

BASIC WEB-DEV TUTORIAL

By Edith @CSClub IIITDM

SESSION 2

JavaScript (JS)



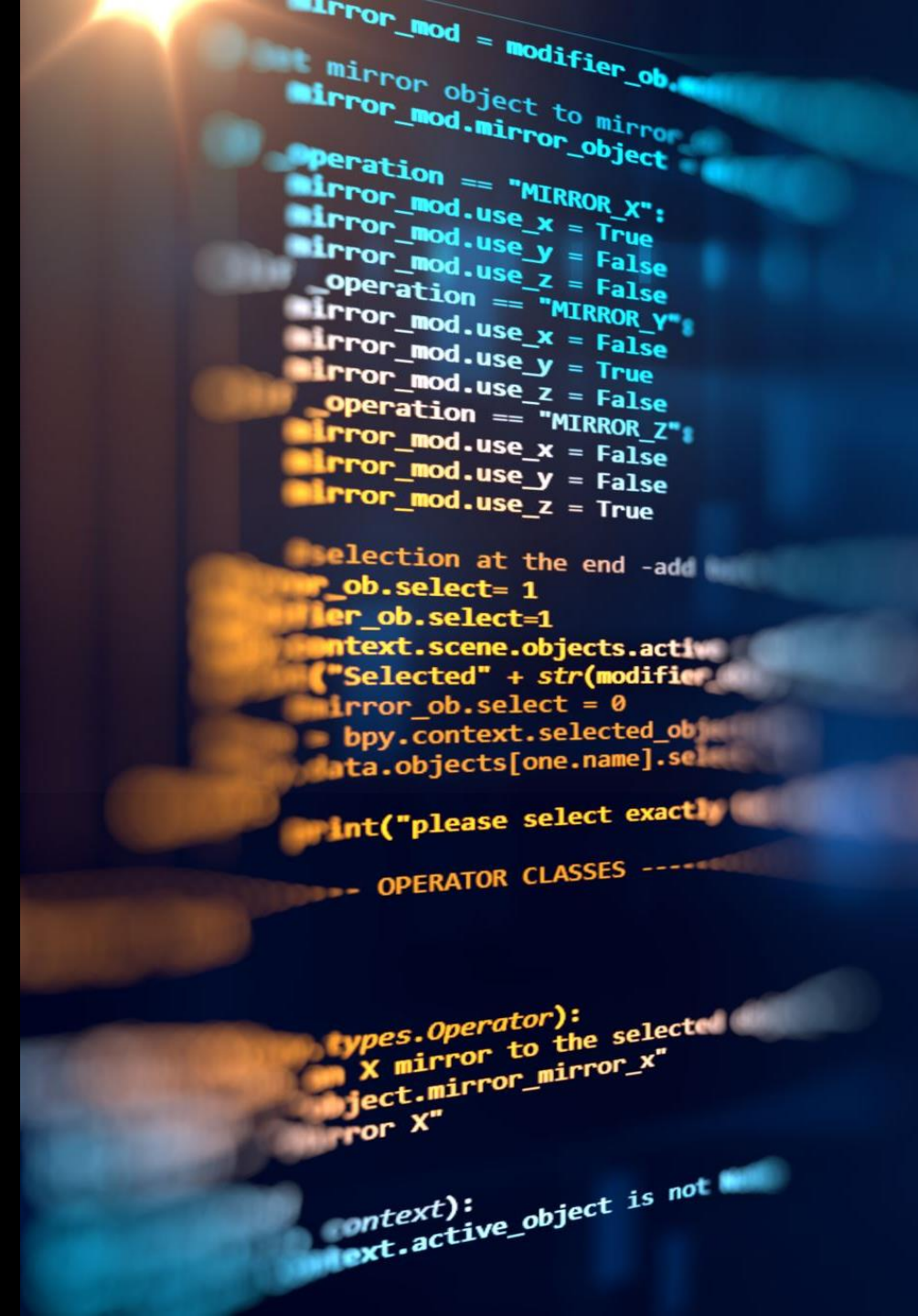
INTRODUCTION

- What is JavaScript?

