JavaScript

CC Lab Week 1

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Class Files + Syllabus

http://github.com/pfengx/cclab2016

JavaScript

Arduino

openFrameworks

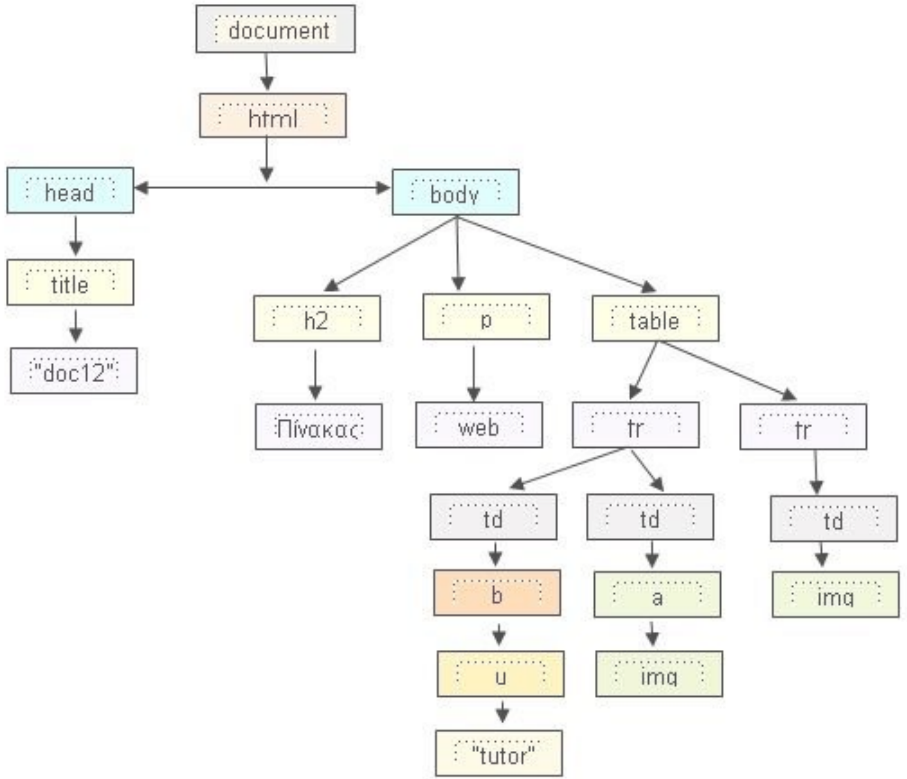
Unity

JS is...

- 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.



Variables

Variables are containers for storing data values.

Variables can be **booleans**, **numbers**, **strings**, **arrays**, **objects**.

Variable names must begin with a **letter**, **_**, **or $** (not to be confused with JQuery) **. Variable names are case sensitive**.

```
// All variables in JS are declared with var

var excited2BeHere = true;

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

var num = 3;

var _name = “hello”;
```

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 addNumbers (num1, num2) {
    return num1 + num2;
}
```

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

```
addNumbers(1,2);
```

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”];
```

Manipulating Arrays

There are a bunch of properties and methods for you to manipulate arrays.

```
var animals = [‘hamster’,’bunny’,’pikachu’];

animals.length

animals.push()

...
```

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

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;
```

Homework

1. Set up a Github repository. Repository naming format:

fengp239_cclab2016

2. Use JavaScript to manipulate the DOM and make something shiny and animated!

3.(Upload it to your GitHub)

Terminal

list folder content **ls**

change directory **cd [folderName]**

go to home directory **cd ~**

go upstream **cd ..**

open current folder **open .**

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

How to Set Up Github

http://burnedpixel.com/blog/setting-up-git-and-github-on-your-mac/

To set up a repository:

https://help.github.com/articles/adding-an-existing-project-to-github-using-the-command-line/

Alternatively, you can also use Github Desktop (it has a GUI)

https://desktop.github.com/