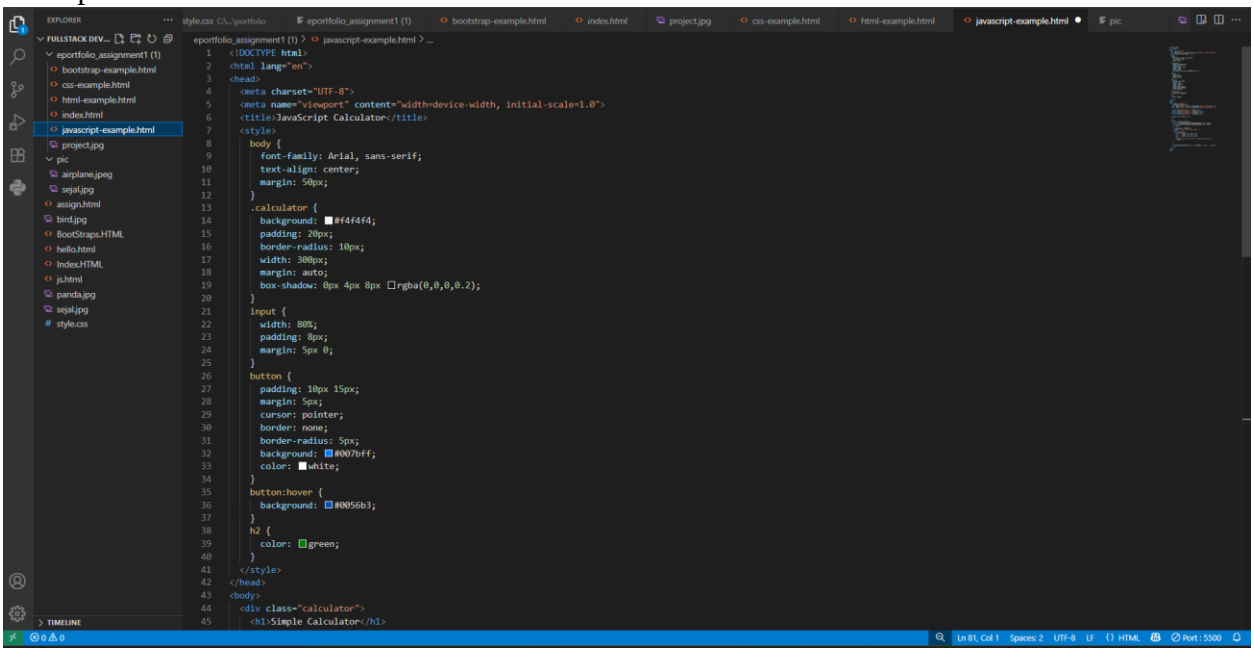
Java-script

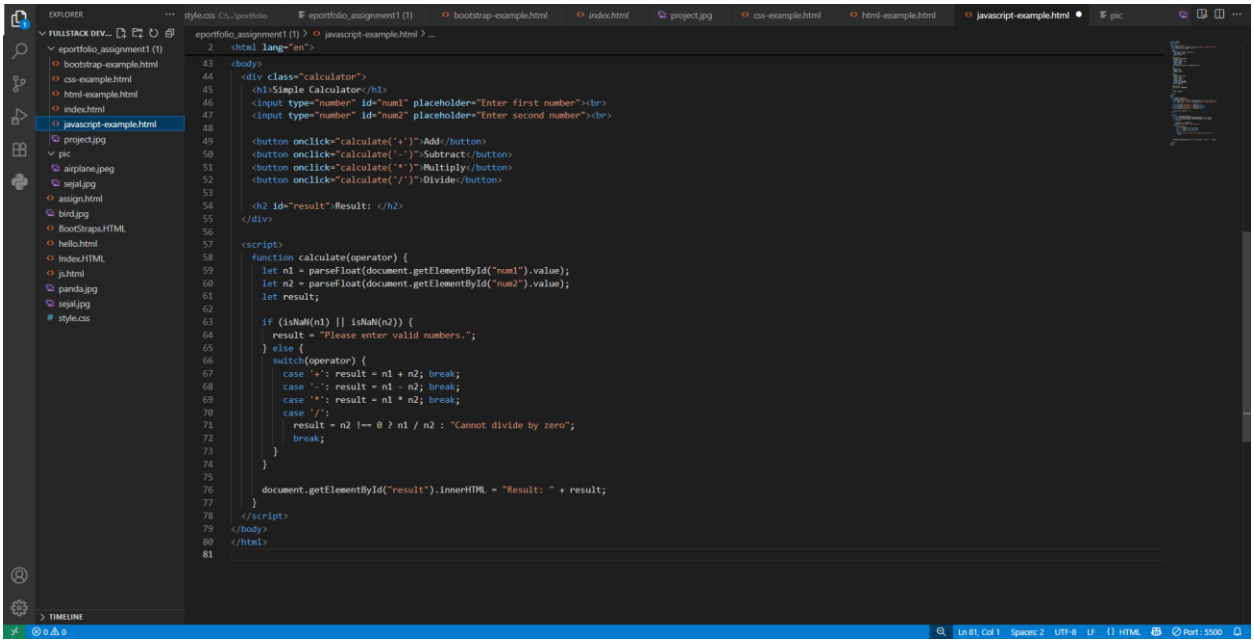
JavaScript is a lightweight, event-based & high-level object-orientated programming language that is mostly applied to make web pages lively & dynamic.

- Client-side Language: It runs client-side, which gives programmers options of using it to build responsive & interfaces.
- Flexible: Can be used to validate forms, provide animations, event handle (e.g., hit & drag an object), & update the content without reloading the page.
- Interpreted Language: Compilation is not needed; browsers interpret & perform it.
- Object Orientated & Event-Driven: Objects, functions & events are supported, which gives it an expansive nature in relation to programming approaches.
- Cross-Platform: Browser independent & compatible on all platforms.
- Added Functionality: JavaScript also works with back-end development, databases, APIs & even desktop/mobile applications with environments such as Node.js.

JavaScript is the language that powers interactivity & logic on the web, making static HTML & CSS pages dynamic.

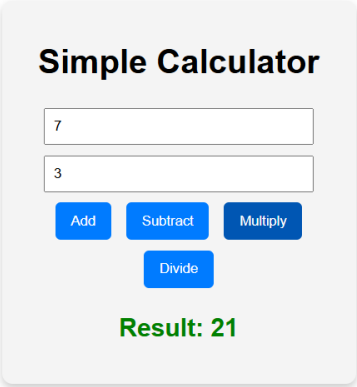
Example:





```
<html lang="en">
<body>
  <div class="calculator">
    <h1>Simple Calculator</h1>
    <input type="number" id="num1" placeholder="Enter first number"><br>
    <input type="number" id="num2" placeholder="Enter second number"><br>

    <button onclick="calculate('+')">Add</button>
    <button onclick="calculate('-')">Subtract</button>
    <button onclick="calculate('*')">Multiply</button>
    <button onclick="calculate('/')">Divide</button>

    <h2 id="result">Result: </h2>
  </div>

  <script>
    function calculate(operator) {
      let n1 = parseFloat(document.getElementById("num1").value);
      let n2 = parseFloat(document.getElementById("num2").value);
      let result;

      if (isNaN(n1) || isNaN(n2)) {
        result = "Please enter valid numbers.";
      } else {
        switch(operator) {
          case '+': result = n1 + n2; break;
          case '-': result = n1 - n2; break;
          case '*': result = n1 * n2; break;
          case '/':
            result = n2 !== 0 ? n1 / n2 : "Cannot divide by zero";
            break;
        }
      }

      document.getElementById("result").innerHTML = "Result: " + result;
    }
  </script>
</body>
</html>
```

Output:



This example shows how the use of the java scripting language can be used to put interactivity in a web page. Here the result is dynamic. It changes immediately when you click any button based on the numbers you entered.

Citation:

MDN web Docs (n.d.) JavaScript Guide. Mozilla. Available at: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide