: 10px;
    margin: 10px 0;
    font-size: 16px;
    background-color:floralwhite;
  }
  #result {
    margin-top: 15px;
    font-weight: bold;
    color:brown;
    font-size:28px;
  }
</style>
```

```
</head>
<body>

  <div class="calculator">
    <h2>Simple Calculator Using JavaScript</h2>
    <input type="number" id="num1" placeholder="Please Enter Your Input :- Number 1" />
    <input type="number" id="num2" placeholder="Please Enter Your Input :- Number 2" />

    <select id="operation">
      <option value="add">Addition Operation  (+)</option>
      <option value="subtract">Subtraction Operation  (−)</option>
      <option value="multiply">Multiplication Operation  (×)</option>
      <option value="divide">Division Operation  (÷)</option>
    </select>

    <button onclick="calculate()">Please click here to calculate the result</button>

    <div id="result"></div>
  </div>

  <script>
    function add(a, b) {
      return a + b;
    }

    function subtract(a, b) {
      return a - b;
    }
```

```
function multiply(a, b) {
  return a * b;
}

function divide(a, b) {
  if (b === 0) return 'ERROR:   "CANNOT DIVIDE BY ZERO" ';
  return a / b;
}

function calculate() {
  const num1 = parseFloat(document.getElementById('num1').value);
  const num2 = parseFloat(document.getElementById('num2').value);
  const operation = document.getElementById('operation').value;
  let result;

  if (isNaN(num1) || isNaN(num2)) {
    result = 'Error: Please try to enter valid numbers';
  } else {
    switch (operation) {
      case 'add':
        result = add(num1, num2);
        break;
      case 'subtract':
        result = subtract(num1, num2);
        break;
      case 'multiply':
        result = multiply(num1, num2);
        break;
      case 'divide':
```

