



Fullstack Web Development Tutorial Lesson 3

Today's lesson will cover

- Intro to Git
- Intro to JavaScript



Intro to Git

Git to know

- Git is a version control system
- Ideally you would install Git as a system, but in our case for convenience, install <https://desktop.github.com/>
- How to use?
 - Most common use case is explained in this [cheatsheet](#)
- To know more about Git (Wouldn't suggest worrying about at this stage)
 - [Official pro book](#)

Git to do

- How you can start using:
 - Create remote repository on your Github. i.e. theshortcut-fullstack
 - Clone the remote repository on a local directory using this command: `git clone [url of your repository]`
 - Work on local repository and once you want to submit tasks
 - i. `git add .`
 - ii. `git commit -m "Commit description detail in short"`
 - iii. `git push origin master`
- If your repository is public, we will be able to check submissions without access however, if you would like to make it private, please add the mentors as contributors of your repository



Intro to JavaScript

Get started with JavaScript

- Javascript was initially intended to be a programming language for browsers
 - Now can be used on browser, web-server or any host with platform specific functionality of *host environment*
- `<script>` element attributes (such as `type="text/javascript"`) are dated as of HTML5 unless you want to use for JavaScript modules
- A single `<script>` can't have both `src` and `script` within the element
- Comments help describe what the code does and why but the engine ignores comments when executing programme
 - Single line comment: `// Comment`
 - Multiline comment: `/* comment
Comment */`
 - Nested comments will die with an error
- On browser you can interact with JavaScript with `alert`, `prompt` and `confirm`

Data types in JavaScript

There are 8 basic data types in JavaScript.

- `number` for numbers of any kind: integer or floating-point, integers are limited by $\pm 2^{53}$.
- `bigint` is for integer numbers of arbitrary length.
- `string` for strings. A string may have zero or more characters, there's no separate single-character type.
 - a. Double quotes: "Hello"
 - b. Single quotes: 'Hello'
 - c. Backticks: `Hello`
 - i. Extended functionality quotes
- `boolean` for `true/false`.
- `null` for unknown values – a standalone type that has a single value `null`.
- `undefined` for unassigned values – a standalone type that has a single value `undefined`.
- `object` for more complex data structures.
- `symbol` for unique identifiers.

The `typeof` operator allows us to see which type is stored in a variable.

- Two forms: `typeof x` or `typeof(x)`.
- Returns a string with the name of the type, like `"string"`.
- For `null` returns `"object"` – this is an error in the language, it's not actually an object.

Variables in JavaScript

- Variables are containers that store values
 - Now used `let`, previous codes may use `var`
 - Declaring twice triggers an error
 - After assigning a value to a variable, you can change it later in the code
 - Const: Constants and value can't be reassigned
- Variables can hold different data types
 - String, Numbers, Boolean, Array and Object

Basic Operators in JavaScript

- Addition (+): Works with numbers and also strings
- Subtraction (-), multiplication(*), division(/): For math
- Assignment(=): Assigns value to variables. It's possible to chain assignments. i.e. `a = b = c = 2 + 2;`
- Equality(==): Returns true/false
 - Example:

```
let myVariable = 3;  
myVariable === 4;
```

Functions in JavaScript

- Functions are a way of packaging functionality that you wish to reuse. It's possible to define a body of code as a function that executes when you call the function name in your code. This is a good alternative to repeatedly writing the same code.
- If you see something which looks like a variable name, but it's followed by parentheses— () —it is likely a function. Functions often take arguments: bits of data they need to do their job. Arguments go inside the parentheses, separated by commas if there is more than one argument.
- Two ways to write function: regular function expression and arrow function expression

Conditionals in JavaScript

- Conditionals are code structures used to test if an expression returns true or not. A very common form of conditionals is the `if ... else` statement.
- Sometimes, we'd like to test several variants of a condition. The `else if` clause lets us do that.
- Conditional operator: Represented by `?`
 - Known as Conditional, Question mark, or ternary operator, because it has three operands

Events in JavaScript

- Real interactivity on a website requires events handlers. These are code structures that listen for activity in the browser, and run code in response
- Basic HTML events: https://www.w3schools.com/js/js_events.asp
- Refer to all events in JavaScript when working on a project. Don't overwhelm yourself trying to learn about all. Only follow documentation and usage on need by need basis.

Practicing JavaScript for HTML DOM manipulation

- Use `document.querySelector` to change a text element value
- Use `document.querySelector` to change image



Self Study Assignments

To Dos

- Start freecodecamp Javascript. Ideally finish before we resume after summer.
- Continue with FCC HTML, CSS lessons. Ideally finish all the lessons by end of this month.
- Work on the HTML, CSS assignments to make the projects as complete as you desire and push latest version on Git repository
- Share your freecodecamp profile link with Elena so that we can track your progress by Friday 05 June, 2020