=> JavaScript is a **Scripting** Language mostly used for client-side web development

=> JavaScript is an Implementation of ECMAScript Standards.

(ECMA Stands for European Computer Manufacturers Association)

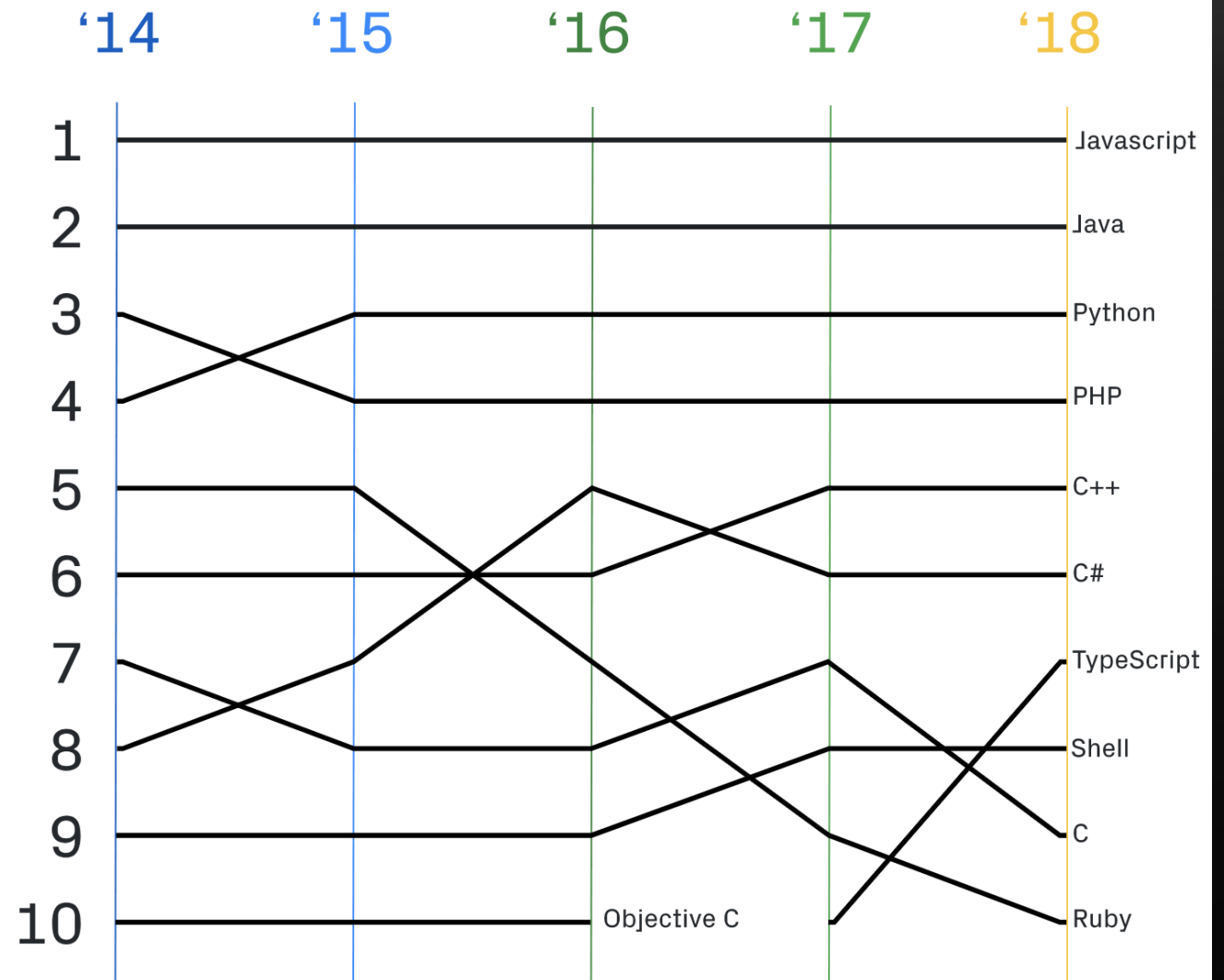


WHY TO LEARN JAVASCRIPT?

