JavaScript specifications

Introduction

Lexicon

NAME	DESCRIPTION	USAGE
ECMASCRIPT	Standard JS implementation.	Default language in all web browsers.
IMMUTABLE	Its value can't be changed.	

Behind the scenes

V8

V8 is an engine in web browsers that converts your JS code into machine code, with JIT (just-in-time compilation).

Create a JS file

Create a file with .js extension or write JavaScript directly in your html file with the <script> tag. To reference a JS file in a html file, reference your JS file in the html <script src="path-toJS-file"> tag.

Basics

Console

The log function creates logs in the web browser dev tools tab.

```
console.log('hi mom!');
```

Variable types

NAME	DESCRIPTION
VAR	Declares a variable with any type.
LET	Declares a variable with a unique name in the same function, class or loop.
CONST	The same as LET but the value is immutable.

Primitive data types

Primitive data types can be found here.

NAME
STRING
NUMBER
BIGINT
BOOLEAN
UNDEFINED
SYMBOL
NULL

Prototypes

Objects can inherit properties rom each other with the prototype chain mechanism.

Every object has a private property hat links to exactly one prototype.

Built-in data structures

Set

A set holds a collection of unique items.

Map

Holds a key-valued pair but can be more easily looped over, and more features.

All the properties will always be referenced and not garbage collected.

Event loops

Make writing asynchronous code possible.

Callbacks

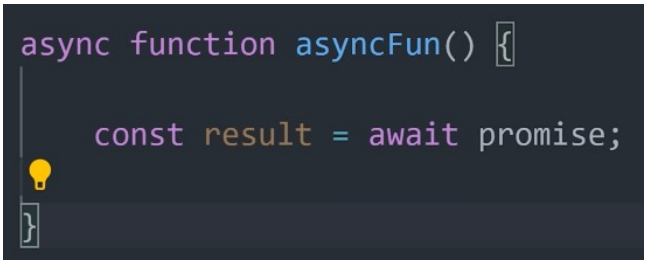
Callback functions are an example of async events.

Promise

A promise is a wrapper for a value that's unknown right now, but that will resolve to a value in the future.

Async function

Async function return a promise.



Modules

Allow us to share pieces of codes from one file to another.

```
export default function helper() {
    console.log('help me, help you');
}
```

```
import helpfulFun from './help.js';
```

NPM

Nodes packet manager, we can download modules from it.

DOM interactions

To interact with the DOM, we can use the document object.

```
window.document
```

CSS selector

It returns an instance of the element class.

```
const btn = document.querySelector('.button')
const allBtns = document.querySelectorAll('.button')
```

```
btn.addEventListener('click', () => {
    console.log('clicked');

});
```

Module Bundler

A module bundler is a tool that bundles all your files into a single bundle, that can be used by the browser.

Example: ViteJS or Webpack.

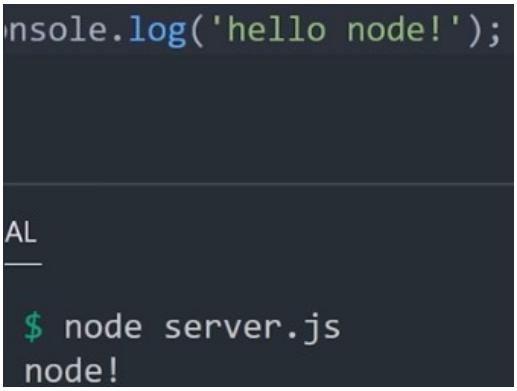
Dynamic imports

If your bundle or app is too big or if you want to improve performance we can use dynamic imports. It will import your module only when the user needs it or the browser requests it. Consider looking at the “lazy” chapter of my React tutorial.

```
const lazyBundle = await import('./lazy.js');
```

Node.js

Is a runtime that allows you to run your JavaScript code on a local server.



Typescript & Eslint

Tools that does static analysis to improve your code quality.

Functions

Anonymous functions

Functions that are not bound to an identifier (function name) are called as **anonymous functions**.

```
var msg = function () {
    return "hello world
";
}
```

Function constructor

```
var myFunction = new Function("a", "b", "return a * b");
var x = myFunction(4, 3);
console.log(x);
```

Recursive functions

A function that calls itself on condition.

```
function factorial(number) {
    if (number <= 0) {
        return 1;
    } else {
        return (number * factorial(number - 1));
    }
};
console.log(factorial(6));
```

Anonymous recursive function

The function invokes itself using a pair of parentheses **()**.

```
(function () {
    var x = "Hello!!";
    console.log(x)
})()
```

Good practices

Variables name

The name of your variable must always be in camelCase.

First word starts with a lowercase letter but all following words are attached and start with an uppercase letter.

```
let luckyNum = 23;
```

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