M01 - Introduction

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My First Web Application

My First Web Application

1. The script tag
2. Comments
3. Logging and Interaction
4. Hello World!

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1. The script tag

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1. The script tag

- Let's talk about JavaScript, the language itself.
- First we need a working environment to run our scripts:
  - server-side environments (like Node.js), you execute the script in a command like "node my.js".
  - client-side environments (like a browser), we usually embed JS scripts within a HTML page

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1. The script tag

- The tag <script>
  - To add JavaScript code to a page

```
<body>
    <h1>This is an example of the script tag!</h1>
    <script>
        console.log('Hello JS!');
    </script>
</body>
```

  - The <script> tag contains JavaScript code which is automatically executed when the browser processes the tag

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1. The script tag

- The tag <script>
  - If we have a lot of JavaScript code, we can put it into a separate file
  - Script files are attached to HTML with the src attribute:

```
9   <body>
10      <h1>This is an example of the script tag!</h1>
11      <script src="index.js"></script>
12  </body>
```

Reference to an external script file
(relative path)

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1. The script tag

- Best practices
  - As a rule, only the simplest scripts are put into HTML. More complex ones reside in separate files.
  - The benefit of a separate file is the browser will download it and store it in its cache.
  - Other pages that reference the same script will take it from the cache instead of downloading it, so the file is actually downloaded only once.
  - That reduces traffic and makes pages faster.

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2. Comments

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2. Comments

- As time goes on, programs become more and more complex. It becomes necessary to add comments which describe what the code does and why.
- Comments can be put into any place of a script. They don't affect its execution because the engine simply ignores them.
- One-line comments start with two forward slash characters //

```
// This is a comment
console.log('Hi world!');

console.log('Hi JS!'); // This is another comment
```

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2. Comments

- Multiline comments
  - start with a forward slash and an asterisk /*
  - end with an asterisk and a forward slash */.

```
/*
This is a comment
in two lines
*/
console.log('Hi world!');
```

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2. Comments

- In VSC use hotkeys to comment your code
  - For one line: CTRL+ ~
  - For multiple lines: SHIFT+ALT+A

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2. Comments

- VS Code supports the specification JSDoc and uses annotations to deliver a more advance Intellisense
- You can create more quickly JSDoc comments to functions as:
  - type /** before the function declaration
  - select the suggestion of the snippet of the JSDoc comment

```
/**
 * Função para somar dois números
 * @param {number} a primeiro operando
 * @param {number} b segundo operando
 * @returns {number} resultado da soma dos dois operandos
 */
function add(a, b) {
  return a + b;
}
```

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2. Comments

```
/**
 * Função para somar dois números
 * @param {number} a primeiro operando
 * @param {number} b segundo op
 * @returns {number} resultado
 */
function add(a, b) {
  return a + b;
}
```

```
* Função para somar dois numeros
fu
}
```

add
addEventListener
addEventListener
AudioDestinationNode
Audio
AudioBuffer
AudioBufferSourceNode
AudioContext
AudioListener
AudioNode
AudioParam
AudioParamMap

ad

```
function add(a: number, b: number): nu
mber
```

Função para somar dois números

@param `a` — primeiro operando

@param `b` — segundo operando

@returns — resultado da soma dos dois operandos

Documentation

Intellisense

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3. Logging and Interaction

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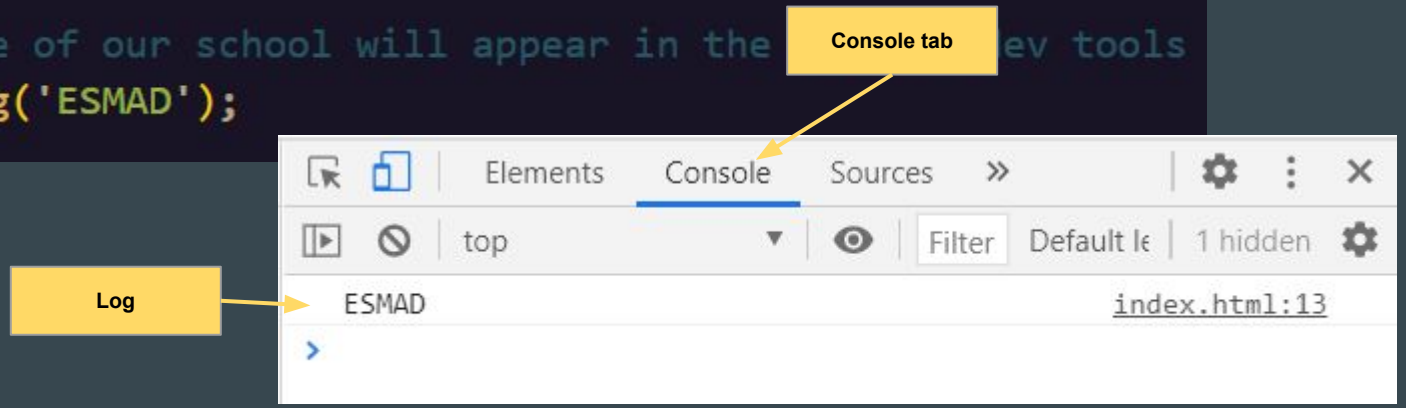
3. Logging and Interaction

