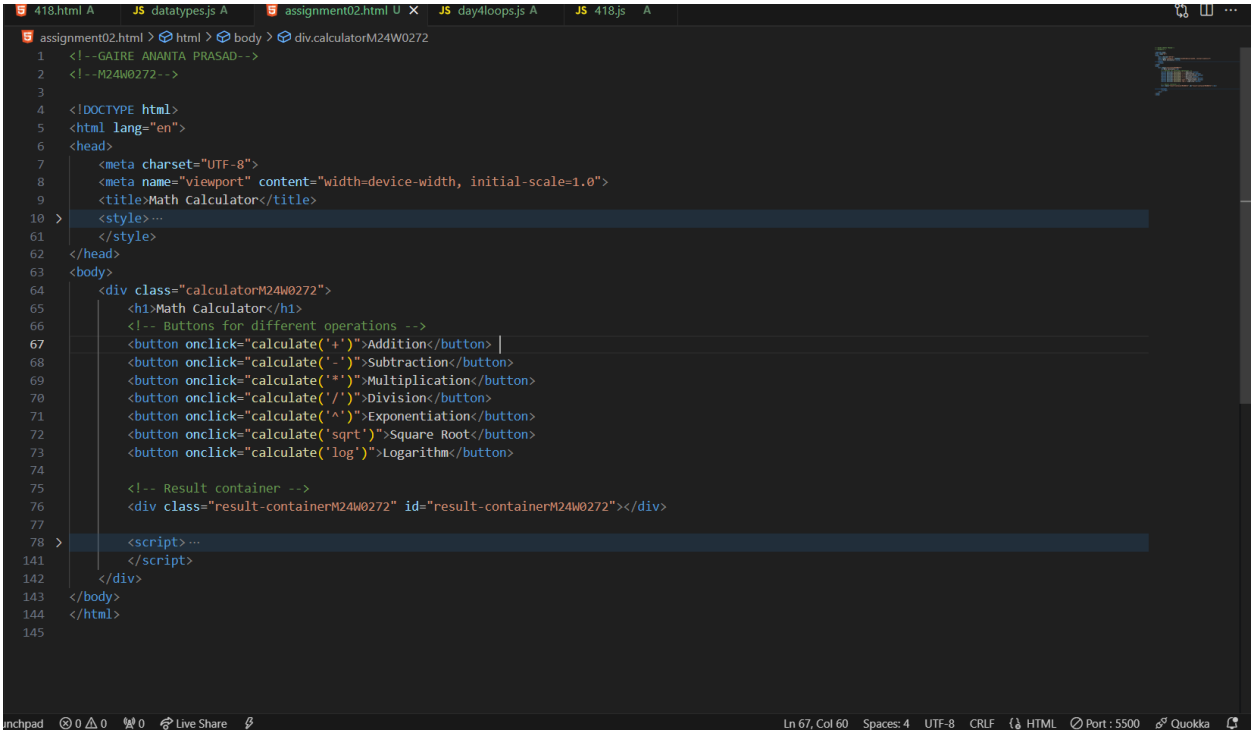
NAME: GAIRE ANANTA PRASAD

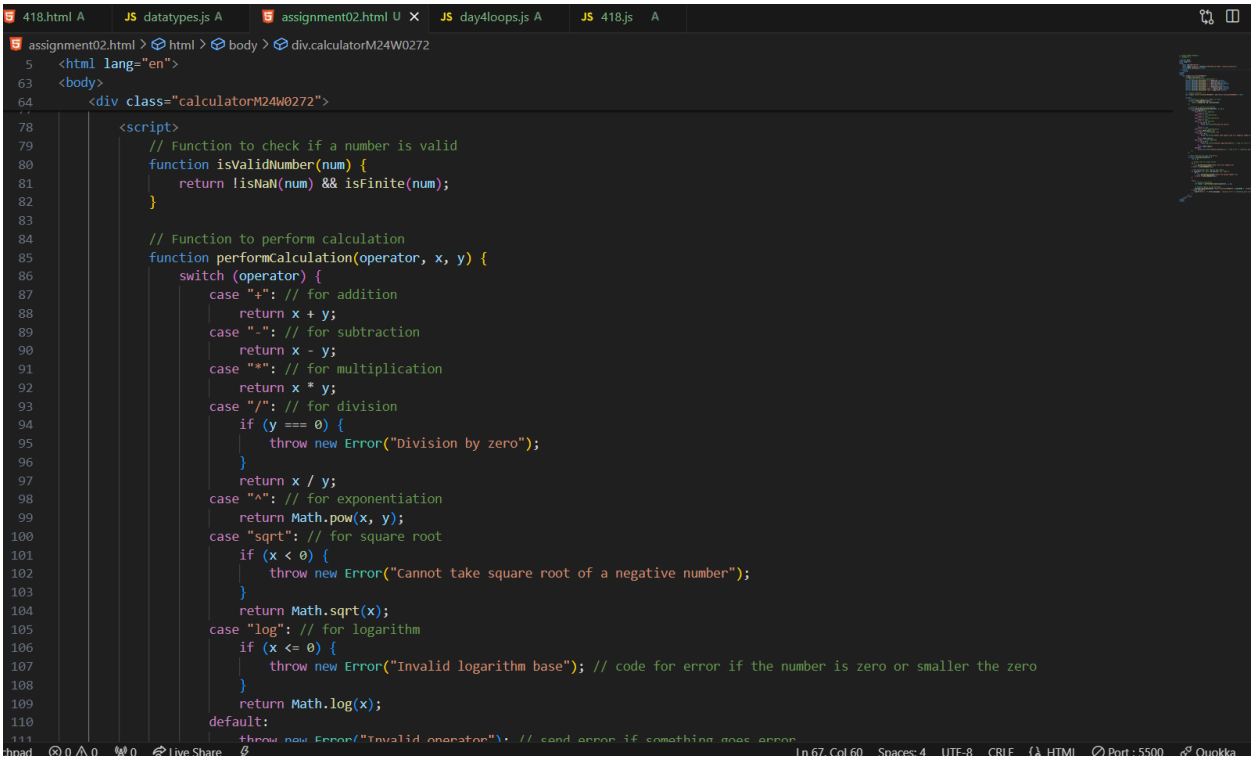
STUDENT ID: M24W0272

1. HTML5 code for Mathematical Operator

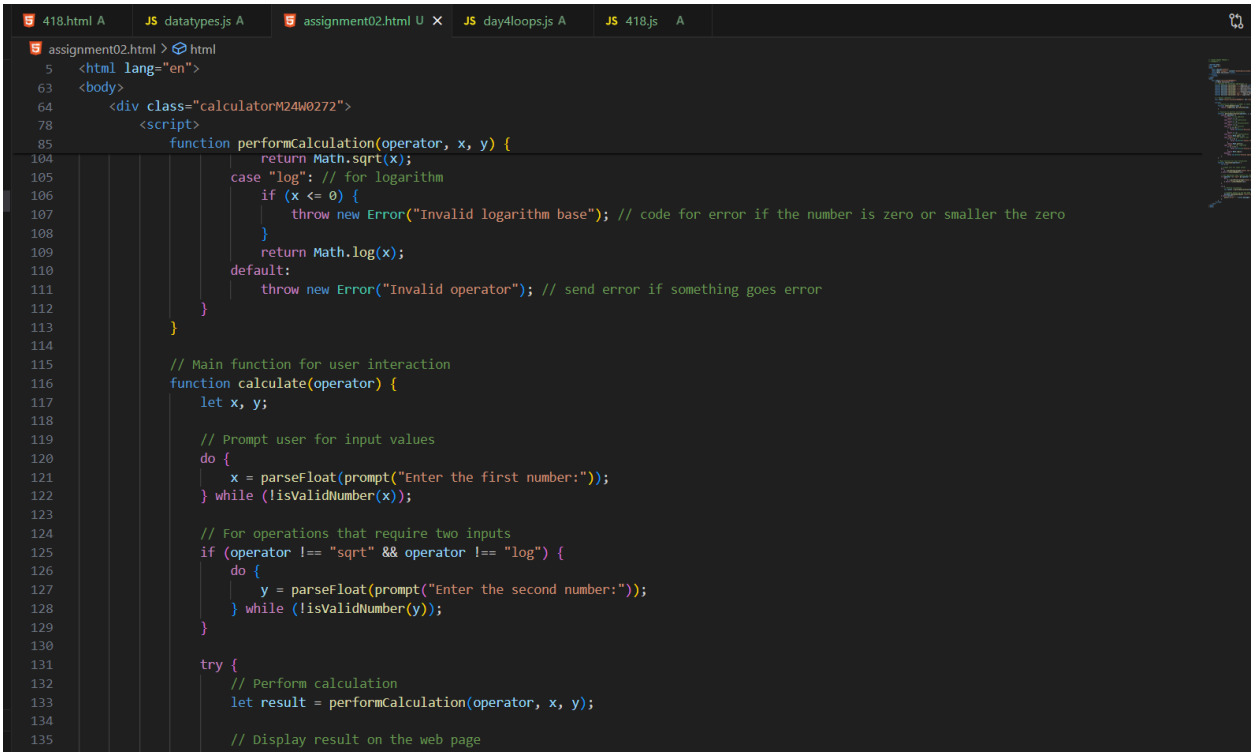


```
<!--GAIRE ANANTA PRASAD-->
<!--M24W0272-->

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Math Calculator</title>
    <style>···
    </style>
</head>
<body>
    <div class="calculatorM24W0272">
        <h1>Math Calculator</h1>
        <!-- Buttons for different operations -->
        <button onclick="calculate('+')">Addition</button>
        <button onclick="calculate('-')">Subtraction</button>
        <button onclick="calculate('*')">Multiplication</button>
        <button onclick="calculate('/')">Division</button>
        <button onclick="calculate('^')">Exponentiation</button>
        <button onclick="calculate('sqrt')">Square Root</button>
        <button onclick="calculate('log')">Logarithm</button>

