**Data Types, Objects, Properties, Methods**

JavaScript remains at the core of web development.

1. **General JavaScript**

- Keyword: words built into language, that can be recognized by computer.

- The semicolon denotes the end of the line, or statement. Although in JavaScript your code will usually run as intended without a semicolon.

- Comments: like C (// or /\* \*/)

1. **Console**

- Is a keyword, which refers to the panel that displays the output/errors (terminal)

- A **method** that is built to **console object** is .log(), which prints.

**console.log(<thing-to-print>)**

1. **Data Types**

- Number (both int and float), Boolean

- String: can use both ‘’ or “”

- null

- undefined: It also represents the absence of a value though it has a different use than null. undefined means that a given value does not exist.

- Symbol: A newer feature to the language, symbols are unique identifiers, useful in more complex coding.

- Object: Collections of related data

1. **Operators**

Arithmetic: +-\*/% Dot operator: .length

1. **Strings**

- Concatenation (+); Cannot do string multiplication like Python

- Interpolation: Merge variables into string outputs like C

console.log(`<left-string-content> ${<variable>} <right-string-content>`);

NOTE: The string is wrapped by backticks ` (left of 1 key on keyboard) !!!!!!!

Note that strings in JS, like Python, can also be indexed.

1. **Properties:**

Every time an instance of the data type is saved, it has properties saved to it (like classes). We can access these by using

**<instance-name>.<property>**

*e.g. “Hello”.length 🡪 5*

1. **Methods**

Calling methods are similar to Python. We do this by using:

<instance-name>.<method-name>(<parameter-if-any>)

e.g. console.log('hello'.toUpperCase()); // Prints 'HELLO'  
console.log('Hey'.startsWith('H')); // Prints true

1. **Built-in Objects**

//Everything in JavaScript is a freaking object loll

The objects, especially built-in objects, have methods. For example, if we want to perform more complex mathematical operations than arithmetic, JavaScript has the build-in Math object.

**Math.random();**

Create a random decimal between 0 and 1 🡪 If we want to generate a random number between 0 and x

**Math.random() \* (x+1);** *// (x+1) because 0 is inclusive, 1 is exclusive*

Or if we want to rounds down to the nearest whole number:

**Math.floor(Math.random() \* 50);** *// Random int [0,50)*

As we’ve used, Number is also Built-in Object. Remember that there are 2 ways to call a method:

+) Class.method(instance)

+) instance.method()

Note that we must use method 1 for Number, Math, and method 2 for String.

e.g. Number.isInteger(2017) // true

String.length(“hello”) // ERROR

“hello”.length // 5