- Logging
  - To output something to console from our code, there's console.log function.
  - Next example outputs the name ESMAD in the console tab of the Chrome DevTools:

```
// The name of our school will appear in the dev tools
console.log('ESMAD');
```



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3. Logging and Interaction

- Interaction
  - Important browser functions for user interaction:
  - Functions alert, prompt and confirm
  - Alert
    - shows a message
  - Prompt
    - shows a message asking the user to enter text
    - returns the text or, if the Cancel or Esc buttons are clicked, returns null
  - Confirm
    - shows a message and expects the user to press Ok or Cancel
    - returns true for OK and false for Cancel or Esc

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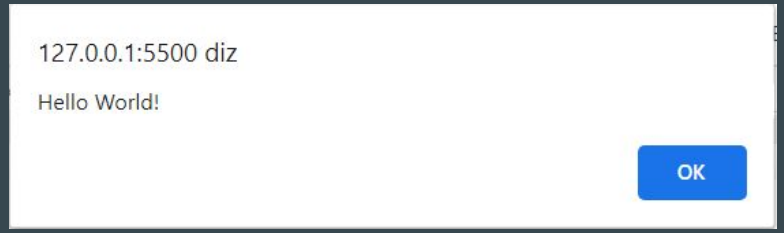
3. Logging and Interaction

- alert(message)
  - shows a message (message)
  - pauses script execution until the user presses OK

```
alert('Hello World!');
```



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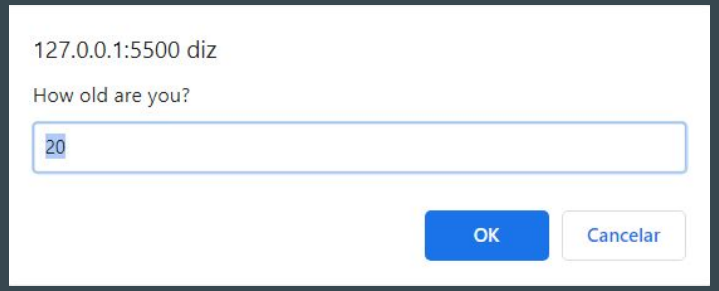

3. Logging and Interaction

- prompt(title[,default])
  - Shows a modal window with text message, input field and OK/Cancel buttons
  - Two parameters:
    - title - the text to show to the user
    - default - an optional second parameter, the initial value of the input field
  - The user can:
    - type something in the input field and press OK
    - cancel the entry by pressing the Cancel button or the ESC key
  - The function returns the text of the entry field or null if the entry was canceled

```
let age = prompt("How old are you?", 20);
alert(`You are ${age} years!`); // You are 20 years!
```

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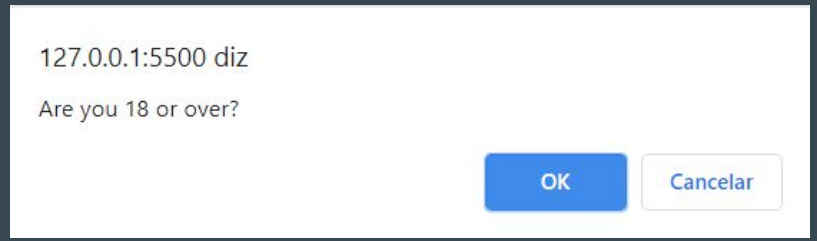
3. Logging and Interaction

- confirm(question)
  - Shows a modal window with a question and two buttons: OK and Cancel
  - The result is true if OK is pressed and false otherwise

```
let over18 = confirm("Are you 18 or over?");
alert(over18); // true if OK button is pressed, false otherwise
```



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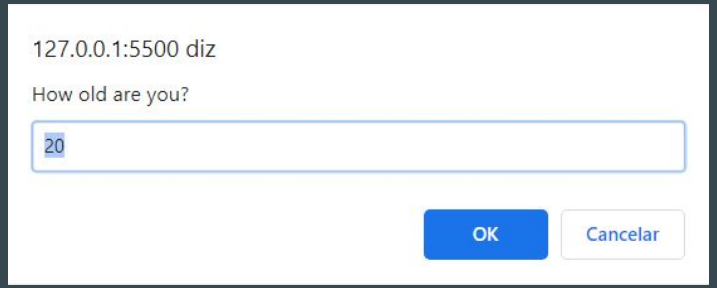
3. Logging and Interaction

- Interaction
  - All of these functions display modal windows: they stop the script from running and do not allow the visitor to interact with the page until the window is discarded
  - There are two limitations shared by all of the above functions:
    - The exact location of the window is defined by the browser. Usually, in the center.
    - The exact appearance also depends on the browser. We cannot change it.



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4. Hello World!

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4. Hello World

- Challenge
  - Create an app Hello World using HTML and JavaScript
  - The message should appear in the console of the browser
- Tasks:
  - Create a folder myFirstApp
  - Open VSC
  - Open folder created previously
  - Create a file index.html
  - Put a tag <script> and inside, a console.log statement that logs “Hello World!”
  - Open the file in a browser through Live Server