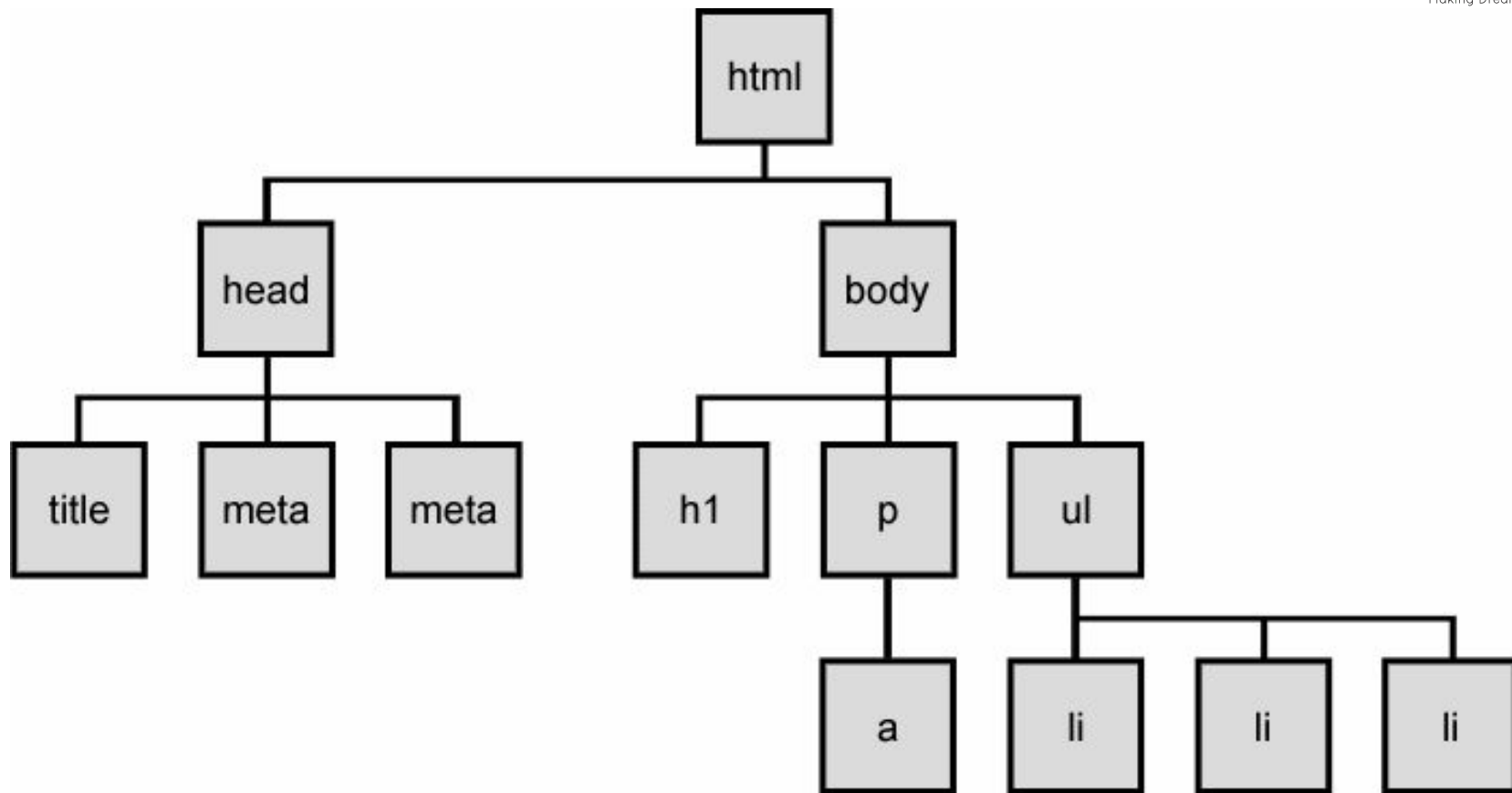# Introduction to Programming JavaScript

Part 4

Document Object Model (DOM)

The DOM is a logical representation of your HTML document/page.

Javascript can be used to access and manipulate the DOM of any HTML page. This manipulation can be in the form of adding new elements to the html page, deleting or modifying elements on the page.

document object

When using javascript in your webpages, there is a predefined object called **document.**

This object is parent to all elements on your page. In other words, this **document** object is the root of all elements on your html webpage.

This means, to manipulate the DOM of your webpage using javascript, you first have to access the **document** object.

Using the document Object

As mentioned previously, the document object is the root/parent of all the elements on your html page. To make changes to your webpage dynamically, you have to use the document object.

Below is an example of adding a text to the body tag of your html webpage.

```
document.body.innerHTML = "Hello world"
```

Selecting elements

In the DOM, every HTML element you have on your webpage is an object and we can find these elements using some predefined methods/functions on the **document** object.

Selecting elements

Below are the 3 most common ways of selecting/finding a particular element.

```
//gets an element by the id property
document.getElementById(id)

//gets all elements with a particular class name
document.getElementsByClassName(name)

//gets all elements with a particular tag
document.getElementsByTagName(tag)
```

Changing attribute

Once you have selected the element(s) you want to work with, you can change their attributes.

```
<img id="firstImage" src="orange.png" alt="" />

<script>
 var el = document.getElementById("firstImage");
 el.src = "apple.png";
</script>
```

Changing attribute

The style of HTML elements can also be changed using JavaScript. All style attributes can be accessed using the style object of the element. For example:

```
<div id="demo" style="width:200px">some text</div>

<script>
 var x = document.getElementById("demo");
 x.style.color = '#6600FF';
 x.style.width = '100px';
</script>
```

Event	Description
onclick	occurs when the user clicks on an element
onload	occurs when an object has loaded
onunload	occurs once a page has unloaded (for <body>)
onchange	occurs when the content of a form element, the selection, or the checked state have changed (for <input>, <keygen>, <select>, and <textarea>)
onmouseover	occurs when the pointer is moved onto an element, or onto one of its children
onmouseout	occurs when a user moves the mouse pointer out of an element, or out of one of its children
onmousedown	occurs when the user presses a mouse button over an element
onmouseup	occurs when a user releases a mouse button over an element
onblur	occurs when an element loses focus
onfocus	occurs when an element gets focus

Events can be used as attributes on almost all HTML elements, and the value for these event attributes can be any function that will be called when the event occurs.

```html
<button onclick="doSomething()">Click Me!</button>

<script>
 function doSomething(){
 alert('button has been clicked');
 }
</script>
```

Now let's practise some JavaScript!

EXERCISE 1: INSTRUCTIONS

1. Create a new file in your text editor and save it as *dom.html* (make sure it's saved in the js-practice folder you created)
2. Let's start with the HTML document structure
3. Add an image to the body of your html page
4. Add a script tag before the closing body tag
5. Inside the script tag, select the image and change it's src attribute using javascript

EXERCISE 2: INSTRUCTIONS

1. In your dom.html file, add a button below the image tag
2. Add an onclick event to the button
3. Set the onclick event to a function, you can give this function any name of your choice.
   NB: you've not defined this function yet.
4. Create the function in your script tag and add an alert to this function
5. Open your HTML page in the browser and click on the button to confirm that you get an alert

Thanks!

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