Front End Software Development

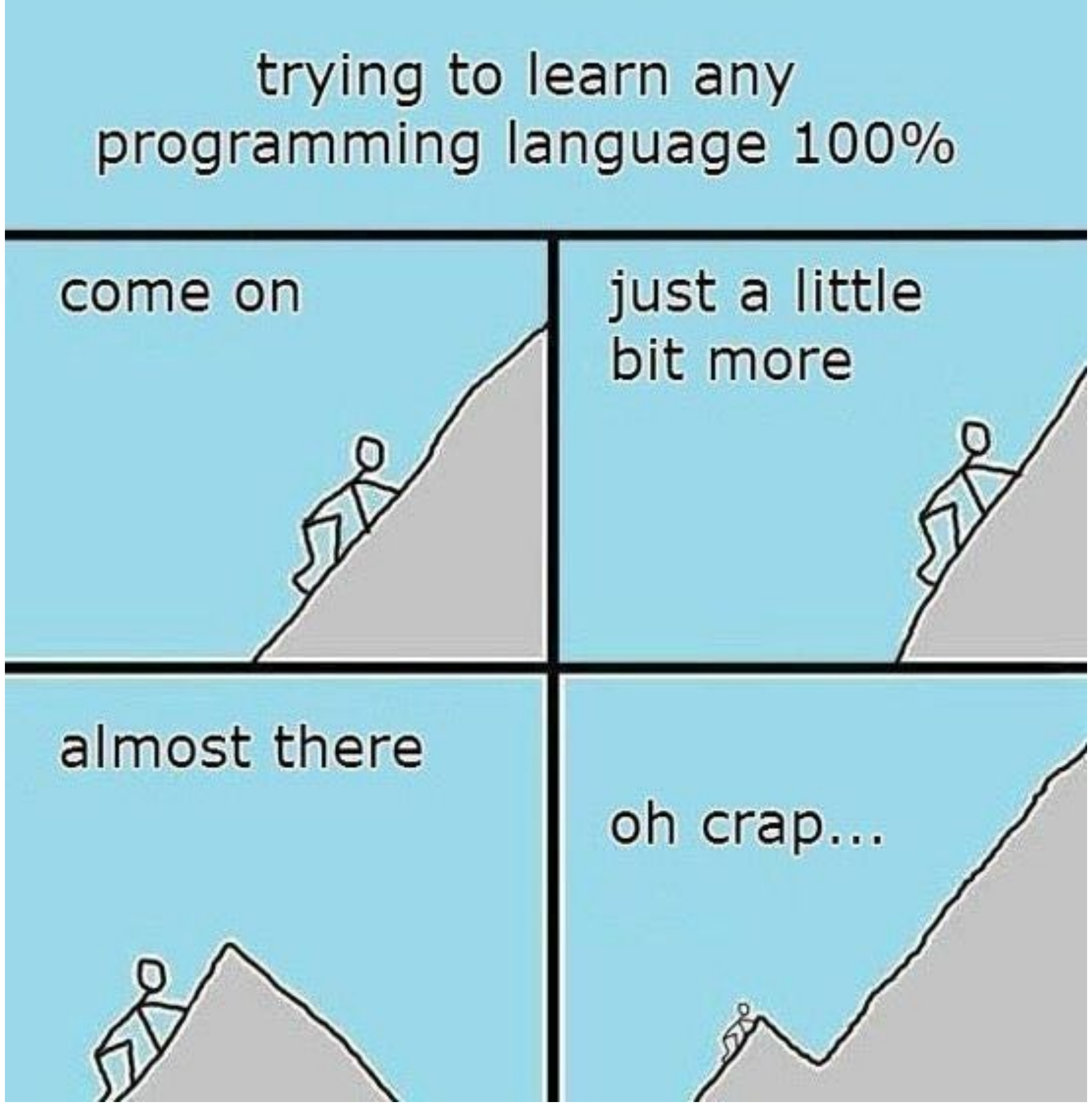
Introduction to JavaScript (weeks 1 - 6)

Week 01

Agenda

- Questions
- What is Programming?
- Command Line / Shell
  - Common commands / OS Comparison
- Source Control / GIT
- Variables & Data Types
- Operations

Questions


trying to learn any programming language 100%
come on
just a little bit more
almost there
oh crap...

What is?

(Programming)

- Types of Programming Languages
  - Compiled (machine / CPU level code)
    - Assembly, C, C++, Pascal, Rust, Go
  - Scripted / Interpreted
    - **JavaScript**, PHP, Ruby, Python, Java, C#
- Classification
  - Procedural
  - Object-Oriented
  - Functional

Command Line / Shell

Windows

- Command Prompt
- PowerShell

MacOS, Linux, BSD, UNIX, etc.

