

# JavaScript Introduction + Coding Style + JSDoc + ESLint

# First, manners, this is our team



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# What we will Cover

- JavaScript Introduction
- Google Style guide and best practices
- JSDoc
- ESLint



# What we will **MISS**

- Basic coding structures (while, if, switch...)
- Details about software installation
- OOP
- Most content already available in the virtual classroom presentations.



# JavaScript Introduction

Operators + Behaviours + Functions +  
Jutge tips

# JS - Stack functionality

- Should be trivial...

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```
function greet(who) {  
    console.log('Hi ' + who);  
}  
greet('Mawi');  
console.log('Bye');
```

# JS - Stack functionality

- Should be trivial...

```
function greet(who) {  
    console.log('Hi ' + who);  
}  
greet('Mawi');  
console.log('Bye');
```

Stack.js



# JS - Paradox...?

- What came first?

# JS - Paradox...?

- What came first?
- The chicken or the egg?

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- What came first?
- The chicken or the egg?

Let's check



# JS - Declarative Functions

- Doesn't matter where its defined.

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```
console.log('Future says:', future());  
  
function future() {  
    return 'You will pass PAI';  
}
```



# JS - Declarative Functions

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```
console.log('Future says:', future());  
  
function future() {  
    return 'You will pass PAI';  
}
```

Go ahead and execute it



# JS - No return?

- What does a “returnless” function return?

# JS - No return?

- What does a “returnless” function return?

```
function noReturn () {  
  let elcheTeam = 'I am not doing anything';  
}
```



# JS - No return?

- And an empty return?

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- And an empty return?

```
function emptyReturn () {  
  let oviedoTeam = 'Me neither';  
  return;  
}
```

# JS - No return?

- And an empty return?

```
function emptyReturn () {  
  let oviedoTeam = 'Me neither';  
  return;  
}
```

Did you hit or miss?



# JS - Arrow Functions

- An elegant alternative

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- An elegant alternative
- Flexible syntax

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- An elegant alternative
- Flexible syntax

```
const isEven = n => {
  if (n % 2 === 0) return true;
  return false;
};
```

# JS - Arrow Functions

- An elegant alternative
- Flexible syntax

```
const isEven = n => {
  if (n % 2 === 0) return true;
  return false;
};
```

[More syntax examples](#)



# JS - Arrow Functions

- Looks familiar...?

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```
let doubled = input.map(x => x * 2);
```

# JS - Arrow Functions

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let doubled = input.map(x => x * 2);
```

.map() & .forEach()



# JS - Closure

- Function that remembers the scope

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```
function multiplier(factor) {  
    return number => number * factor;  
}
```



# JS - Closure

- Function that remembers the scope

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function multiplier(factor) {  
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}
```

Let's check how it works



# JS - VAR

- ONLY DIDACTIC PURPOSES

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- Global or function scope

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- **ONLY DIDACTIC PURPOSES**
- Special scope behaviour
- Global or function scope

```
const GLOBALNUM = 10;      // global

if (true) {
    let localNum = 20; // local
    var globalVar = 30; // global
}
```



# JS - VAR

```
function dummy () {  
    var invisible = 40; // only in function  
    console.log(invisible);  
}  
  
console.log(invisible); // not visible
```

# JS - VAR

```
function dummy () {  
    var invisible = 40; // only in function  
    console.log(invisible);  
}  
  
console.log(invisible); // not visible
```

Var file



# JS - File System

- Standard module of Node.js

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- Focus on Judge

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- Standard module of [Node.js](#)
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- For more information check:

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[File System](#)



# JS - File System

- Useful functions for the File System:

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- Useful functions for the File System:
- .trim()

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- Useful functions for the File System:
- `.trim()`
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- `.map()`

Check the examples: [The value of .trim\(\)](#)



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const a = [1, 2, 3];
const b = [...a, 4, 5];

console.log(b);
```

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```
const a = [1, 2, 3];
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```

Check an interesting use



# JS - Arguments

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Experiment with this example

# JS - Distinct “for” usage

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for (let member in list) {  
    console.log(member);  
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    console.log(member);  
}
```

# JS - Distinct “for” usage

- Which gets the value?

```
for (let member in list) {  
    console.log(member);  
}
```

```
for (let member of list) {  
    console.log(member);  
}
```

Here is the answer



# JS - operator ??

