MODULE 3: FRONT END

The DOM

TECH ELEVATOR
A Stride Company

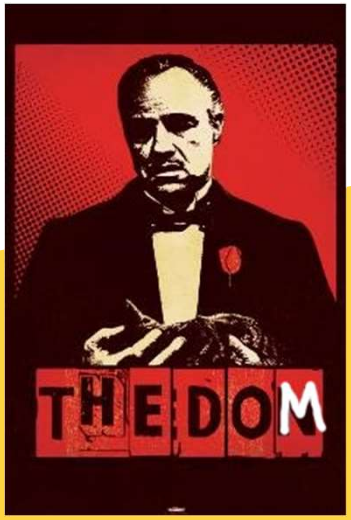
Back to HTML

```
<!DOCTYPE html>

<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
<head>
  <meta charset="utf-8" />
  <title></title>
  <link rel="stylesheet" href="style.css" type="text/css" />
  <script src="jquery-3.1.0.js"></script>
</head>
<body>
  <section class="content">

    <div id="box1" class="red box">
      <p class="text">Text inside a red box</p>
    </div>

    <div id="box2" class="blue box">
      <p class="text">Text inside a blue box</p>
    </div>

  </section>

  <script src="script.js"></script>
</body>
</html>
```

Document Object Model (the DOM)

The **Document Object Model (DOM)** is the programming interface for HTML documents that are loaded into the browser

- It is **not** the page source
- It allows developers to:
  - look for an element with JavaScript
  - find an element's parents, siblings, children
  - add/remove css classes via JavaScript
  - add/remove elements from the page
  - Manipulate pretty much anything on the page



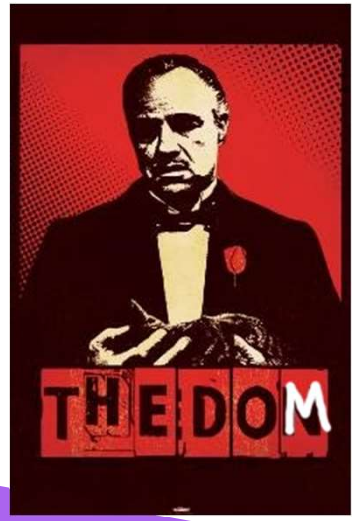
HTML is Static

HTML is read once and turned into the DOM

CSS and JavaScript run against the DOM, not the HTML

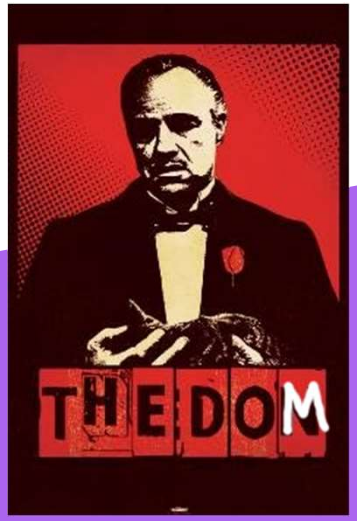
What does this do?

```
table > tr > td {
  background-color: red;
}
```



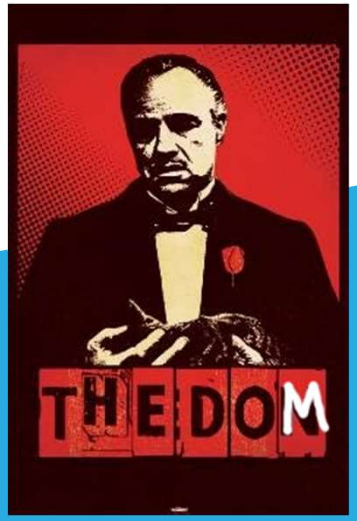
Document Object Model (the DOM)

```
const element = document.querySelector("#main-content");
element.innerText = "Hello World!";
```



DOM Selection Functions

- getElementByID()
  - This function will get a single HTMLElement from the DOM and return a reference to it.
- querySelector()
  - Takes a standard CSS selector and returns the first element it finds that matches that selector
- querySelectorAll()
  - This will return a NodeList of all the elements, which you can use as an array



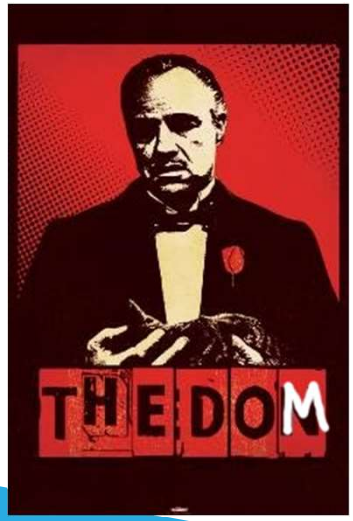
Changing Elements

textContent

- Updates any text information on the page
- All text (including html tags) are replaced!
- Insert text treated as literals: no interpreting of HTML

innerHTML

- Updates any text information on the page
- All text (including html tags) are replaced!
- Interprets of HTML for display
- Do not use with user input! (Why)



Getting and Setting Values

.value will return the value of a selected element

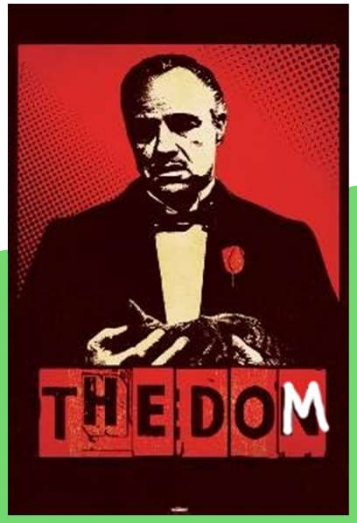
```
let todoInput = document.querySelector('input[name=newTodo]’);
let newTodoText = todoInput.value;
```

