

Javascript

CC Lab Week 1

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Class File + Syllabus

<https://github.com/peterobbin/CCLab2016>

Javascript

Arduino

Unity

openFrameworks

NOT related to Java (although some similarities exist)

Lightweight, interpreted programming language.

Object-oriented, prototype-based

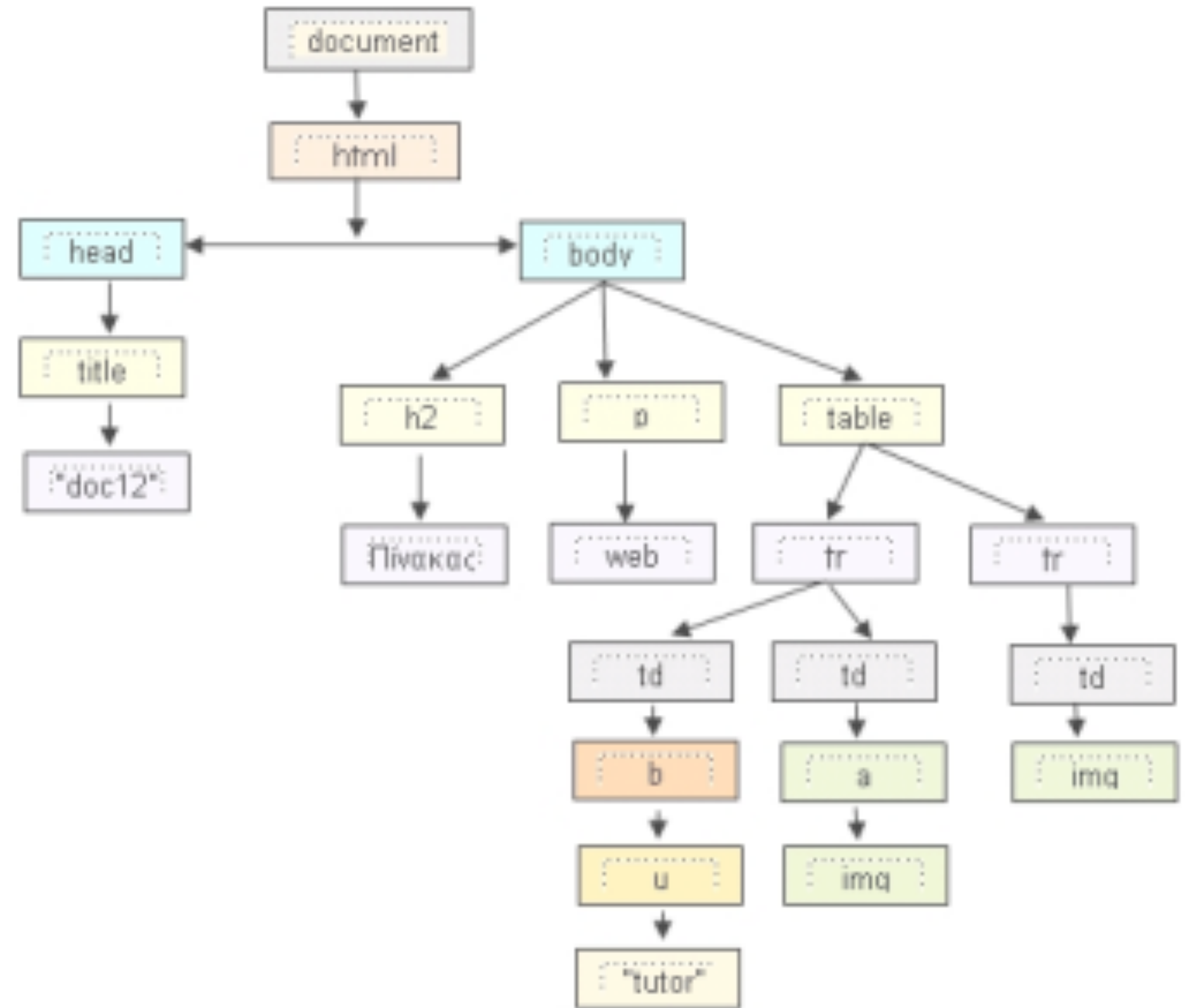
Most well-known as scripting language for web pages

JS is built into web browsers

Useful for its ability to access and programmatically manipulate the elements in HTML/CSS, adding interactivity to web pages

DOM: Document Object Model

The DOM provides a way to represent, store, and manipulate the web page elements as objects (represented as a tree or node structure). JavaScript can call these objects and programmatically alter anything that is written in the HTML document.