```
console.log( 0 || 100 );  
// → 100
```

# JS - operator ??

```
console.log( 0 || 100 );
// → 100
console.log( 0 ?? 100 );
// → 0
```

# JS - operator ??

```
console.log( 0 || 100 );
// → 100
console.log( 0 ?? 100 );
// → 0
console.log( null ?? 100 );
// → 100
```

# JS - operator ??

```
console.log( 0 || 100 );
// → 100
console.log( 0 ?? 100 );
// → 0
console.log( null ?? 100 );
// → 100
console.log( undefined ?? 100 );
// → 100
```

# JS - operator ??

```
console.log( 0 || 100 );
// → 100
console.log( 0 ?? 100 );
// → 0
console.log( null ?? 100 );
// → 100
console.log( undefined ?? 100 );
// → 100
```

[operator\\_interrogation.js](#)



# Google Style Guide

## Best Practices

# Style guide: index

- Statements
- Braces
- Indentation
- White spaces



# Statements

- Only one statement per line.

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```
let numero = '5';  
let otroNumero = 11;
```



# Statements

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```
let numero = '5';  
let otroNumero = 11;
```



```
let numero = '5', let otroNumero = 11;
```



# Statements: semicolons ;

- They are **MANDATORY**

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Semicolons-example.js

# Statements - Column limit

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- If this is exceeded, **line wrapping** must be performed

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- Same code, multiple valid ways to style it.

Check some examples!

# Braces

- Braces { } are **MANDATORY**

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- Applies to if, else, do, while, for, ...

# Braces

- Braces {} are **MANDATORY**
- Applies to if, else, do, while, for, ...
- **Sole Exception:** Single-line if (no else) for readability.

# Braces - bad examples

```
if (someVeryLongCondition())  
    doSomething();
```



```
for (let i = 0; i < 10; i++) bar(foo[i]);
```

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if (someVeryLongCondition())  
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for (let i = 0; i < 10; i++) bar(foo[i]);
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- **Exception:**

```
if (shortCondition()) foo();
```



# Braces - bad examples

```
if (someVeryLongCondition())  
    doSomething();
```



```
for (let i = 0; i < 10; i++) bar(foo[i]);
```

- **Exception:**

```
if (shortCondition()) foo();
```

The value of braces.js



# Braces - K&R style

- Kernighan and Ritchie style for nonempty blocks and block-like constructs

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[Check here the rules ;\)](#)

# Indentation

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  - [function\\_indentation.js](#)



# Indentation - arrays

- Which of these is correct?

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```
const a = [  
  0,  
  1,  
  2,  
];
```

# Indentation - arrays

- Which of these is correct?

```
const a = [  
  0,  
  1,  
  2,  
];
```

```
const b =  
  [0, 1, 2];
```

# Indentation - arrays

- Which of these is correct?

```
const a = [  
  0,  
  1,  
  2,  
];
```

```
const b =  
  [0, 1, 2];
```

```
const c = [0, 1, 2];
```



# White Spaces - vertical

- **MANDATORY:** Between class methods.
- **Optional:** In object literals (to group fields).

# White Spaces - vertical

- **MANDATORY:** Between class methods.
- **Optional:** In object literals (to group fields).
- **Inside methods:** Use to separate logical steps.
- **FORBIDDEN:** At start or end of function body.

# White Spaces - vertical

- **MANDATORY:** Between class methods.
- **Optional:** In object literals (to group fields).
- **Inside methods:** Use to separate logical steps.
- **FORBIDDEN:** At start or end of function body.

hey you, click me!



# White Spaces - horizontal

- **Leading:** Start of line (Indentation).

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- **Internal:** Inside lines (Formatting).

# White Spaces - horizontal

- **Leading:** Start of line (Indentation).
- **Internal:** Inside lines (Formatting).
- **Trailing:** End of line. **STRICTLY FORBIDDEN.**

# White Spaces - horizontal MUST do

- Space after if, else, catch before (.

# White Spaces - horizontal MUST do

- **Space after if, else, catch before (.**
- **Exception:** No space for function or super.

# White Spaces - horizontal MUST do

- **Space after if, else, catch before (.**
- **Exception:** No space for function or super.
- **Space before { (except objects as arguments).**

# White Spaces - horizontal MUST do

- Space after commas, semicolons, and colons.