        <!-- Result container -->
        <div class="result-containerM24W0272" id="result-containerM24W0272"></div>

        <script>···
        </script>
    </div>
</body>
</html>
```

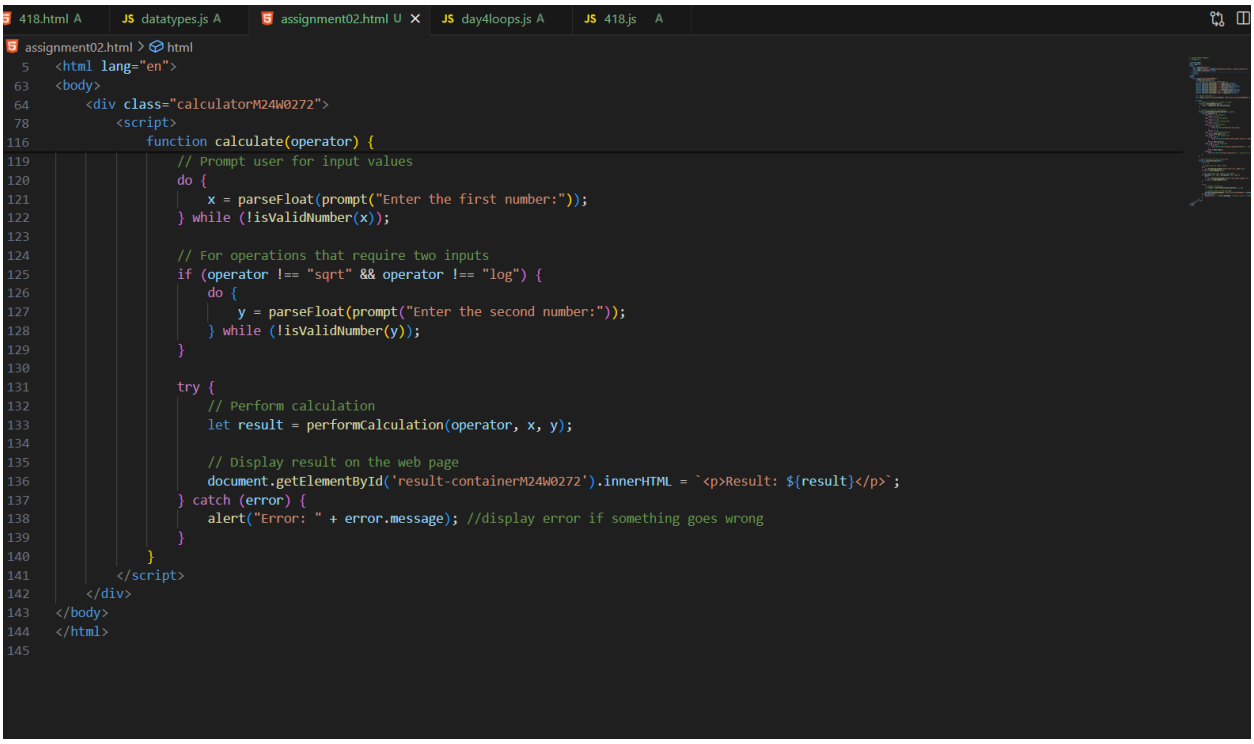
2. JAVASCRIPT code for Mathematical Operator



```
// Function to check if a number is valid
function isValidNumber(num) {
    return !isNaN(num) && isFinite(num);
}

// Function to perform calculation
function performCalculation(operator, x, y) {
    switch (operator) {
        case "+": // for addition
            return x + y;
        case "-": // for subtraction
            return x - y;
        case "*": // for multiplication
            return x * y;
        case "/": // for division
            if (y === 0) {
                throw new Error("Division by zero");
            }
            return x / y;
        case "^": // for exponentiation
            return Math.pow(x, y);
        case "sqrt": // for square root