Top languages over time

You're coding on GitHub in hundreds of programming languages, but JavaScript still has the most contributors in public and private repositories, organizations of all sizes, and every region of the world.

This year, TypeScript shot up to #7 among top languages used on the platform overall, after making its way in the top 10 for the first time last year. TypeScript is now in the top 10 most used languages across all regions GitHub contributors come from—and across private, public, and open source repositories. *



GETTING STARTED

JavaScript ("JS" for short) is a full-fledged dynamic programming language that can add interactivity to a website. It was invented by Brendan Eich (co-founder of the Mozilla project, the Mozilla Foundation, and the Mozilla Corporation).

JavaScript is versatile and beginner-friendly. With more experience, you'll be able to create games, animated 2D and 3D graphics, comprehensive database-driven apps, and much more!

JavaScript itself is relatively compact, yet very flexible. Developers have written a variety of tools on top of the core JavaScript language, unlocking a vast amount of functionality with minimum effort. These include:

GETTING STARTED

- Browser Application Programming Interfaces (**APIs**) built into web browsers, providing functionality such as dynamically creating HTML and setting CSS styles; collecting and manipulating a video stream from a user's webcam, or generating 3D graphics and audio samples.
- Third-party APIs that allow developers to incorporate functionality in sites from other content providers, such as Twitter or Facebook.
- Third-party frameworks and libraries that you can apply to HTML to accelerate the work of building sites and applications.
- And much more.

GETTING STARTED

All You need is:

➤ A Browser

- Google Chrome, Mozilla Firefox, for testing
- Mozilla Firefox for developers, Polypane, Opera, Blisk, Google chrome for developers, Safari for Developers.

➤ A Text Editor.

- Sublime Text3, VS Code, Brackets, Atom, Vim, Notepad.

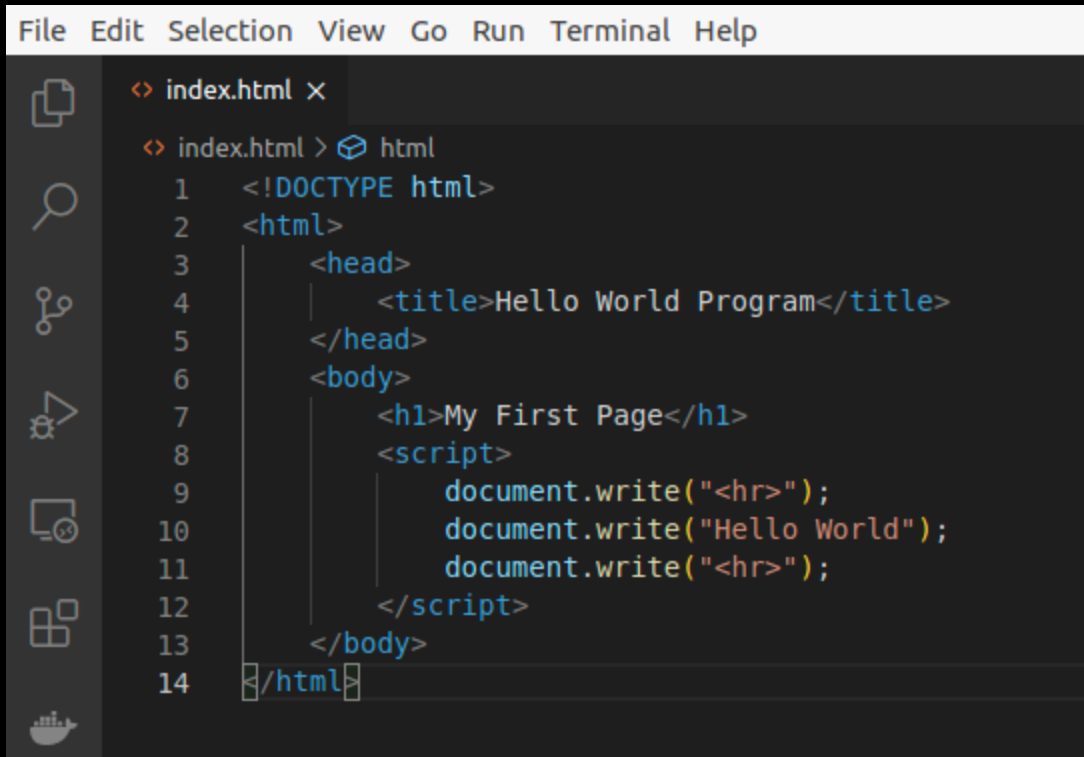
➤ References from internet.

