



_nology

TALENT IN **TECH**NICOLOUR

Programming Languages

Learning objectives

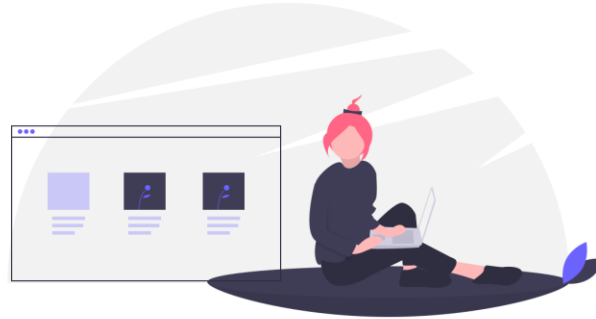
- What is programming? Coding? Languages?
- JavaScript intro
 - An introduction to JavaScript
 - Variables
 - Conditional statements
 - Logical operators

Programming

Backend Frontend

High & Low Level

Instructions



Python RubyJava

Web? Mobile? Electronics?

What is JavaScript?

- One of the most popular and widely used programming languages in the world
- A way of adding interactivity and behaviours to a web page
- Javascript can be used for:
 - Front-end development (UI's / client side code)
 - Back-end development (Servers, API's / server side code)
- Javascript can be used to build:
 - Websites
 - Mobile Apps
 - Games
 - Command-line tools
 - Networking applications



Where does JS run?

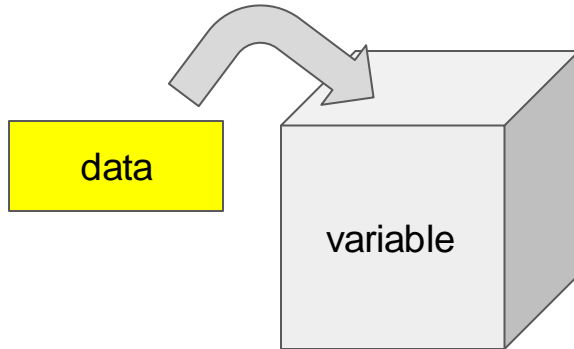
- JS is executed by a browser's JavaScript engine.
- A JavaScript engine can only execute one command/statement at a time.
 - Example statement: `console.log("ollie");`
- Chrome's JS engine is open source and called v8.
- Node, a backend JS engine, uses v8 to execute JS. This enables JS to be run outside of a browser and in a Node environment.

ECMAScript 6 (ES6 / ES2015)

- European Computer Manufacturers Association (ECMA) International sets the standards for ECMAScript
- ECMAScript is a standard for Javascript
- ECMAScript was created to standardise Javascript
- Referred as ES6 prior to release, the ECMA moved to annual releases and it's official name is ES2015 with newest versions being referred to as ESNext
- ES2015 are the standards set in 2015
- ES2015 is supported by all modern major browsers

Variables

- Variables are a way of storing data for later use
- You assign a name to a variable so you know how to refer to that variable later
- Variables can be named to anything you want (except JavaScript keywords)
- Variables can store all data types e.g:
 - String
 - Number
 - Boolean
 - Array (list)
 - Object



Variable examples

let

Used to be able to reassign a variable later

```
let news = "Big news today";
```

```
news = "TLDR";
```

```
console.log(news); // TLDR
```

const

Used when you don't want your variable to change

```
const pi = 3.14;
```

Instead of

```
var pi = 3.14;
```

or

```
let pi = 3.14;
```



Logical operators

Operator	Description	Example	Example result
==	Equal to (no data type check)	5 == 8 8 == 8 8 == "8"	False True True
===	Equal to and type equal	5 === 8 8 === 8 8 === "8"	False True False
!=	Not equal to (no data type check)	5 != 8 8 != 8	True False
>	Greater than	5 > 8 8 > 5	False True
<	Less than	5 < 8 8 < 5	True False
>=	Greater than or equal to	5 >= 8 8 >= 8	False True

Conditional statements

When we want to perform different actions for different conditions we use conditional statements.

- **if** and **else** are JavaScript keywords we can use to these checks on conditions.
- **if** I am hungry then eat, **else** don't eat.

```
if ( condition is true ) {  
    ... Do something  
} else {  
    ... Do something else  
}
```



Conditional Code examples

Condition is True

```
const personsAge = 19;  
let allowInThePub = false;  
  
if (personsAge >= 18) {  
    allowInThePub = true;  
}  
  
console.log(allowInThePub);  
// true
```

Condition is False

```
const personsAge = 17;  
let allowInThePub = false;  
  
if (personsAge >= 18) {  
    allowInThePub = true;  
}  
  
console.log(allowInThePub);  
// false
```

JS in the browser..

```
// Script Tag
<script type="text/javascript">
  alert('Hello nologists!');
</script>

// External
<script src="script.js"></script>

// Inline
<a onclick="alert('inline hello')";
```



Let's try some examples!

Further reading

- [JavaScript Variables \(w3schools.com\)](https://www.w3schools.com/js/)
- [If else operators \(MDN\)](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/if...else)