Variable

Variables are containers for storing data values. Variables can be booleans, numbers, strings, arrays*, objects.

//all variables in JS are declared with var

```
var num = 3;
```

```
var _name = "hello";
```

```
var excited2BeHere = true;
```

```
var count = [0,1,2,3];
```



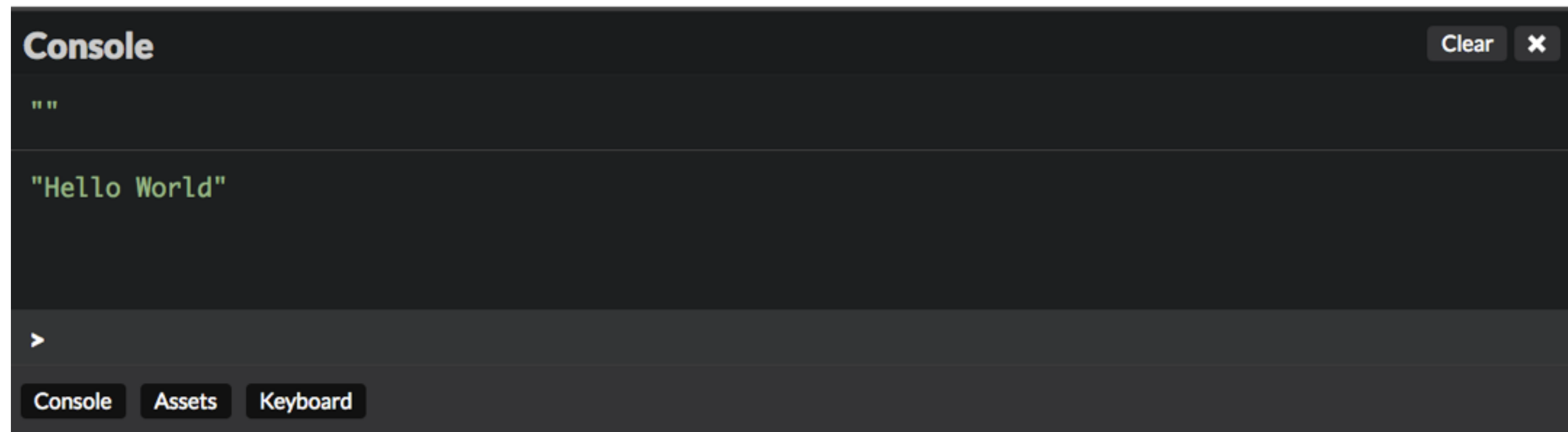
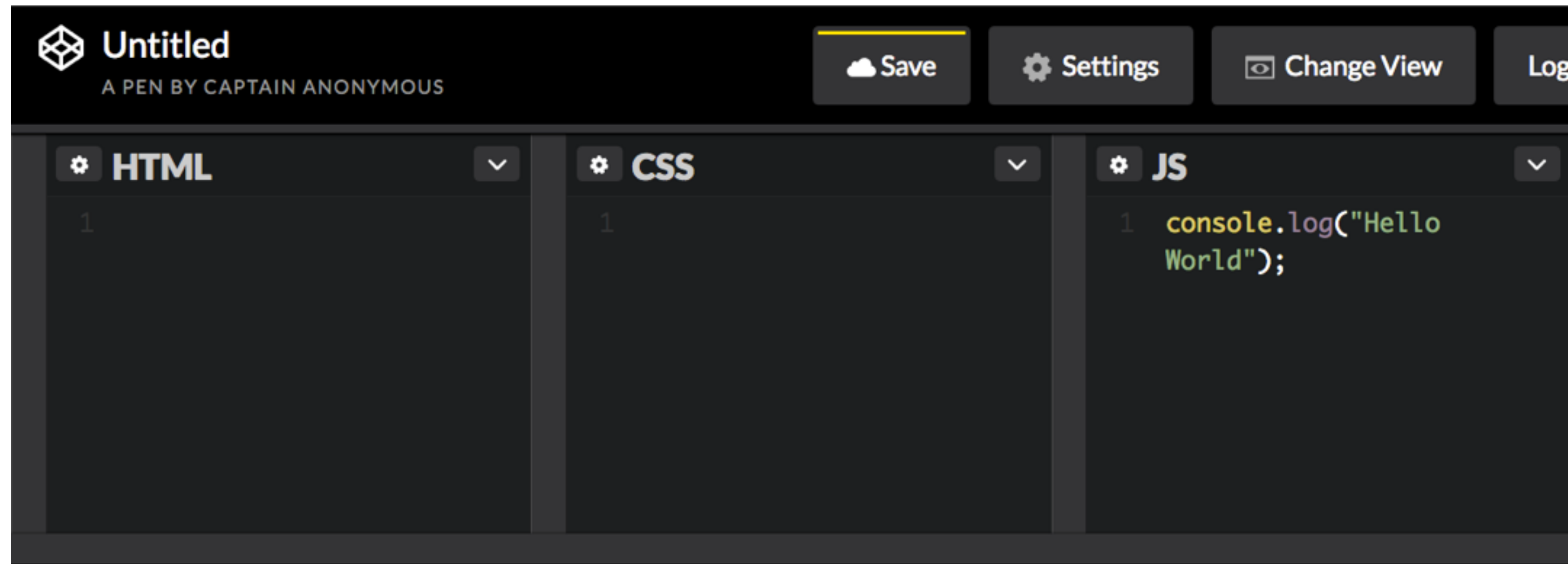
```
console.log( Anything );
```

```
console.log("good morning");
```

```
console.log(14);
```

```
console.log(newNumber);
```