Also used to set a value

```
todoInput.value = ‘’;
```

Radio and checkboxes use .checked

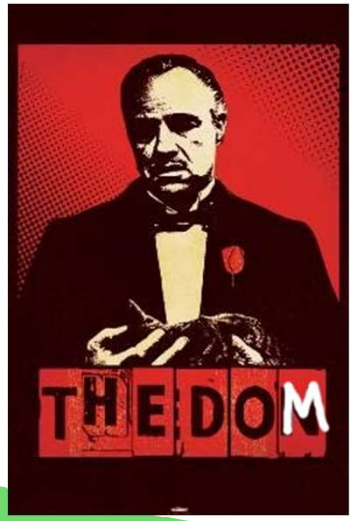
```
let finishedCheckbox =
document.querySelector('input[name=isFinished]’);
let isFinished = finishedCheckbox.checked;
```



Manipulating Classes

- classList accesses the classes applied to an element

```
// Get the first line item
let firstListItem = document.querySelector('#todos li');

// Add the class `done`
firstListItem.classList.add('done');

// Remove the class `priority`
firstListItem.classList.remove('priority');
```



Adding to the Mob....DOM!

createElement()

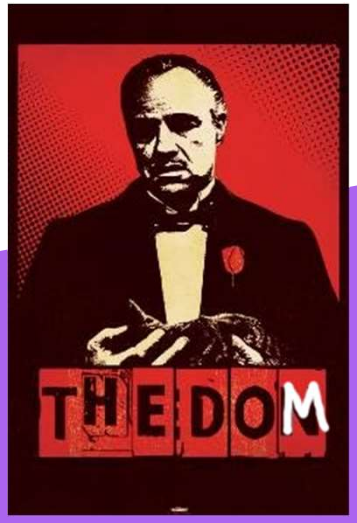
Creates a new DOM element and returns it

Element is not on the page, but you can manipulate it.

insertAdjacentElement()

Adds the element as the last child of the selected element

Location	Meaning
beforebegin	Put the element before this one
afterbegin	Put the element inside this one at the top
beforeend	Put the element inside this one at the bottom
afterend	Put the element after this one



ELEVATE YOURSELF

Traversing the DOM

.children will select the immediate child elements

Convert to an array to manipulate

map, filter, reduce, etc.

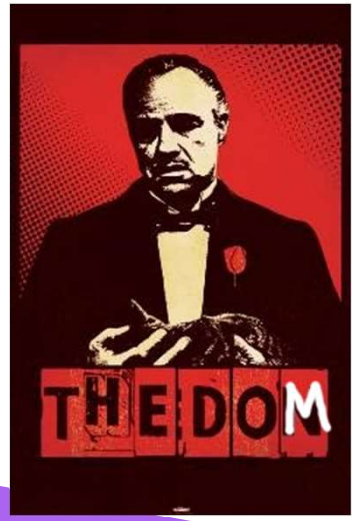
let todoItemsArray = Array.from(todoList.children);

.childNodes will get all nodes inside an element

children vs childNodes

children are elements, only contain HTML not text

childNodes contain HTML and text/values



Traversing the DOM

.parentNode

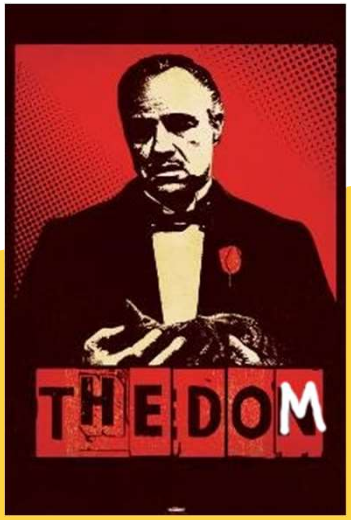
Gets the immediate parent node of the element

nextElementSibling

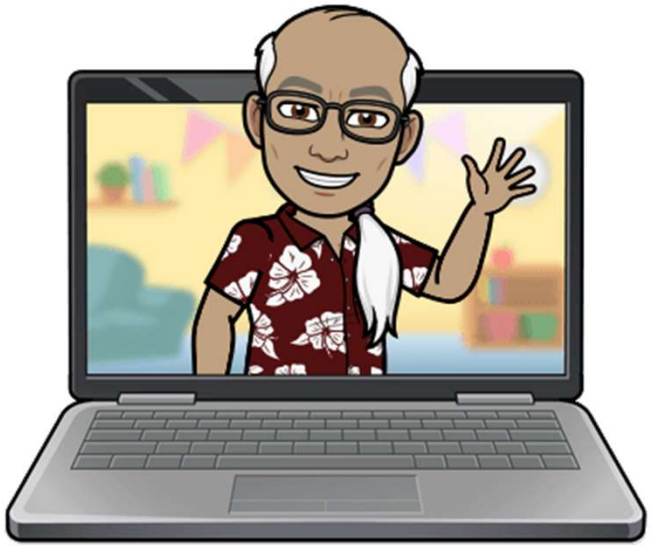
previousElementSibling

removeChild

Removes the child element from the DOM



LET’S CODE!



WHAT QUESTIONS DO YOU HAVE?

Reading for tonight:

Event Handling