**Project 1 – Basic Calculator**

**Introduction:**

Calculator is a machine that automatically performs arithmetic operations and certain mathematical functions upon human instructions, which was later developed into digital arithmetic machine and gradually a device that can fit into a pocket.

**Scope:**

The Scope is to develop a functional calculator that can Perform basic Arithmetic operations, such as addition, subtraction, multiplication and division in a correct order of BODMAS/BIDMAS. Additional features like square root calculation, Percentage calculation, Memory Addition (M+), Memory Subtraction (M-), Memory Recall (MR), Memory Clear (MC) comes under the Nice to have part of scope.

**Problem description and Research questions:**

* How the simple appearance of Calculator should be met by still offering all the necessary features?
* How will the user follow the user interface to enter the values by clicking buttons or Keyboard?
* How to handles the mathematical errors during the time of operations?

**Requirements:**

1. **User Interface:**

* An interface which includes a section for Buttons with input values and a section for Display for output values.
* The input values include numerical values from 0 to 9, decimal point, mathematical operators (+, -, \*, /), square root, percentage, Memory Addition(M+), Memory Subtraction(M-), Memory Recall (MR) and Memory Clear (MC).

1. **Functionality:**

* The core functionality is developed using JavaScript, the sectioning of the user interface is done using HTML and the appearance is rendered using CSS.
* This combination of simple structure should let the user enter numerical values, perform calculations and see the results on the display.

1. **Operations:**

* The calculator should be capable of accepting the user input and perform basic arithmetic operations including calculation of square root and percentage.
* These operations should follow the correct order of BODMAS/BIDMAS.
* Input Handling:
* The input is parsed before proceeding to calculation.

1. **Error Handling:**

* Handle error cases like division by zero and other mathematical errors.

**Tools and Technologies used:**

1. **Tools:** Microsoft Visual studio IDE
2. **Technologies:** JavaScript, HTML, CSS

**Citations:**

* Calculator, Website: <https://www.britannica.com/technology/calculator>, 18.10.2025.