INTRODUCTION TO JAVASCRIPT

FOR THE WEB

HTML

Define the structure

CSS

Make it look nice

JavaScript

Make switches work

CONTENT

- What is JavaScript?
- The developer console (`console`)
- Important programming concepts
  - Variables (`var`)
  - Control Structures (`if`)
  - Functions and events (`function`)
  - Loops (`for` / `while`)
- DOM manipulation
  - Add elements
  - Modify elements
  - Delete elements
  - Delete all child elements
- Add / remove CSS classes

WAS IST JAVASCRIPT?

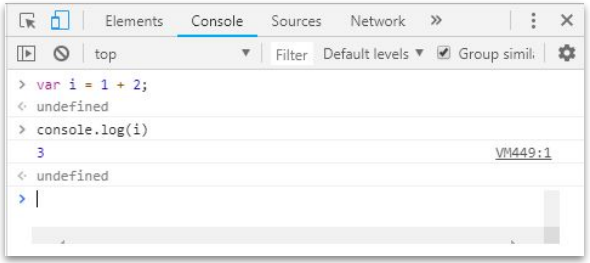
JavaScript is a scripting or **programming language** that allows you to implement complex things on web pages — every time a web page does more than just sit there and display static information for you to look at — displaying timely **content updates**, **interactive** maps, **animated** 2D/3D graphics [..] — you can bet that JavaScript is probably involved.

It is the **third layer** of the layer cake of standard web technologies (HTML / CSS / JS).

Source: MDN

THE DEVELOPER CONSOLE

F12 opens the **console** in Chrome



`console` is an object representing the browser's console

```
console.log("Hi there!")
```

`log` is a function that this object provides

Variables are a named containers for values.

The keyword `var` defines a variable

```
var q = 2;
var price = 3.99;
var total = q * price;
var name = "Chris";
var heading = document.querySelector("#h1");
```

The keyword `if` defines a **conditional code block**. It is only executed when the condition evaluates to true.

```
if(age >= 18) {
  return true;
} else {
  return false;
}
```

The `else` part is optional and is executed when the condition of the `if`-statement evaluates to `false`.

The keyword function defines a **function**, which is a reusable block of code with a name.

```
function updateName() {
  var name = prompt("Enter new name");
  para.textContent = "Player 1: " + name;
}
```

We can add event listeners to any element. The click event listener allows us to react to an element being clicked on.

```
para.addEventListener("click", updateName);
```

An event listener needs to know what to do in case of the click event. We define that by passing a function name.

With **Javascript** and `functions`, we can make a website interactive. For example, we can define an action for a button our website:

```
var button = document.querySelector('#btn');
button.addEventListener('click', convert);

function convert() {
    ...
}
```

A **for** loop is useful when you know how often you want to iterate the code block.

The keyword `for` introduces a loop. Everything within the brackets is executed for each iteration of the loop.

```
for(var i = 0; i < 10; i++) {
   console.log(i);
}
```

A **while loop** repeats a block of code for as long as a condition is true.

The keyword `do` introduces a loop. Everything within the brackets is executed for each iteration of the loop.

```
do {
    ...
} while ( 1 == 1)
```

```
// 1. Get the element you want to change
var task = document.querySelector("#task1");

// 2. Change the property you want
task.innerHTML = "<b>Do homework</b>";
```

```
// 1. Get the parent element of the new element
var taskList = document.querySelector("#tasks");

// 2. Create a new element
var newTask = document.createElement("li");

// 3. Define the element's content
newTask.textContent = "Learn CSS";

// 4. Add the new element to it's parent
taskList.appendChild(newTask);
```

```
// 1. Get the element you want to remove
var task = document.querySelector("#task1");

// 2. Get the parent node of that element
var parent = task.parentNode;

// 3. Remove the task from the parent
parent.removeChild(task);
```

```
// 1. Get the element you want clear
var taskList = document.querySelector("#tasks");

// 2. Loop through children and remove each one
while (taskList.firstChild) {
    taskList.removeChild(taskList.firstChild);
}
```

CSS CLASSES

ADD / REMOVE

```
// Get the element you want to ass a CSS class to
var taskList = document.querySelector("#tasks");

// Add a CSS class
taskList.classList.add("done");

// Remove a CSS class
taskList.classList.add("open");
```