A close up of a logo

Description automatically generated

**JavaScript Basics**

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**LAB MANUAL**

**Simple Calculator Performing Arithmetic operation with JavaScript**

**Objective:**

The objective of this activity is to teach learners how to perform basic arithmetic operations (addition, subtraction, multiplication, and division) using JavaScript. By building a simple calculator, participants will practice connecting HTML form inputs with JavaScript functions, processing user input, and dynamically displaying results on a web page.

**Equipment Required:**

* A computer with a text editor (VS Code, Sublime Text, or Notepad++)
* A modern web browser (Chrome, Firefox, Edge, etc.)

**Prerequisites:**

* Basic knowledge of HTML elements and forms
* Understanding of JavaScript variables, functions, and event handling
* Ability to link an external JavaScript file to an HTML page

**Problem Statement:**

Create a simple calculator where the user can enter two numbers and choose an arithmetic operation (addition, subtraction, multiplication, or division). When the user clicks a "Calculate" button, JavaScript should process the inputs and display the correct result. This activity will reinforce connecting form inputs to JavaScript and updating HTML content dynamically.

**Procedure:**

1. Create ***calculator.html*** for the interface.
2. Add two input fields for the numbers.
3. Provide a <select> dropdown for the operation type.
4. Add a Calculate button and an area to display the result.
5. Create ***script.js*** for JavaScript logic.
6. In JavaScript, fetch input values, parse them to numbers, perform the selected operation, and display the result.
7. Test with different inputs and operations.

**Code**

***calculator.html***

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

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

**<title>Simple Calculator</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**background-color: #eef2f3;**

**display: flex;**

**justify-content: center;**

**align-items: center;**

**height: 100vh;**

**}**

**.calculator {**

**background: white;**

**padding: 25px;**

**border-radius: 10px;**

**box-shadow: 0px 4px 10px rgba(0,0,0,0.1);**

**width: 300px;**

**text-align: center;**

**}**

**input, select, button {**

**width: 100%;**

**margin: 8px 0;**

**padding: 10px;**

**font-size: 1rem;**

**border-radius: 5px;**

**border: 1px solid #ccc;**

**}**

**button {**

**background-color: #007bff;**

**color: white;**

**cursor: pointer;**

**border: none;**

**font-weight: bold;**

**}**

**button:hover {**

**background-color: #0056b3;**

**}**

**#result {**

**margin-top: 15px;**

**font-size: 1.2rem;**

**font-weight: bold;**

**color: #333;**

**}**

**</style>**

**</head>**

**<body>**

**<div class="calculator">**

**<h2>Simple Calculator</h2>**

**<input type="number" id="num1" placeholder="Enter first number">**

**<input type="number" id="num2" placeholder="Enter second number">**

**<select id="operation">**

**<option value="add">Addition (+)</option>**

**<option value="subtract">Subtraction (-)</option>**

**<option value="multiply">Multiplication (x)</option>**

**<option value="divide">Division (÷)</option>**

**</select>**

**<button id="calculateBtn">Calculate</button>**

**<div id="result">Result: </div>**

**</div>**

**<script src="script.js"></script>**

**</body>**

**</html>**

**Script.js**

**script,js**

**// script.js**

**// Simple Calculator Logic**

**// Get elements from the DOM**

**const num1Input = document.getElementById("num1");**

**const num2Input = document.getElementById("num2");**

**const operationSelect = document.getElementById("operation");**

**const resultDiv = document.getElementById("result");**

**const calculateBtn = document.getElementById("calculateBtn");**

**// Function to perform calculation**

**function calculate() {**

**const num1 = parseFloat(num1Input.value);**

**const num2 = parseFloat(num2Input.value);**

**const operation = operationSelect.value;**

**// Check if inputs are valid**

**if (isNaN(num1) || isNaN(num2)) {**

**resultDiv.textContent = "Please enter valid numbers.";**

**return;**

**}**

**let result;**

**switch (operation) {**

**case "add":**

**result = num1 + num2;**

**break;**

**case "subtract":**

**result = num1 - num2;**

**break;**

**case "multiply":**

**result = num1 \* num2;**

**break;**

**case "divide":**

**if (num2 === 0) {**

**resultDiv.textContent = "Error: Division by zero!";**

**return;**

**}**

**result = num1 / num2;**

**break;**

**default:**

**result = "Invalid operation";**

**}**

**// Display the result**

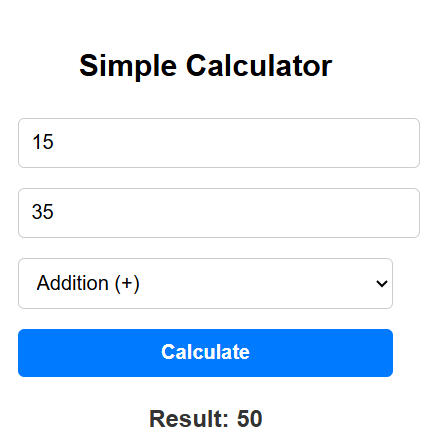
**resultDiv.textContent = `Result: ${result}`;**

**}**

**// Attach event listener to button**

**calculateBtn.addEventListener("click", calculate);**

**Output**

****