Using [codepen.io](#)



<https://codepen.io/>

practice using variable

- create two variable (number or string)
- use `console.log()` to display them in console

Function

A function is a set of statements that performs a task.

// to define a function, you need a function name, parameters inside the parentheses (), and statements inside the curly brackets { }

```
function addingNumbers (num1, num2){  
    return num1 + num2;  
}
```

// for the function to execute, it needs to be called somewhere else in the code.

```
addingNumbers(1,2);
```

practice using function

- create two variables
- create a function that take two parameters
- do some math inside it
- don't forget to return a number
- feed in the variables to the function and `console.log()` it!

Arrays

JavaScript arrays are used to store multiple values in a single variable.

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

//Arrays store multiple values in one variable (like objects!)

```
var animals = ["rabbit", "cat", "hamster"];
```

//Arrays in JS can contain varied data types

```
var thingsILike = ["cookies", 2, "bunny"];
```

//Arrays can even contain objects and other arrays!

```
var student = {firstName: "Sven", lastName: "Travis", height: 900};
```

```
var myArray = [student, "42"];
```

Array Index

Array:	Indexes	0	1	2	3	4
	Values	1	3	8	23	99

Arrays Properties

```
var animals = ["rabbit", "cat", "hamster"];
```

```
animals.length;
```

Arrays Methods

```
animals.push();
```

http://www.w3schools.com/jsref/jsref_obj_array.asp

practice using array

- create an array with two variable
- `console.log()` the second member in the array
- add a variable to the end of the array
- `console.log()` the size of the array

For Loop

```
for (var i = 0; i < array.length; i ++){  
  
}
```

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

practice using for loop and array

- create an array
- `console.log()` from index begin to index end
- try `console.log()` backward!