            if (x < 0) {
                throw new Error("Cannot take square root of a negative number");
            }
            return Math.sqrt(x);
        case "log": // for logarithm
            if (x <= 0) {
                throw new Error("Invalid logarithm base"); // code for error if the number is zero or smaller the zero
            }
            return Math.log(x);
        default:
```



```
418.html A  datatypes.js A  assignment02.html U  day4loops.js A  418.js A
assignment02.html > html
  5  <html lang="en">
 63  <body>
 64      <div class="calculatorM24W0272">
 78          <script>
 85              function performCalculation(operator, x, y) {
104                      return Math.sqrt(x);
105                  case "log": // for logarithm
106                      if (x <= 0) {
107                          throw new Error("Invalid logarithm base"); // code for error if the number is zero or smaller the zero
108                      }
109                      return Math.log(x);
110                  default:
111                      throw new Error("Invalid operator"); // send error if something goes error
112              }
113          }
114
115          // Main function for user interaction
116          function calculate(operator) {
117              let x, y;
118
119              // Prompt user for input values
120              do {
121                  x = parseFloat(prompt("Enter the first number:"));
122              } while (!isValidNumber(x));
123
124              // For operations that require two inputs
125              if (operator !== "sqrt" && operator !== "log") {
126                  do {
127                      y = parseFloat(prompt("Enter the second number:"));
128                  } while (!isValidNumber(y));
129              }
130
131              try {
132                  // Perform calculation
