



Fullstack Web Development Tutorial Lesson 4

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](#)



Intro to JavaScript

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



Feedback

What works best for you?

- What do you prefer when it comes to individual and peer to peer tasks?