Foundation Coding - Week 1: Basics

Variables

- Variables are used to represent values.
- A string is a piece of text
- A number is something that you can use arithmetic on
- A Boolean is a true or false logic value
- There are several more data types in javascript

```
var aString = 'Good morning Vietnam!';
var aNumber = 7;
var aBoolean = true;
```

Variables

- Three common data types in code and javascript

JavaScript distinguishes between numbers, strings, and `true` or `false` values known as Booleans.

NUMERIC DATA TYPE
The numeric data type handles numbers.

`0.75`

For tasks that involve counting or calculating sums, you will use numbers 0-9. For example, five thousand, two hundred and seventy-two would be written 5272 (note there is no comma between the thousands and the hundreds). You can also have negative numbers (such as -23678) and decimals (three quarters is written as 0.75).

STRING DATA TYPE
The strings data type consists of letters and other characters.

`'Hi, Ivy!'`

Note how the string data type is enclosed within a pair of quotes. These can be single or double quotes, but the opening quote must match the closing quote.

Strings can be used when working with any kind of text. They are frequently used to add new content into a page and they can contain HTML markup.

BOOLEAN DATA TYPE
Boolean data types can have one of two values: `true` or `false`.

`true`

It might seem a little abstract at first, but the Boolean data type is actually very helpful.

You can think of it a little like a light switch – it is either on or off. As you will see in Chapter 4, Booleans are helpful when determining which part of a script should run.

Arrays

- Arrays are used for storing data
- We reference the data via the array index, which is a number reference, starting from 0.

```javascript
// An array
var arr = ['apple', 'orange', 'banana'];

// Index       0          1          2     etc....


// Logging 'banana' to the console
console.log(arr[2]);
```

Arrays

- Referencing an array and updating the DOM/HTML with it's content.


```javascript
JAVASCRIPT                                    c02/js/update-array.js

// Create the array
var colors = ['white',
              'black',
              'custom'];

// Update the third item in the array
colors[2] = 'beige';

// Get the element with an id of colors
var el = document.getElementById('colors');

// Replace with third item from the array
el.textContent = colors[2];
```

Objects

- An object is a coding *structure*
- Objects can store data *properties* and functions, functions inside of an object are called *methods*

Like variables and named functions, properties and methods have a name and a value. In an object, that name is called a **key**.

An object cannot have two keys with the same name. This is because keys are used to access their corresponding values.

The value of a property can be a string, number, Boolean, array, or even another object. The value of a method is always a function.

```
var hotel = {

    name: 'Quay',
    rooms: 40,
    booked: 25,
    gym: true,
    roomTypes: ['twin', 'double', 'suite'],

    checkAvailability: function() {
        return this.rooms - this.booked;
    }

};
```

● KEY
● VALUE

PROPERTIES
These are variables

METHOD
This is a function

Objects

- To access the data or functions in an object, we use dot `.` notation

References:

https://www.w3schools.com/js/js_arrays.asp

https://www.w3schools.com/js/js_variables.asp

https://www.w3schools.com/js/js_objects.asp

Images referenced from Duckett:
http://javascriptbook.com/