133                  let result = performCalculation(operator, x, y);
134
135                  // Display result on the web page
```



```
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assignment02.html > html
  5  <html lang="en">
 63  <body>
 64      <div class="calculatorM24W0272">
 78          <script>
116              function calculate(operator) {
119                  // Prompt user for input values
120                  do {
121                      x = parseFloat(prompt("Enter the first number:"));
122                  } while (!isValidNumber(x));
123
124                  // For operations that require two inputs
125                  if (operator !== "sqrt" && operator !== "log") {
126                      do {
127                          y = parseFloat(prompt("Enter the second number:"));
128                      } while (!isValidNumber(y));
129                  }
130
131                  try {
132                      // Perform calculation
133                      let result = performCalculation(operator, x, y);
134
135                      // Display result on the web page
136                      document.getElementById('result-containerM24W0272').innerHTML = `<p>Result: ${result}</p>`;
137                  } catch (error) {
138                      alert("Error: " + error.message); //display error if something goes wrong
139                  }
140              }
141          </script>
142      </div>
143  </body>
144  </html>
145
```

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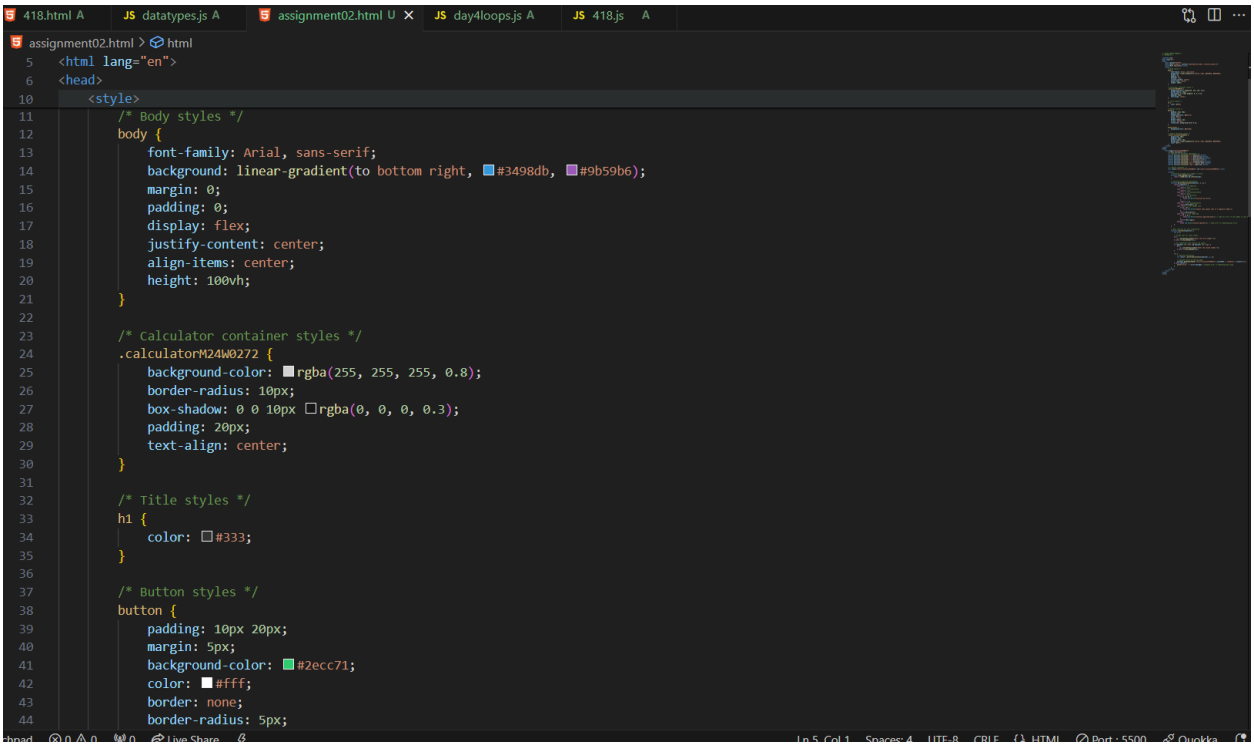
3. CSS for Mathematical Operator

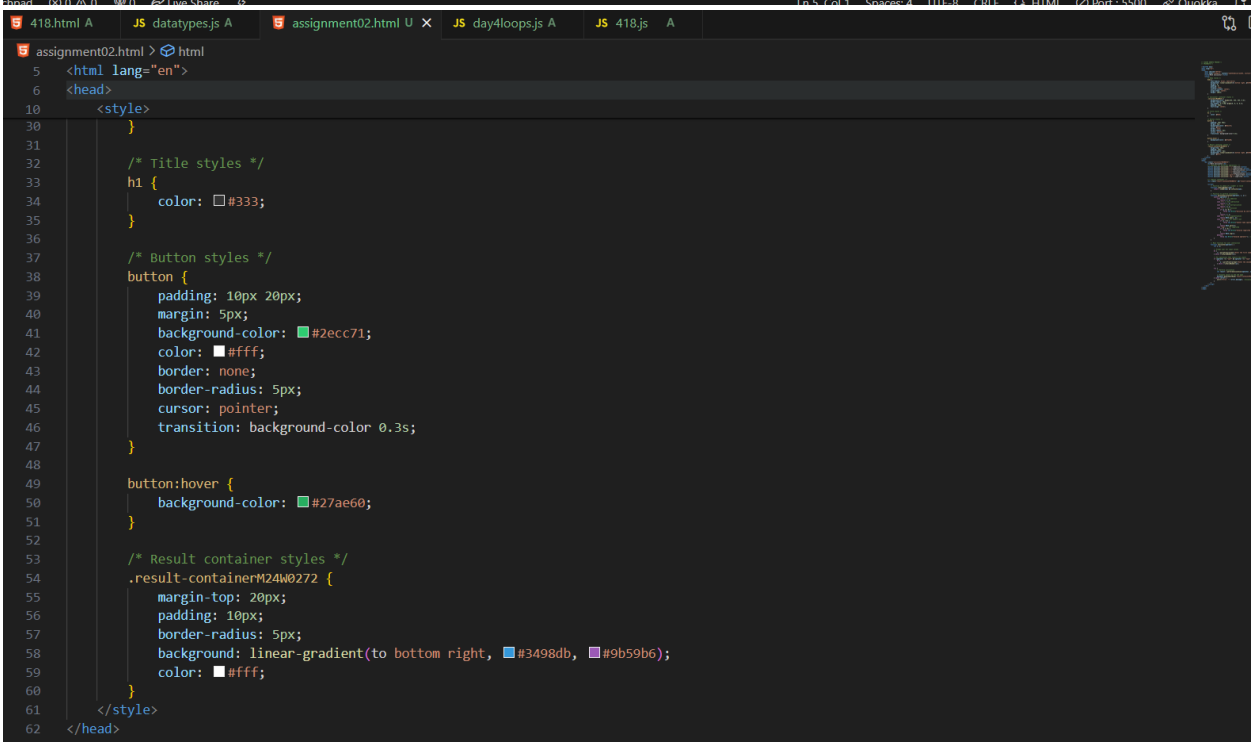


```
<html lang="en">
<head>
    <style>
        /* Body styles */
        body {
            font-family: Arial, sans-serif;
            background: linear-gradient(to bottom right, #3498db, #9b59b6);
            margin: 0;
            padding: 0;
