Basaveshwar Engineering College, Bagalkote

[An Autonomous Government Aided College, AICTE approved, Affiliated to VTU, Belagavi]

REPORT FOR WEB PROGRAMMING PROJECT

Department of Artificial Intelligence & Machine Learning.
[2024-25]

SUBJECT:
WEB PROGRAMMING(22UAI604C)

TITLE:
A SIMPLE WORKING CALCULATOR

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INTRODUCTION

A Simple Calculator is a basic yet essential web application designed to perform fundamental arithmetic operations such as addition, subtraction, multiplication, and division. Despite its simplicity, this project plays a vital role in introducing students to the core concepts of web development and interactive user interfaces. It provides hands-on experience with key frontend technologies including HTML for structure, CSS for styling, and JavaScript for implementing logic and interactivity.

The main objective of this project is to create a user-friendly and responsive calculator that mimics the functionality of a physical calculator. The calculator allows users to input numbers and operations via buttons, displays the current input and result on the screen, and evaluates expressions in real-time using JavaScript.

This project not only strengthens the understanding of DOM manipulation and event handling but also introduces best practices in user interface design and code organization. It is lightweight, browser-based, and requires no server-side programming, making it a perfect project for beginners in web programming.

Moreover, the calculator lays the foundation for more advanced projects in the future, such as scientific calculators or finance-based tools. It demonstrates how even simple logic, when combined with effective UI design, can result in a useful and functional web application.

OBJECTIVES

- To build a responsive and user-friendly calculator interface.
- To perform real-time arithmetic calculations using JavaScript.
- To gain practical experience in web development technologies.

HARDWARE SOFTWARE REQUIREMENTS

The software and hardware requirements for a project are essential to ensure smooth development, deployment, and functioning of the application. For a Simple Calculator, basic hardware components are sufficient to support quick user interaction and ensure the application runs efficiently in a web browser. The software tools help in designing the user interface, writing the functional logic, and ensuring compatibility across different devices and browsers.

❖ SOFTWARE REQUIREMENT :-

- HTML/CSS (Frontend structure and styling)
- JavaScript (Functionality and Interactivity)
- Visual Studio Code / Any Text Editor
- Browser (Chrome,Firefox,Edge)

❖ HARDWARE REQUIREMENT :-

- Laptop/PC with 4GB RAM
- Modern browser.

CODE SNIPPET

❖ HTML

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Calculator</title>
   <link rel="stylesheet" href="style.css">
</head>
<body>
   <div id="Calculator">
      <input type="text" id="display" readonly>
      <div id="Keys">
         <button onclick="ClearDisplay()" class="operations">AC</button>
         <button onclick="Delete()" class="operations">DEL</button>
         <button onclick="ToDisplay('%')" class="operations">%</button>
         <button onclick="ToDisplay('/')" class="operations">/</button>
         <button onclick="ToDisplay('7')">7</button>
         <button onclick="ToDisplay('8')">8</button>
         <button onclick="ToDisplay('9')">9</button>
         <button onclick="ToDisplay('*')" class="operations">*</button>
         <button onclick="ToDisplay('4')">4</button>
         <button onclick="ToDisplay('5')">5</button>
         <button onclick="ToDisplay('6')">6</button>
         <button onclick="ToDisplay('-')" class="operations">-</button>
         <button onclick="ToDisplay('1')">1</button>
         <button onclick="ToDisplay('2')">2</button>
         <button onclick="ToDisplay('3')">3</button>
         <button onclick="ToDisplay('+')" class="operations">+</button>
         <button onclick="ToDisplay('00')" >00</button>
         <button onclick="ToDisplay('0')" >0</button>
         <button onclick="ToDisplay('.')" >.</button>
         <button onclick="Calculate()" class="operations">=</button>
      </div>
   </div>
   <script src="index.js"></script>
</body>
</html>
```

❖ CSS

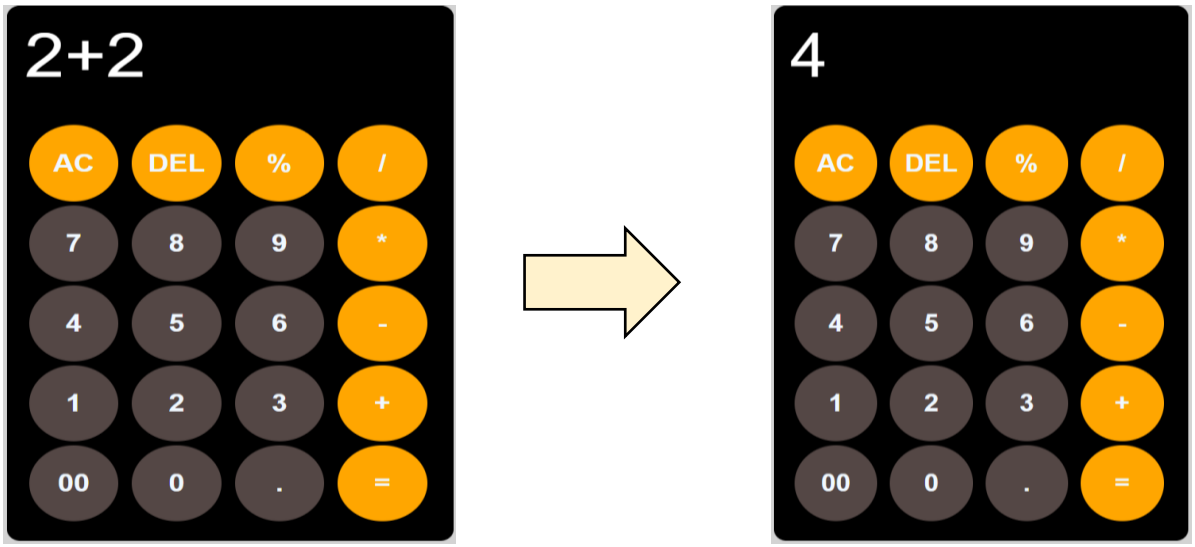
```
body{
    margin: 0;
    height: 100%;
    display: flex;
    justify-content: center;
    align-items: center;
    background-color: lightgray;
    padding-top: 50px;
}