Objects

Objects can contain many values

Written with curly braces { }, with object properties written in **name:value pairs** and separated by commas

//literal notation

```
var student = {  
    firstName: "Sven",  
    lastName: "Travis",  
    height: 900  
};
```



```
//constructor notation
```

```
var student = new Object();
```

```
student.firstName = "Sven";
```

```
student.lastName = "Travis";
```

```
var firstname1 = sven["firstName"];
```

```
var firstname2 = sven["lastName"];
```

```
var firstname1 = sven.firstName;
```

```
var firstname2 = sven.lastName;
```

practice using object

- create two new object of your name choice (one using literal notation, one using constructor notation)
- add two properties to each of the objects (number, string)
- use a function to do some math to the function properties
- `console.log()` the returned number!~

Sublime

<https://www.sublimetext.com/3>

Package Control

<https://packagecontrol.io/>

Linking Javascript File

```
<script type="text/javascript" src = "[relative file location]"></script>
```

Add Event Listener

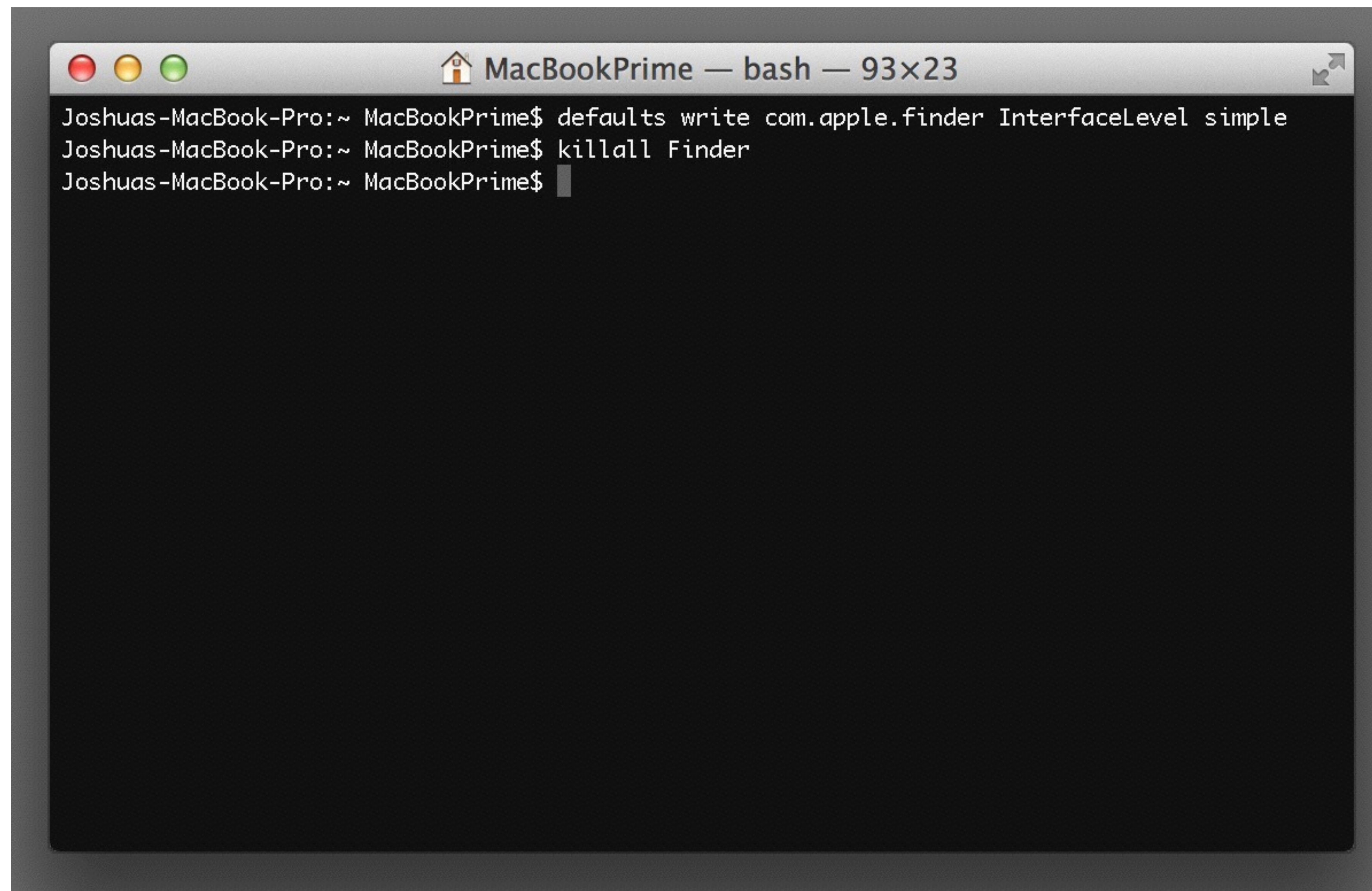
```
document.addEventListener("DOMContentLoaded", function(){  
  
});
```