            display: flex;
            justify-content: center;
            align-items: center;
            height: 100vh;
        }

        /* Calculator container styles */
        .calculatorM24W0272 {
            background-color: rgba(255, 255, 255, 0.8);
            border-radius: 10px;
            box-shadow: 0 0 10px rgba(0, 0, 0, 0.3);
            padding: 20px;
            text-align: center;
        }

        /* Title styles */
        h1 {
            color: #333;
        }

        /* Button styles */
        button {
            padding: 10px 20px;
            margin: 5px;
            background-color: #2ecc71;
            color: #fff;
            border: none;
            border-radius: 5px;
```



```
<html lang="en">
<head>
    <style>
        }

        /* Title styles */
        h1 {
            color: #333;
        }

        /* Button styles */
        button {
            padding: 10px 20px;
            margin: 5px;
            background-color: #2ecc71;
            color: #fff;
            border: none;
            border-radius: 5px;
            cursor: pointer;
            transition: background-color 0.3s;
        }

        button:hover {
            background-color: #27ae60;
        }

        /* Result container styles */
        .result-containerM24W0272 {
            margin-top: 20px;
            padding: 10px;
            border-radius: 5px;
            background: linear-gradient(to bottom right, #3498db, #9b59b6);
            color: #fff;
        }
    </style>
</head>
```

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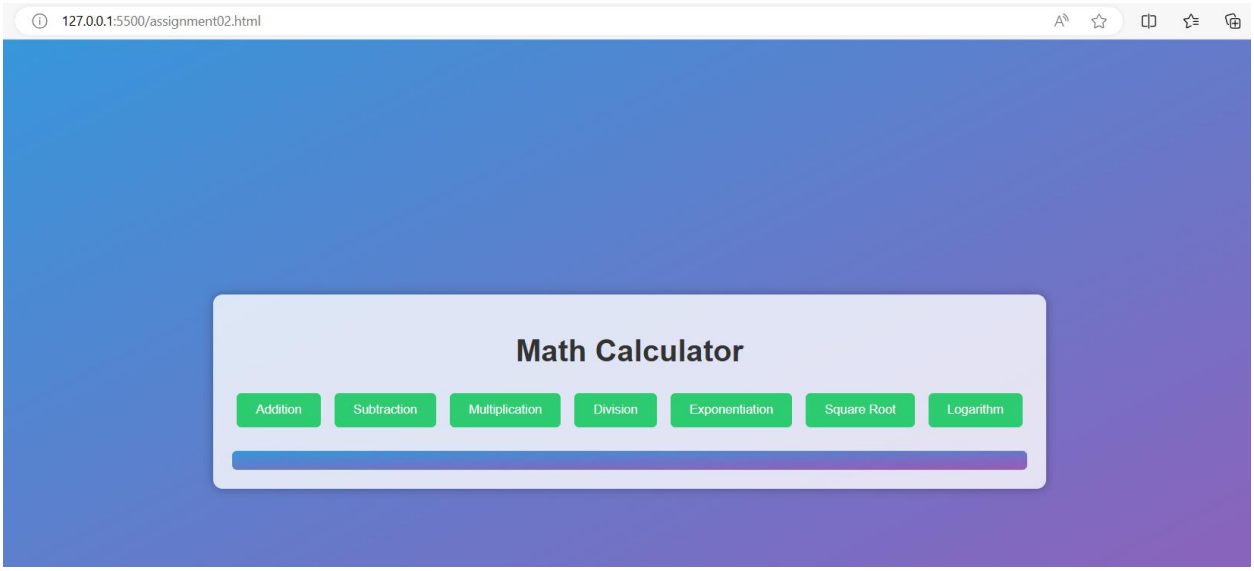
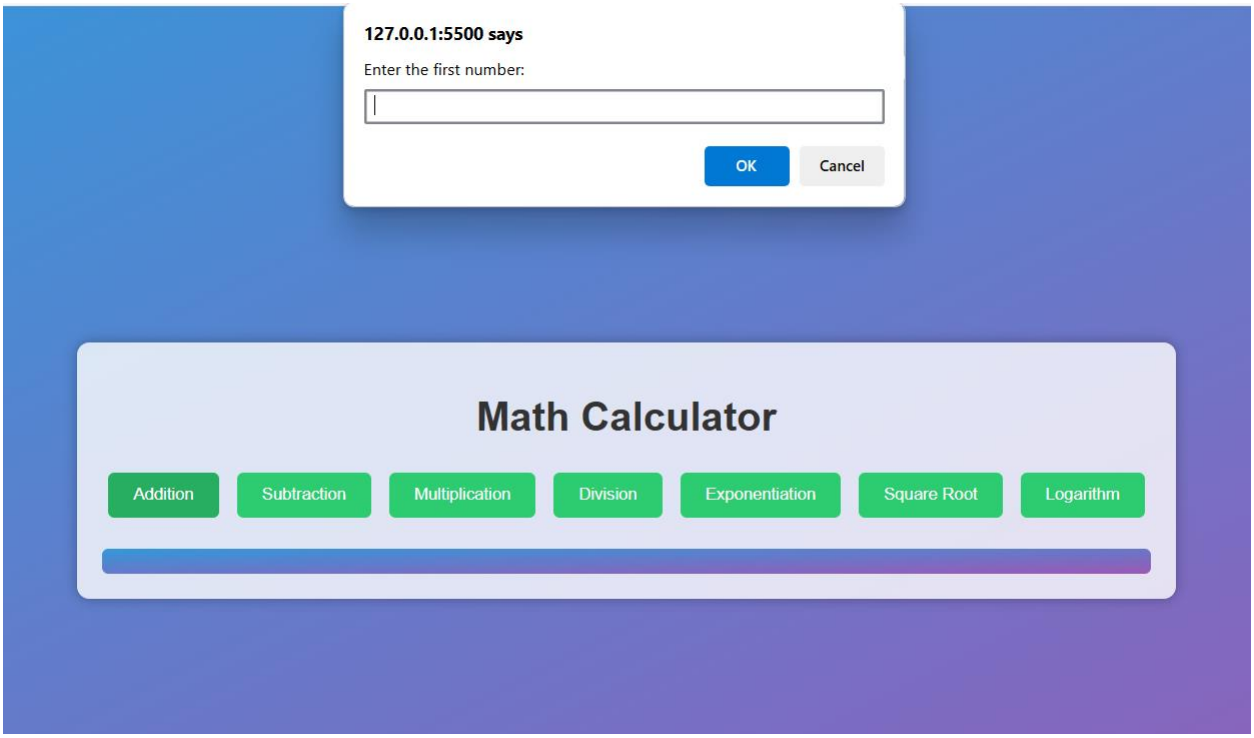
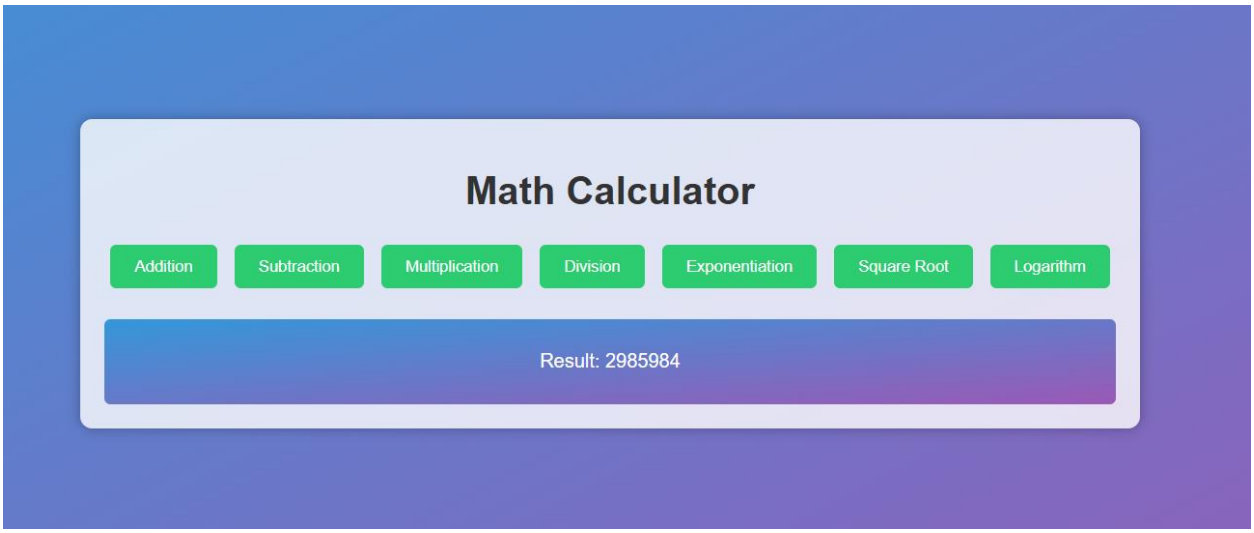
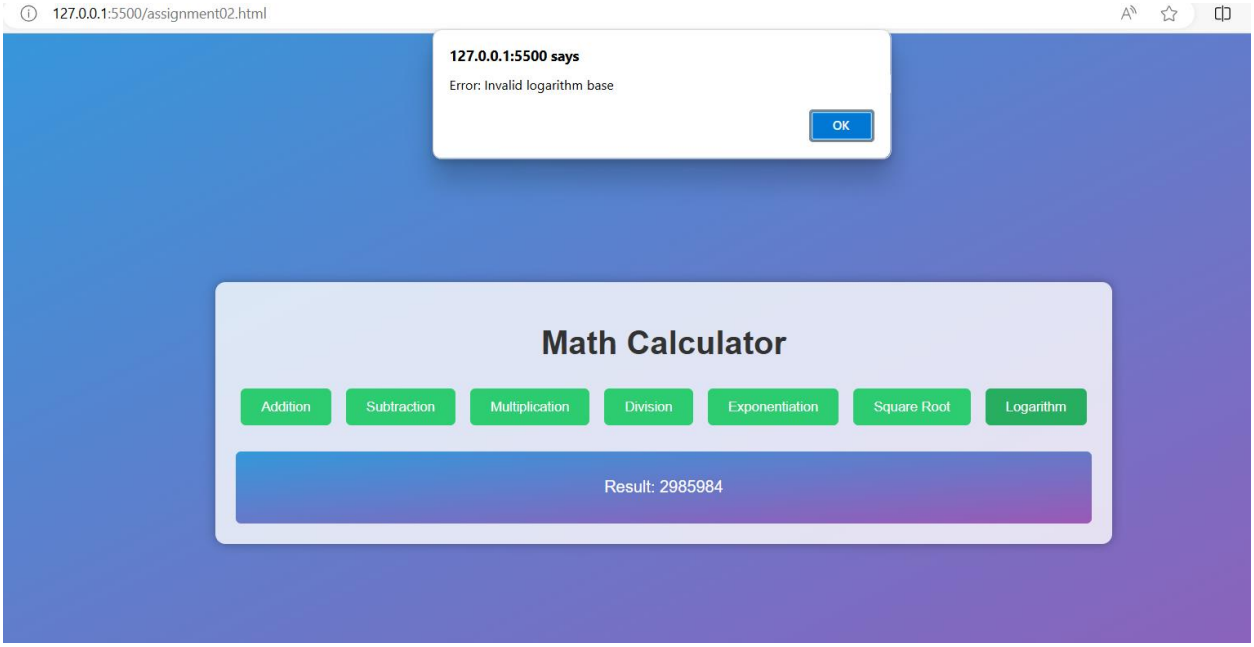
4. Output for Mathematical Operator.







5. Showing error while condition is not matched.



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