- [W3schools](#) , [MDN Web Docs](#) , [Codeacedemy](#) , etc

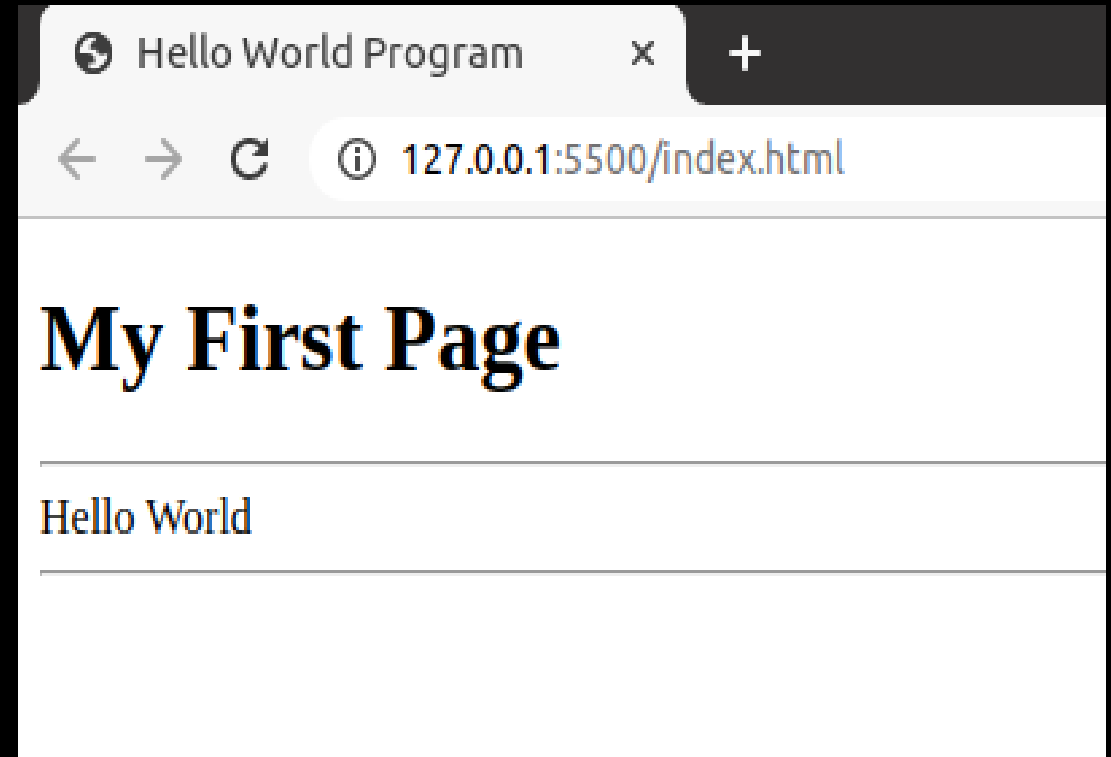
➤ Some Motivation.

- IDK get it from somewhere.