<http://javascript.info/tutorial/onload-ondomcontentloaded>

HTML + CSS + JS Practice

- animating a simple html file

Terminal

A screenshot of a macOS Terminal window. The title bar at the top shows three colored window control buttons (red, yellow, green) on the left, a home icon followed by the text 'MacBookPrime — bash — 93x23' in the center, and a close button on the right. The terminal area has a black background with white text. It shows three lines of text: 'Joshuas-MacBook-Pro:~ MacBookPrime\$ defaults write com.apple.finder InterfaceLevel simple', 'Joshuas-MacBook-Pro:~ MacBookPrime\$ killall Finder', and 'Joshuas-MacBook-Pro:~ MacBookPrime\$' followed by a grey cursor block.

```
Joshuas-MacBook-Pro:~ MacBookPrime$ defaults write com.apple.finder InterfaceLevel simple
Joshuas-MacBook-Pro:~ MacBookPrime$ killall Finder
Joshuas-MacBook-Pro:~ MacBookPrime$ █
```

⌘ + Space or Ctrl + Space
type “terminal”

```
MINGW32:~/git
Welcome to Git (version 1.8.3-preview20130601)

Run 'git help git' to display the help index.
Run 'git help <command>' to display help for specific commands.

Bacon@BACON ~
$ git clone https://github.com/msysgit/git.git
Cloning into 'git'...
remote: Counting objects: 177468, done.
remote: Compressing objects: 100% (52057/52057), done.
remote: Total 177468 (delta 133396), reused 166093 (delta 123576)
Receiving objects: 100% (177468/177468), 42.16 MiB | 1.84 MiB/s, done.
Resolving deltas: 100% (133396/133396), done.
Checking out files: 100% (2576/2576), done.

Bacon@BACON ~
$ cd git

Bacon@BACON ~/git (master)
$ git status
# On branch master
nothing to commit, working directory clean

Bacon@BACON ~/git (master)
$
```

Git for windows: <https://git-for-windows.github.io/index.html>

Babun: <https://babun.github.io/>

list folder content

ls

Change directory

cd [folder name]

home directory

cd ~

go upstream

cd ..

open current folder

open .

<https://github.com/0nn0/terminal-mac-cheatsheet>

list folder content

ls

change directory

cd [folderName]

home directory

cd ~

go upstream

cd ..

open current folder

open .

create new file

touch [fileName.extension]

create new folder

mkdir [folderName]

remove folder

rm -r newTest

<https://github.com/0nn0/terminal-mac-cheatsheet>

practice using terminal

- create a new folder on your Desktop
- create a new file inside new folder
- remove that file
- remove folder

What is Git?