```
            result = divide(num1, num2);
            break; } }
        document.getElementById('result').textContent = "Result: " + result;    }
    </script>
</body>
</html>
```

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5. Test Cases

Test Case	Input 1	Input 2	Operation	Expected Output
TC1	12	3	Addition	Result: 15
TC2	8	5	Subtraction	Result: 3
TC3	7	6	Multiplication	Result: 42
TC4	10	2	Division	Result: 5
TC5	10	0	Division	ERROR: CANNOT DIVIDE BY ZERO

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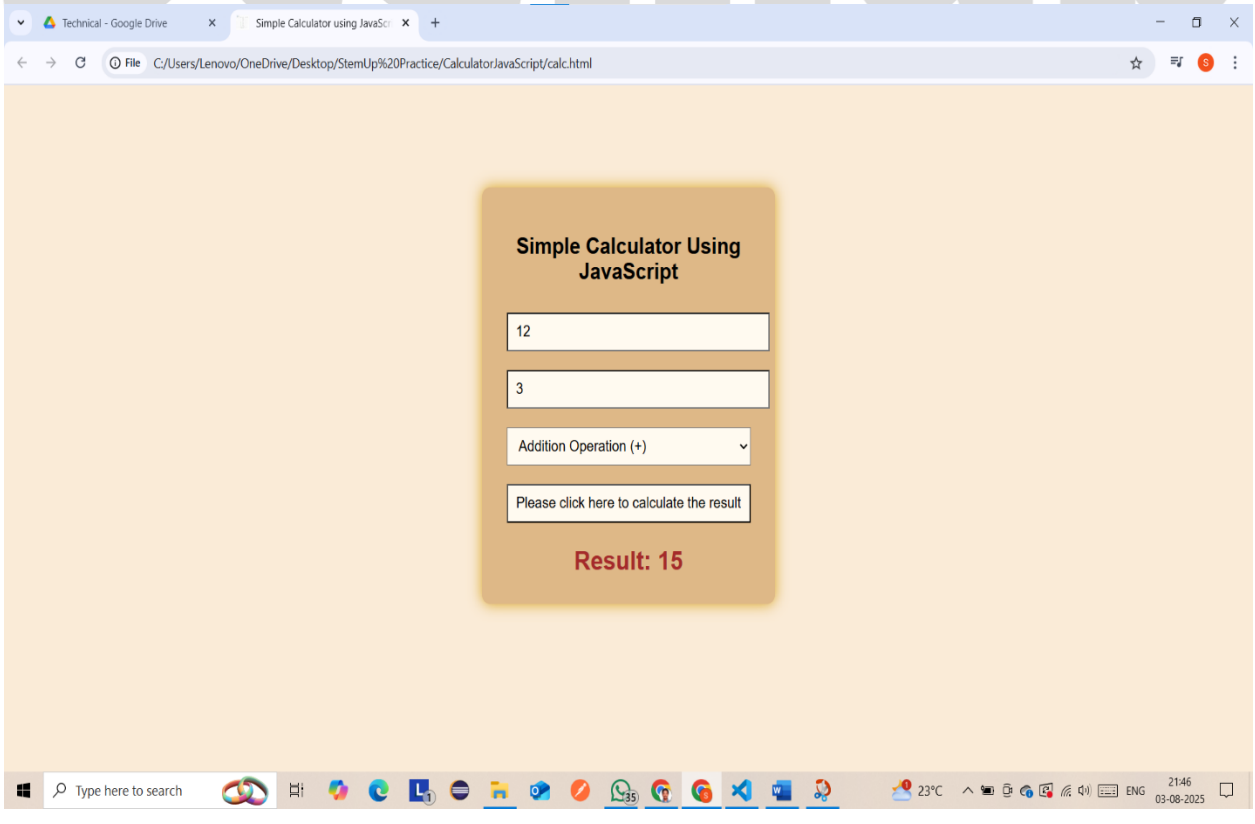
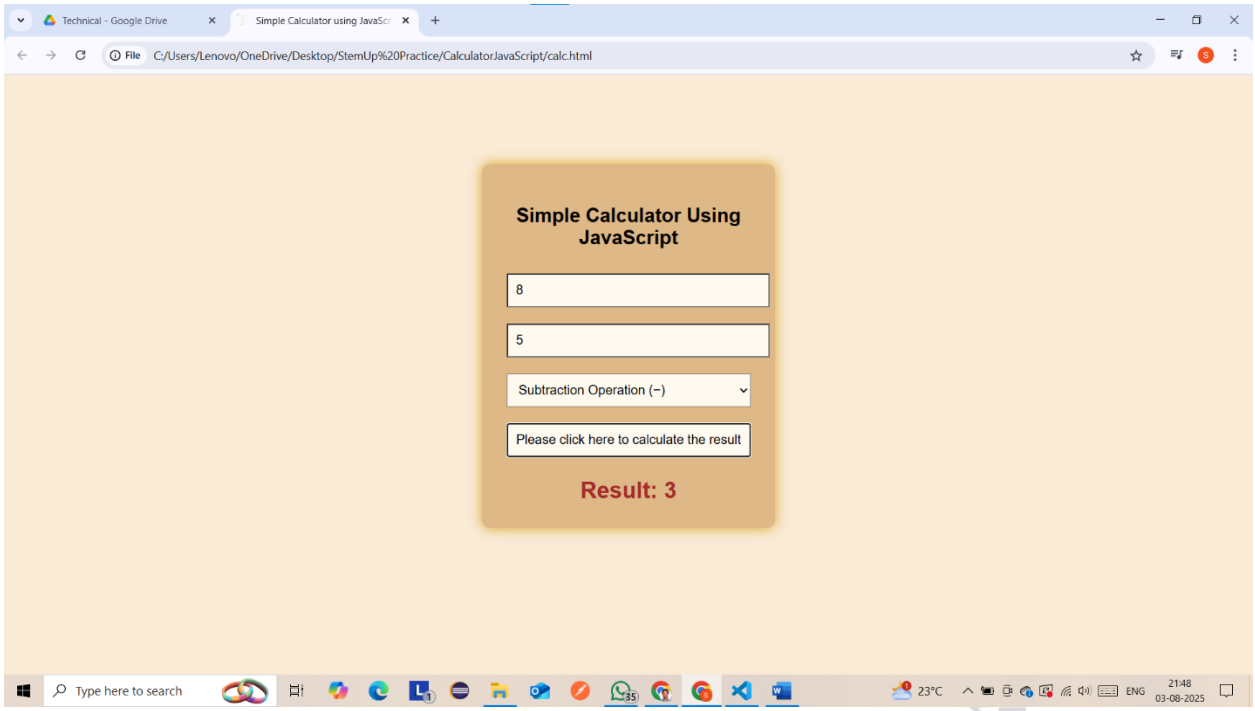