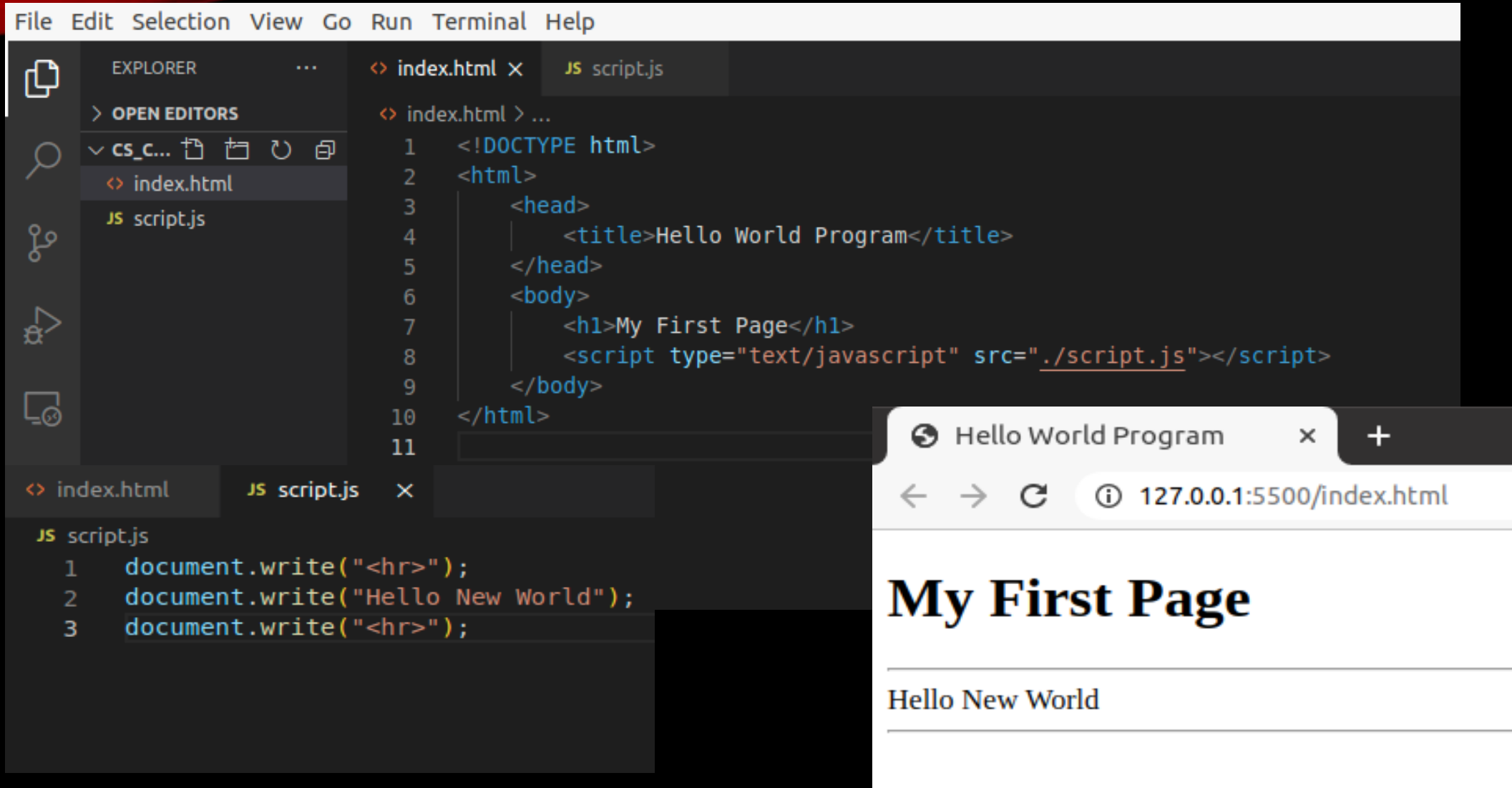
HELLO WORLD USING JAVASCRIPT



```
File Edit Selection View Go Run Terminal Help
<> index.html x
<> index.html > html
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Hello World Program</title>
5      </head>
6      <body>
7          <h1>My First Page</h1>
8          <script>
9              document.write("<hr>");
10             document.write("Hello World");
11             document.write("<hr>");
12         </script>
13     </body>
14 </html>
```



