

Introcution to JavaScript

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What learned we last Week?

- Objects `let person = {name: "Dan", age: 43}`
- Accessing Properties `person.name // "Dan"`
- Adding Properties `person.height = 1.80`
- Removing Properties `delete person.age`
- “this”, “in” and “for in” keywords
- Object references and Garbage Collection
- Methods on Primitives `"Hello World".length // 11`
- Arrays Methods `[2, 3, 1, 4].sort() // [1, 2, 3, 4]`

Goals of this week

- Basic introduction to HTML
- Basic introduction to CSS
- Developer Tools
- JavaScript in the Browser
- DOM (Document Object Model)
- Searching & Manipulating the DOM
- Adding / Removing Elements
- Events

HTML (Hyper Text Markup Language)

```
<!DOCTYPE html>
<html>
  <head>
    <title>My Website</title>
  </head>
  <body>
    <h1>My Website</h1>
  </body>
</html>
```

HTML Elements

```
<h1 id="title" class="heading large">My Website</h1>
```

h1 - Type of the element (tag)

id - Only one id per element

class - Multiple classes per element and elements per class

My Website - Content of the element

CSS (Cascading Style Sheets)

```
body { // tag selector
    background-color: black;
}
#title { // id selector
    color: red;
}
.large { // class selector
    font-size: 20px;
}
```

CSS (Cascading Style Sheets)

```
<!DOCTYPE html>
<html>
  <head>
    <title>My Website</title>
    <style> h1 { color: red; }</style>
  </head>
  <body>
    <h1>My Website</h1>
  </body>
</html>
```

Developer Tools

- Press F12 or Ctrl+Shift+I
- Elements / Inspector Tab
 - See the current HTML & CSS
 - Change the HTML & CSS
- Console Tab
 - Execute JavaScript
 - See Errors

JavaScript in the Browser

```
<!DOCTYPE html>
<html>
  <head><title>My Website</title></head>
  <body>
    <h1 id="title">My Website</h1>
    <script>
      document.getElementById("title").style.color = "red";
    </script>
  </body>
</html>
```

DOM (Document Object Model)

```
<!DOCTYPE html>
<html>
  <head>
    <title>My Website</
title>
  </head>
  <body>
    <h1>My Website</h1>
  </body>
</html>
```

```
document.body // <body>
document.body.children // [<h1>]
```

Searching the DOM

```
<h1 id="title" class="heading large">My Website</h1>  
<button id="button">Click me!</button>  
<span>First Text</span>  
<span>Second Text</span>
```

```
document.getElementById("title") // <h1>  
document.getElementsByClassName("heading") // [<h1>]  
document.getElementsByTagName("h1") // [<h1>]  
  
document.querySelector("#button") // <button>  
document.querySelector(".large") // <h1>  
document.querySelectorAll("span") // [<span>, <span>]
```

Manipulating the DOM

```
<h1 id="title">My Website</h1>
```

```
let myTitle = document.getElementById("title") // <h1>
```

```
console.log(myTitle.innerHTML) // "My Website"
```

```
myTitle.innerHTML = "My new Website"
```

```
myTitle.style.color = "red"
```

```
myTitle.style.fontSize = "20px"
```

Adding Elements

```
<h1 id="title">My Website</h1>
```

```
let myTitle = document.getElementById("title") // <h1>
```

```
let myText = document.createElement("span") // <span>
```

```
myText.innerHTML = "This is some text"
```

```
document.body.appendChild(myText)
```

```
<h1 id="title">My Website</h1>
```

```
<span>This is some text</span>
```

Removing Elements

```
<h1 id="title">My Website</h1>  
<span>This is some text</span>
```

```
let myText = document.querySelector("span") // <span>  
  
document.body.removeChild(myText)
```

```
<h1 id="title">My Website</h1>
```

Events

```
<h1 id="title">My Website</h1>  
<button id="button">Click me!</button>
```

```
let myButton = document.getElementById("button") // <button>  
  
myButton.onclick = function () {  
    console.log("Button clicked!")  
}
```

Events

```
<h1 id="title">My Website</h1>  
<button id="button">Click me!</button>
```

```
let myButton = document.getElementById("button") // <button>  
  
myButton.addEventListener("click", function () {  
    console.log("Button clicked!")  
})  
myButton.addEventListener("click", function () {  
    console.log("Button clicked again!")  
})
```

Tasks and Points

Goal is to get 100 Points.

- `adding-removing` (35 Points)
- `basic-events` (35 Points)
- `hello-browser` (20 Points)
- `manipulating-dom` (35 Points)
- `searching-elements` (35 Points)
- `to-do-list` (65 Points)