Intro to JavaScript

Do not freak out.

You are not required to use JS in any of your projects*

* Your projects better be amazingly designed and perfectly responsive.

What we've learned so far:

- How a web browser works
- How to describe content to the browser
- How to describe presentation to the browser
- How to design responsively
- How to use GitHub

HTML
Content
or Structure

CSS
Presentation
or Style

JavaScript
Behavior
or Interaction

What the heck is JS?

- Gives us the ability to dynamically interact with the browser and the user.
- The most commonly used programming language in the world.
- A scripting language: JS runs programs made up of individual steps.
- Built into all of the major browsers.

Using JavaScript

- We author files with an extension of ".js" and include them with our HTML.
- Inside the JS document, we give the browser instructions about what we want it to do and when.

Using JavaScript

```
<script type="text/javascript">

    // Code goes here

</script>


<script src="site.js"></script>
```

Syntax

Or How to Speak JavaScript

Language Comparison

HTML	.html	`<h1>Hello World</h1>`

CSS	.css	`h1 {`
		`  font-weight: bold;`
		`}`

JavaScript	.js	`document.write('Hello World');`

Data Types

Strings	`'Hello World'`
Numbers	`4`, `-4`, `0.125`, `-0.125`
Boolean	`true` or `false`
Undefined	
Null	

Operators

Strings	+	‘Hello’ + ‘World’; // HelloWorld
Numbers	Addition: + Subtraction: - Division: / Multiplication: * Increment: ++ Decrement: -- Modulus: %	2 + 2; // 4

Variables

- A way to keep track of little bits of data in your program.
- Kept in the browser’s memory until the page is closed.

Variables

Declare	`var quantity;`
Assign value	`quantity = 3;`
Shorthand	`var quantity = 3;`

Arrays

- A special type of variable that stores multiple values.
- Can hold any data type.
- Data is stored by a numerical index, which starts at 0.

Arrays

Declare

```
var myArray = [42, ‘hello’, true];
```

myArray

Index	Value
0	42
1	‘hello’
2	true

Arrays

Access	`myArray[0]; // 42`
Set Value	`myArray[0] = ‘world’;`

Functions

- A function groups a series of statements together.
- A function can be reused over and over.
- Can have “parameters” which are variables specific to the function as “arguments.”
- Usually “return” a value (but they don’t need to).

Functions

Define

```
function sayHello() {
    console.log('Hello World!');
}
```

Call

```
sayHello();
```

Functions with arguments

Define

```
function getArea(width, height) {
    return width * height;
}
```

Call

```
getArea(3, 5);
```

Objects

- Group data in key/value pairs

- Can hold “properties” (variables) and “methods” (functions)

Objects

Define

```
var dog = {
  name: 'Margo',
  age: 6,
  speak: function() {
    console.log('WOOF')
  }
}
```

Access

```
dog.name; // Margo
dog.speak(); // WOOF
```

Built-in Objects

Browser Object

Window
Document
History
Location
Navigator
Screen

Browser Object Examples

Get Window Height	`window.innerHeight;`
Set Location Browser	`location.assign(‘http://bu.edu');`
Get Screen Orientation	`screen.orientation;`
Get HTML Element	`document.querySelector(‘.myClass’);`

Global JS Objects

String
Number
Boolean
Date
Math
Regex

Global JS Object Examples

```
var s = “My String”;
```

```
s.replace('my', ‘your’);
```

```
var pi = 3.141592653589793;
```

```
pi.toPrecision(3);
```

```
Math.round(pi);
```

```
var today = new Date();
```

```
today.getFullYear();
```

Next Week

- Group critique

- Read chapters 4 & 5