HELLO WORLD USING JAVASCRIPT



The image shows a Visual Studio Code editor window with two files open: `index.html` and `script.js`. The `index.html` file contains the following HTML code:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Hello World Program</title>
  </head>
  <body>
    <h1>My First Page</h1>
    <script type="text/javascript" src="./script.js"></script>
  </body>
</html>
```

The `script.js` file contains the following JavaScript code:

```
1 document.write("<hr>");
2 document.write("Hello New World");
3 document.write("<hr>");
```

To the right of the editor, a web browser window is open, displaying the rendered output of the program. The browser's address bar shows the URL `127.0.0.1:5500/index.html`. The page content is:

My First Page

Hello New World



EMBEDDING JAVASCRIPT

- As Scripts are interpreted in the browser in the order it appears.

So, it does matter where you place your **script** tag.

- But what if the browser doesn't support JavaScript?
- => Then you can just hide it.
- Let's See how do we do that in the next slide.

HIDING JAVASCRIPT FROM INCOMPATIBLE BROWSERS

<> index.html x JS script.js

<> index.html > ...

```
1  <!DOCTYPE html>
2  <html>
3    <head>
4      <title>Hello World Program</title>
5    </head>
6    <body>
7      <h1>My First Page</h1>
8      <script type="text/javascript">
9        document.writeln("Hello, Your Browser supports JavaScript");
10     </script>
11     <noscript>
12       Your Browser Does not support JavaScript
13     </noscript>
14   </body>
15 </html>
16
```

Hello World Program x +

← → ↻ ⓘ 127.0.0.1:5500/index.html

My First Page

Hello, Your Browser supports JavaScript

Hello World Program x +

← → ↻ ⓘ 127.0.0.1:5500/index.html

My First Page

Your Browser Does not support JavaScript

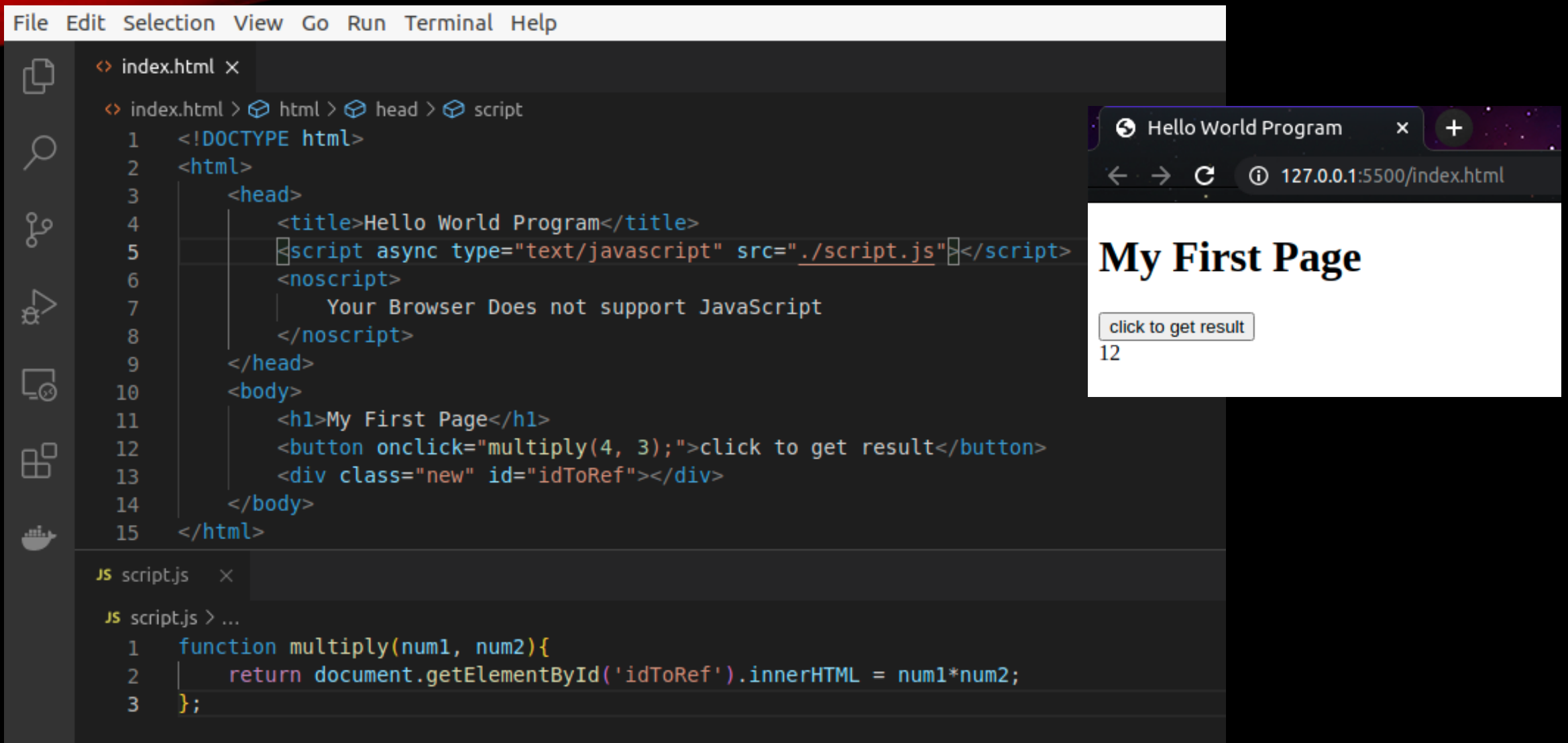
ALERT();, CONFIRM();, AND PROMPT();

The image shows a web browser window with a dark theme. The address bar shows the URL `127.0.0.1:5500`. The page content is a simple HTML document with a title "Hello World Program" and a body containing the text "My First Page". Below the text, there is a JavaScript code snippet that uses `alert()`, `confirm()`, and `prompt()` functions. The code is as follows:

```
1 alert("This is how alert works!");
2 confirm("Are you Sure?");
3 prompt("What is your name?");
```

Three dialog boxes are shown, each with the title "127.0.0.1:5500 says". The first dialog box is an alert box with the message "This is how alert works!". The second dialog box is a confirm box with the message "Are you Sure?". The third dialog box is a prompt box with the message "What is your name?". The prompt box has a text input field containing the name "Vijay".

FUNCTIONS IN JAVASCRIPT



The image shows a development environment with a code editor and a web browser. The code editor displays an HTML file named `index.html` and a JavaScript file named `script.js`.

index.html

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Hello World Program</title>
5     <script async type="text/javascript" src="../script.js"></script>
6     <noscript>
7       Your Browser Does not support JavaScript
8     </noscript>
9   </head>
10  <body>
11    <h1>My First Page</h1>
12    <button onclick="multiply(4, 3);">click to get result</button>
13    <div class="new" id="idToRef"></div>
14  </body>
15 </html>
```

script.js

```
1 function multiply(num1, num2){
2   return document.getElementById('idToRef').innerHTML = num1*num2;
3 };
```

The web browser shows the rendered page titled "Hello World Program" at the address `127.0.0.1:5500/index.html`. The page content includes the heading "My First Page", a button labeled "click to get result", and the number "12" displayed below the button.

LET'S BEGIN WITH HANDS ON PRACTICAL

- Write a Calculator Program in JavaScript.
- Download the required html files from my GitHub repository from this link if you want the code locally on your computer.
 - https://github.com/VijayMeena701/CSClub_Sessions
- Follow me along to complete the code.
- Create a Toggle button for menu bar.
- Next, we'll see how to make a slide show of images with JavaScript.