[https://en.wikipedia.org/wiki/Git_\(software\)](https://en.wikipedia.org/wiki/Git_(software))
<https://www.git-tower.com/blog/git-cheat-sheet/>

Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

[https://en.wikipedia.org/wiki/Git_\(software\)](https://en.wikipedia.org/wiki/Git_(software))
<https://www.git-tower.com/blog/git-cheat-sheet/>

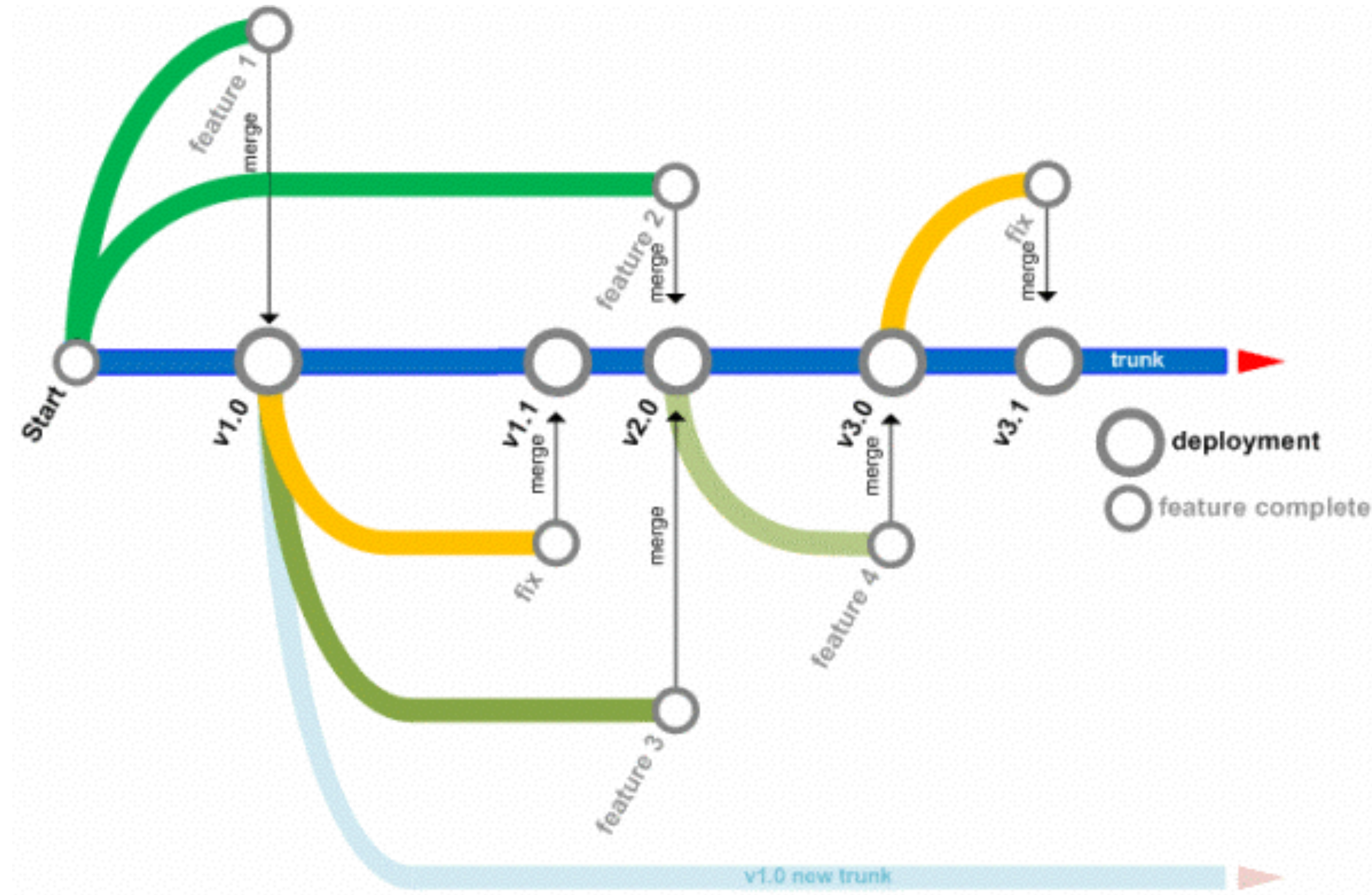


image credit @ronaldwidha



GitHub is a web-based Git repository hosting service.

Homework

Create your simple html file, then use JS to animate it.