

Assignment

Learner Details

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 - **Batch / Class:** June 2025 MERN
 - **Assignment:** Simple calculator using JavaScript Functions
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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.

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.
-

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
```

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);
```

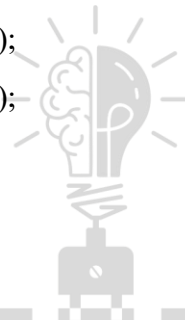
```
                break;
```

```
            case 'multiply':
```

```
                result = multiply(num1, num2);
```

```
                break;
```

```
            case 'divide':
```



```

    result = divide(num1, num2);
    break; } }

document.getElementById('result').textContent = "Result: " + result; }

</script>
</body>
</html>

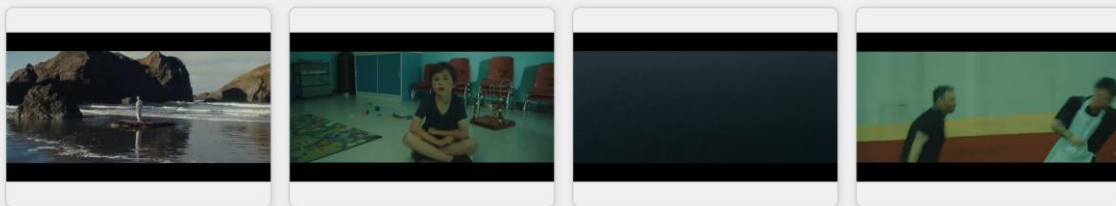
```

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

6. Screenshots of Output

Video Gallery



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.

