CodeSoc: Web development

Class 8: Introduction to Javascript

Last Time

- Looked at the *box* model of CSS
- Created a drop down menu
- More work using selectors

Outline

1. Introduction and creation of simple example website
2. (Today) The HTML document - Page structure, content types & best practises
3. More HTML elements & adding style (part i)
4. More HTML elements & adding style (part ii) - consolidating what we know
5. Multi-page sites & navigation
6. External style
7. Advanced CSS
8. Introduction to Javascript

Today

- Learn some basic JS to change our websites dynamically

A Counter

- Copy out the HTML below - it should display 0 and a button
- Note the onClick attribute of the button

```
<html>
	<body>
		<h1 id="count">
			0
		</h1>

		<button onClick="add()">
			Add One!
		</button>
	</body>
</html>
```

A Counter

- Now after the this create a new element: <script> </script> (the same way as we did style before)...
- In here we write our javascript function add()
- Javascript again uses different syntax to HTML and CSS
  - More of a programming style
- We need some way of keeping track of the value of our counter
- For this we use a *variable*, a simple store of some data, this is how you *declare* a variable in JS: (note the semicolon at the end of the line)

```
<script>
        var counter = 0;
</script>
```

A Counter

- Next we need to create our add function, this is done using the keyword *function*
- We will fill in the details on the next slide - note we enclose our function using { and } (curly braces)

```
<script>
        var counter = 0;
        function add() {
                ...
        }
</script>
```

A Counter

- The first thing we want to do in add is to increment the counter variable
  - This is called an *assignment*

```
<script>
        var counter = 0;
        function add() {
                counter = counter + 1;
        }
</script>
```

A Counter

- The final step is to update the HTML to reflect the new value of counter
- This variable we are changing is the HTML inside our div!

```
<script>
	var counter = 0;
	function add() {
		counter = counter + 1;
		document.getElementById("count").innerHTML = counter;
	}
</script>
```

Functions

- We *declared* a function add(), and told it to run when we click the button
- Inside the () is where you put function *parameters,* if you have declared you need them, for example:

```
<script>
        function sum(x,y) = {
                return x + y
        }
</script>
```

- Unlike before, this function returns a number
- To *call* this function we just write sum(3,4) which will give the value 7

Alerts

- Changing the HTML is not the only way to output things to the browser
- We can use an alert to pop a message on the screen
- This time create a new button, which calls a new function called popup()
- To show an alert that says “hi” we write alert(“hi”)

Challenge

- For the remainder of the class try to complete these tasks:

1. Make a new button, such that when it's clicked it changes a headings text
2. (med) Make a new button which adds an image to the page

Final remarks

- Over this term you have learnt how to build a website from the ground up
- There is much more to be learnt though!
  - More styling tools...
  - More complex JS...
- Javascript should be the next thing you look to learn about
- It’s the only way to make dynamic web content - and is used for designing mobile apps too
- Ignore all the frameworks (react.. jquery.. etc..) until you get the way JS works