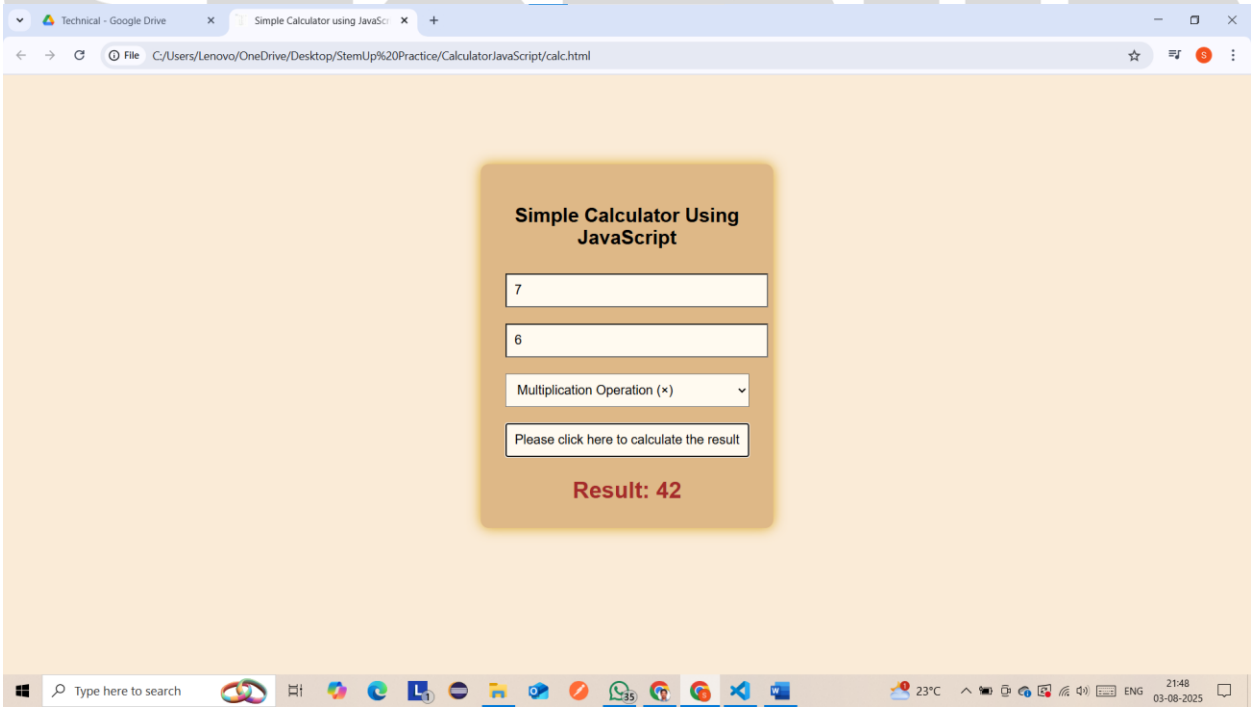
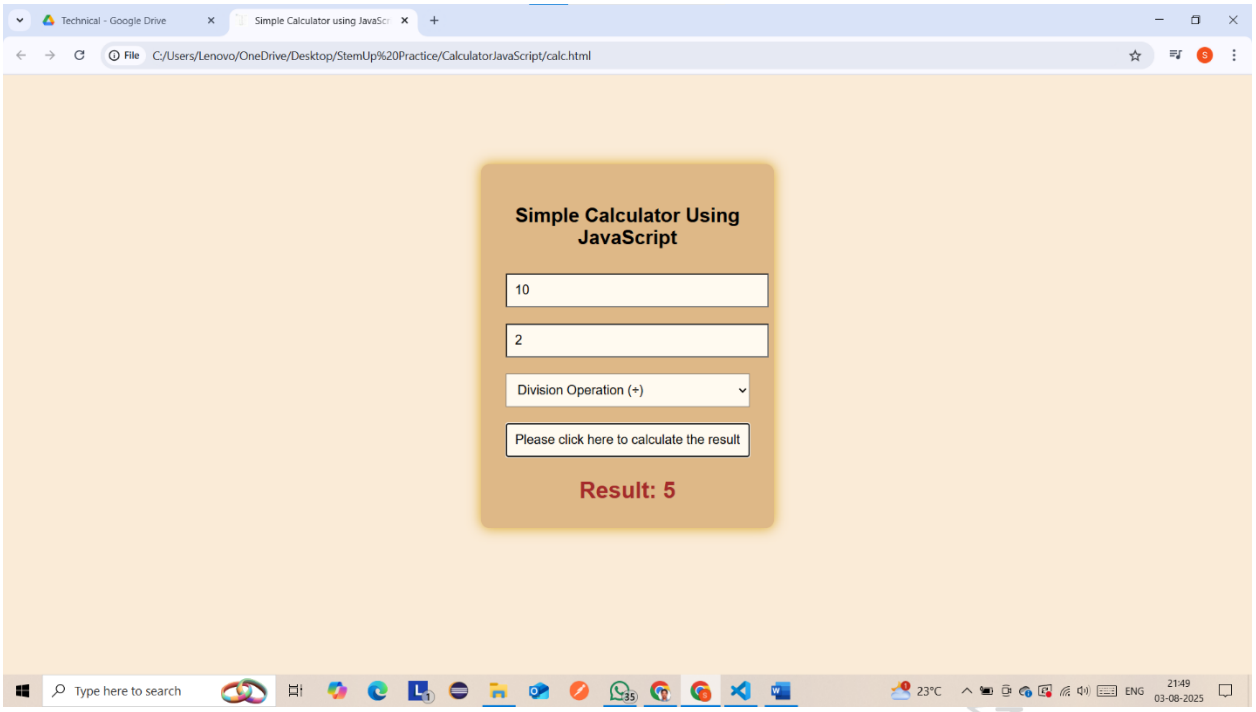
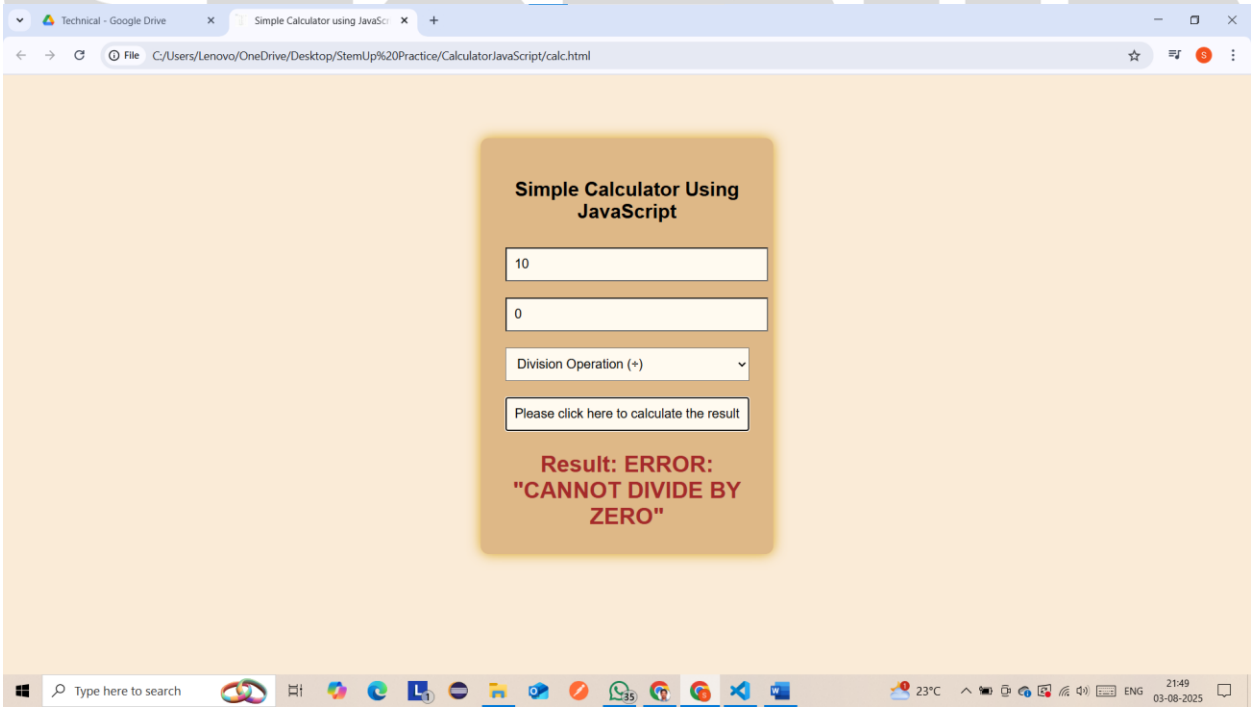
6. Screenshots of Output




Technical - Google Drive
Simple Calculator using JavaScr
File C:/Users/Lenovo/OneDrive/Desktop/StemUp%20Practice/CalculatorJavaScript/calc.html
Simple Calculator Using JavaScript
8
5
Subtraction Operation (-)
Please click here to calculate the result
Result: 3
Type here to search
23°C
ENG
21:48
03-08-2025


Technical - Google Drive
Simple Calculator using JavaScr
File C:/Users/Lenovo/OneDrive/Desktop/StemUp%20Practice/CalculatorJavaScript/calc.html
Simple Calculator Using JavaScript
7
6
Multiplication Operation (×)
Please click here to calculate the result
Result: 42
Type here to search
23°C
ENG
21:48
03-08-2025


Technical - Google Drive
Simple Calculator using JavaScr
File C:/Users/Lenovo/OneDrive/Desktop/StemUp%20Practice/CalculatorJavaScript/calc.html
Simple Calculator Using JavaScript
10
2
Division Operation (÷)
Please click here to calculate the result
Result: 5
Type here to search
23°C
ENG
21:49
03-08-2025


Technical - Google Drive
Simple Calculator using JavaScr
File C:/Users/Lenovo/OneDrive/Desktop/StemUp%20Practice/CalculatorJavaScript/calc.html
Simple Calculator Using JavaScript
10
0
Division Operation (÷)
Please click here to calculate the result
Result: ERROR: "CANNOT DIVIDE BY ZERO"
Type here to search
23°C
ENG
21:49
03-08-2025

7. Observation / Reflection

This assignment helped me understand how to use JavaScript functions and interact with the DOM effectively. I learned how to connect inputs, dropdowns, and buttons to perform real-time calculations. Handling edge cases like empty inputs or division by zero improved my validation skills. I also enjoyed styling the interface. Next time, I'd like to add features like keyboard input, calculation history, and instant validation.