

## Document Object Model





- In this section we will learn about the Document Object Model (DOM)
- The DOM will allow us to interface our Javascript code to interact with HTML and CSS



- Browsers will construct the DOM, which basically means storing all the HTML tags as Javascript objects.
- Let's see a simple example...



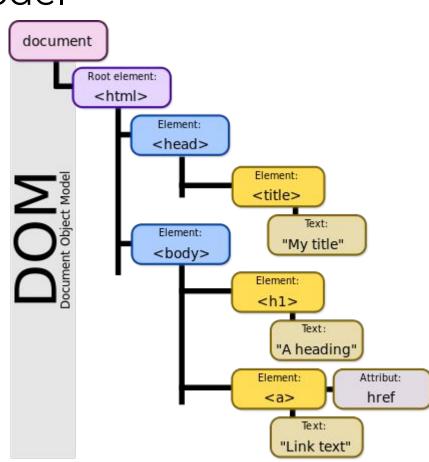


#### Document Object Model

#### A heading

Link text







- We can see the DOM of any website.
- Go to a website and in the console type:
  - document
- That will return the HTML text of the page. To see the actual objects use:
  - console.dir(document)





- This DOM will allow us to use Javascript to interact with the web page.
- The DOM is enormous, most developers won't use all the properties.
- We will cover the common objects used, but be prepared for the unknown!





- Let's explore this in the browser!
- Afterwards in the next lecture we will go through an example of using Javascript with the DOM.



### Part 1 - DOM Interaction

Using Javascript to interact with DOM elements!





- In this lecture we will begin to see examples of how to grab HTML elements from the DOM.
- The HTML elements are properties of the DOM



- We'll cover how to grab large groups of elements, like the entire body or head of the HTML
- And then focus on grabbing specific HTML items, like classes or ids.



- Here are some important document attributes:
  - document.URL
  - o document.body
  - document.head
  - o document.links





- There are many methods for grabbing elements from the DOM:
  - o document.getElementById()
  - document.getElementByClassName()
  - o document.getElementsByTagName()
  - o document.querySelector()
  - o document.querySelectorAll()





- Check out the relevant files:
  - Part1\_MainPage.html
  - Part1\_Color\_Changer.js
- We will start by disconnecting the html file and exploring it a bit manually, then we will code out a complex example.





Let's explore these various methods!





- Once you have grabbed an element, you can interact with it!
  - myvariable.style.color (Many CSS options)
  - myvariable.textContent
  - o myvariable.innerHTML
  - o myvariable.getAttribute()
  - o myvariable.setAttribute()





Let's explore these various methods!





# Part 2 - Content Interaction

Document Object Model



- In this lecture we will see more examples of how to interact with the HTML from the DOM.
- We will show how to change text, HTML code, and attributes.



- Relevant files are:
  - Part2\_Content.html
  - Part2\_Interact.js
- Let's get started!





### Part 3 - DOM Events

Using Javascript to trigger on events!





- We don't always want to have to specify beforehand how to interact with the DOM
- Many times we only want the interaction to occur on a particular event, such as a click or a hover.



- We achieve this by adding an Event Listener
- The javascript will be "listening" for an event to occur and then execute a function when it happens.
- Let see some example code!



- Listening for an event looks like this:
  - o myvariable.addEventListener(event,func);
- An example:

```
var head = document.querySelector('h1');
head.addEventListener("click",changeColor);
```



- There are many, many possible events!
  - o Clicks
  - Hovers
  - Double Clicks
  - Drags
  - O Much More!
  - https://developer.mozilla.org/en-US/docs/Web/Events





Let's explore these events!





## Part 4 - Game Project

**Document Object Model** 





- It is time to get some practice with the DOM!
- We will be creating a very simple tic tac toe game interface.
- You have two options on the approach for this project.





- First Option
  - Try to replicate the game completely on your own.
- Second Option
  - Follow along with the "solution" lecture for a code-along session.





- I recommend you try it at least once on your own to get some practice of seeing something and then trying to replicate it on your own, a great skill to have!
- Let's start by seeing what the final game looks like!



# Part 4 - Game Project Solutions

**Document Object Model** 