- BASH (**B**ourne **A**gain **SH**ell)
- Zsh (**Z** **sh**ell)

Home / Users Folder *(Directory)*

C:\Users\yourusername

/Users/yourusername
/home/*yourusername*

Take note of the difference in the path
separators between Operating Systems: \ vs. /

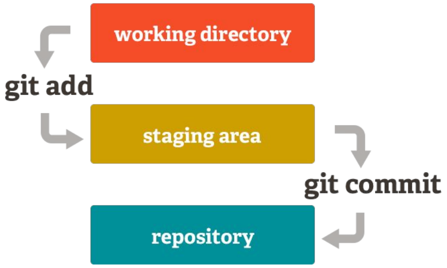
Command Line / Shell

(Common commands / OS comparison)

Windows	MacOS / Linux	Description
dir dir foldername	ls ls foldername	Displays list of folders and files.
cd foldername cd ..	cd foldername cd ..	Changes the current folder. Note: .. is the directory above
cd	pwd	Displays the name of the correct directory.
mkdir foldername	mkdir foldername	Creates a folder
rmdir foldername	rm foldername	Deletes a folder
copy from to	cp from to	Copies a file.
del filename	rm filename	Deletes a file.
move from to	mv from to	Moves and/or renames a file.
cls	clear	Clears the screen
type filename	cat filename	Displays the contents of the file.
help command	man command	Displays help / usage for a command.

Source Control / GIT

- Distributed vs Centralized
  - **GIT**, SVN, CVS, Mercurial, Subversion, TFS, Bazaar, …
- Typical Workflow
  - Modify Files > Add > Commit **[> Push]**
    push *makes commits available for other developers.*
  - Local vs remote repository
    commit != **push**



working directory

git add

staging area

git commit

repository

- Tips
  - Focused Commits
  - Commit Early / Commit Often *(First In Wins)*
  - Branching Strategies – Bug Fix, New Features

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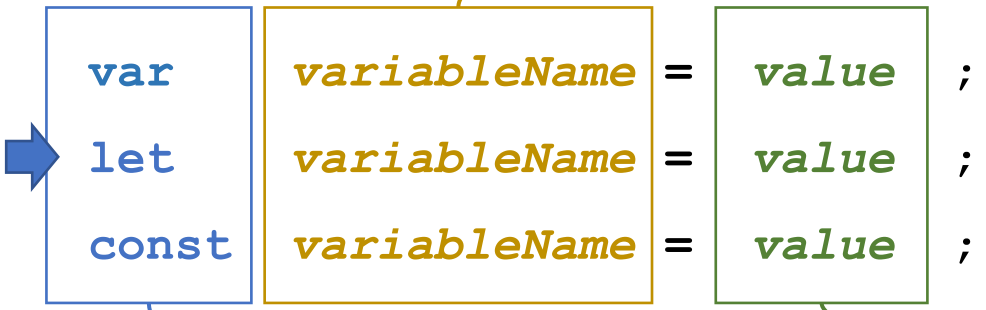
Source Control / GIT

Variables & Data Types

- Cannot start with number or punctuation except _
- No spaces (use _)
- Use camelCase



```
var    variableName = value ;
let    variableName = value ;
const  variableName = value ;
```

var

- Scope – Hoisted to top of function block Optional *(*warning: global variable)*

let

- Scope – Hoisted to top of code **{ }** block *(most programming languages)*

const

- read only, once set cannot be changed

Type	Examples
boolean	true, false
number	-10, 1.12, 63, 99
string	"Tom", 'Alvin'
symbol	Symbol(“key“)
object	{ age: 5 }
array	[1, 2, 4]
null	
undefined	

```
const salesTax = 0.055;
var isRaining = false;
var name = 'Sam';
let state = "AZ";
let age = 45;
let index = 0;
temperature = 212;
```

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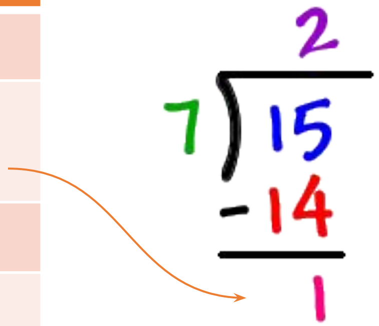
Declaring Variables / Naming Conventions

Operations

Arithmetic Operators

Operator	Description	Examples
/	Division	4/2 = 2, 5/2 = 2.5
%	Modulus (Remainder)	4/3 = 1, 15/7 = 1
*	Multiplication	5*2 = 10, 1*0=0
+	Addition	3+9=12, 7+2=9
-	Subtraction	4-4=0, 9.3-1.2=8.1



Equality Operators

Operator	Description
==, ===	Is equal, (same type)
!=, !==	Is not equall, (same type)
<, <=	Less than, less than or equal
>, >=	Greater than, greater than or equal

```
let a = 5;
let b = 10;
let c = a + 5; // 15
let b = c * a; // 65
let a = 1+2*2; // 5
let a = (5+5)/2; // 5
(b == b) // true
(b == c) // false
(a != c) // true
(b > c) // true
(a > c) // false
"b" == 'b' // true
"c" == "C" // false
```

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Operations: Mathematics & Equality