#display{
    height: 50%;
    width: 100%;
    padding: 20px;
    font-size: 5rem;
    text-align:left;
    border: none;
    background-color: black;
    color: white
}

#Calculator{
    font-family: Arial, Helvetica, sans-serif;
    background-color: black;
    border-radius: 15px;
    overflow: hidden;
    max-width: 500px;
}

#Keys{
    display: grid;
    grid-template-columns: repeat(4,1fr);
    text-align: right;
    gap: 10px;
    row-gap: 5px;
    padding: 25px;
}
```

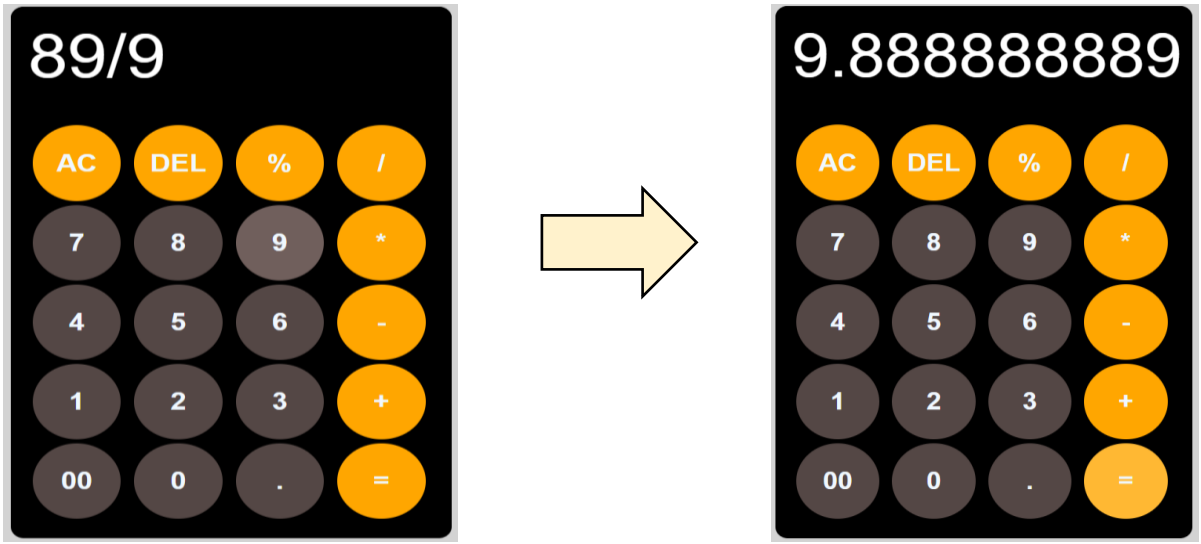
```
button{
    width: 100px;
    height: 100px;
    border-radius: 50px;
    border: none;
    background-color:hsl(10, 010%, 30%) ;
    color: aliceblue;
    font-size: 2rem;
    font-style: inherit;
    font-weight: bolder;
    cursor: pointer;
}

button:hover{
    background-color: hsl(10, 10%, 40%);
}

button:active{
    background-color: hsl(10, 10%, 50%);
}

.operations{
    background-color: hsl(39, 100%, 50%)
}

.operations:hover{
    background-color: hsl(39, 100%, 60%)
}

.operations:active{
    background-color: hsl(39, 100%, 70%)
}
```

❖ JavaScript

```
const display=document.getElementById('display');

function ToDisplay(input){
   display.value += input;
}

function ClearDisplay(){
   display.value="";
}

function Calculate(){
   try {
      let result = eval(display.value);
      if (typeof result === "number" && !Number.isInteger(result)) {
         let decimalPart = result.toString().split('.')[1];
         if (decimalPart && decimalPart.length > 9) {
            result = result.toFixed(9);
         }
      }
      display.value = result;
   } catch (error) {
      display.value = "error";
   }
}


function Delete(){
   display.value=display.value.slice(0,-1)
}
```

RESULT


2+2
AC DEL % /
7 8 9 *
4 5 6 -
1 2 3 +
00 0 . =
4
AC DEL % /
7 8 9 *
4 5 6 -
1 2 3 +
00 0 . =


89/9
AC DEL % /
7 8 9 *
4 5 6 -
1 2 3 +
00 0 . =
9.888888889
AC DEL % /
7 8 9 *
4 5 6 -
1 2 3 +
00 0 . =

*****