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- Space after commas, semicolons, and colons.
- NEVER before punctuation.

# White Spaces - horizontal MUST do

- Space after commas, semicolons, and colons.
- NEVER before punctuation.
- Surround ternary operators.

# Final boss guide style

- Let's analyze this code:
  - [incorrect-guide-style.js](#)

# Final boss guide style

- Let's analyze this code:
  - [incorrect-guide-style.js](#)
- Here is the correct version:
  - [correct-guide-style.js](#)

# JSDoc

## comments + tags

# JSDoc

- API documentation generator for JavaScript



# JSDoc

- API documentation generator for JavaScript
- Similar to Doxygen



# JSDoc

- API documentation generator for JavaScript
- Similar to Doxygen
- `//, /** */`



# JSDoc

- @desc
- @author
- @param
- @return
- @link



# JSDoc

- `@desc`
- `@author`
- `@param`
- `@return`
- `@link`

JSDoc



# JSDoc

```
/**  
 * @desc This function prints  
 * 'Hello, World'  
 * @return 'Hello, World'  
 *  
 */  
function foo() {  
    return 'Hello, World!';  
}
```



# JSDoc

```
/**  
 * @desc This function prints  
 * 'Hello, World'  
 * @return 'Hello, World'  
 *  
 */  
function foo() {  
    return 'Hello, World!';  
}
```

JSDoc-style.js



# ESLint

## Linter + AutoFix + ESLint for TS

# Linter

- Improve source code

# Linter

- Improve source code
- Origin in C

# Linter

- Improve source code
- Origin in C
- “Remove the lint”

# ESLint

- JavaScript Linter

# ESLint

- JavaScript Linter
- Display errors

# ESLint

- JavaScript Linter
- Display errors
- 3 parts

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# ESLint

- JavaScript Linter
- Display errors
- 3 parts
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  - Rules
  - Result



# ESLint

- Install
  - \$ npm install -D eslint

# ESLint

```
import globals from "globals";
import pluginJs from "@eslint/js";

export default [
  { languageOptions: { globals: globals.node } },
  pluginJs.configs.recommended,
];
```



# ESLint

- Interesting URL:
  - [ESLint\\_rules](#)

# ESLint

- Interesting rules

# ESLint

- Interesting rules
  - no-soft-compare

# ESLint

- Interesting rules
  - no-soft-compare
  - no-unreachable

# ESLint - Google Style Guide

- Dependencies
  - \$ npm install -D eslint eslint-config-google  
@eslint/eslintrc globals

# ESLint - Google Style Guide

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  - \$ npm install -D eslint eslint-config-google  
@eslint/eslintrc globals

Google Style Guide config



# ESLint - AutoFix

- AutoFix:
  - `$ npx eslint --fix`

# ESLint

- Example:
  - [ESLint\\_example.js](#)

# ESLint for TypeScript

- Install

# ESLint for TypeScript

- Install
  - \$ npm install --save-dev eslint  
@typescript-eslint/parser

# ESLint for TypeScript

- Install
  - \$ npm install --save-dev eslint  
@typescript-eslint/parser
  - \$ touch .eslintrc

# ESLint for TypeScript

```
{  
  "root": true,  
  "parser": "@typescript-eslint/parser",  
  "plugins": [ "@typescript-eslint" ],  
  "extends": [  
    "eslint:recommended",  
    "plugin:@typescript-eslint/eslint-recommended",  
    "plugin:@typescript-eslint/recommended"  
  ]  
}
```

# ESLint for TypeScript

- touch `.eslintignore`

# ESLint for TypeScript

- touch .eslintignore
  - /build
  - /students

# ESLint for TypeScript

- touch `.eslintignore`
  - `/build`
  - `/students`
- `npm run lint`

# ESLint for TypeScript

- Rules for TypeScript:
  - [Overview | typescript-eslint](#)



Thanks for the attention  
Doubts, questions?



# References

- [Coding Style](#)
- [Google JavaScript Style Guide](#)
- [JSDoc](#)
- [ESLint: Linter Javascript - Javascript en español](#)
- [Pasos para instalar y configurar ESLint en nuestro proyecto con Typescript](#)

# References

- [Eloquent JavaScript](#) (chapter 1 - 4)
- [The Modern JavaScript Tutorial](#)
- [Presentations-Tips.ppt](#)
- [Oral-Presentations-Tips](#)