

Welcome to Creative Computing Lab, Fall 2013

We will be learning things, but most importantly, creating things – computational things. And having fun while doing so!

Instructor: Paweena Prachanronarong

This class will cover:

- **JavaScript** – code that lives in your browser or online; coding to control and understand the internet
- **Arduino** – code for physical computing that lives on a microcontroller; coding to control and understand electricity
- **openFrameworks** – code that lives on a computer; coding to control and understand almost anything

SYLLABUS

CC LAB BACK THEN

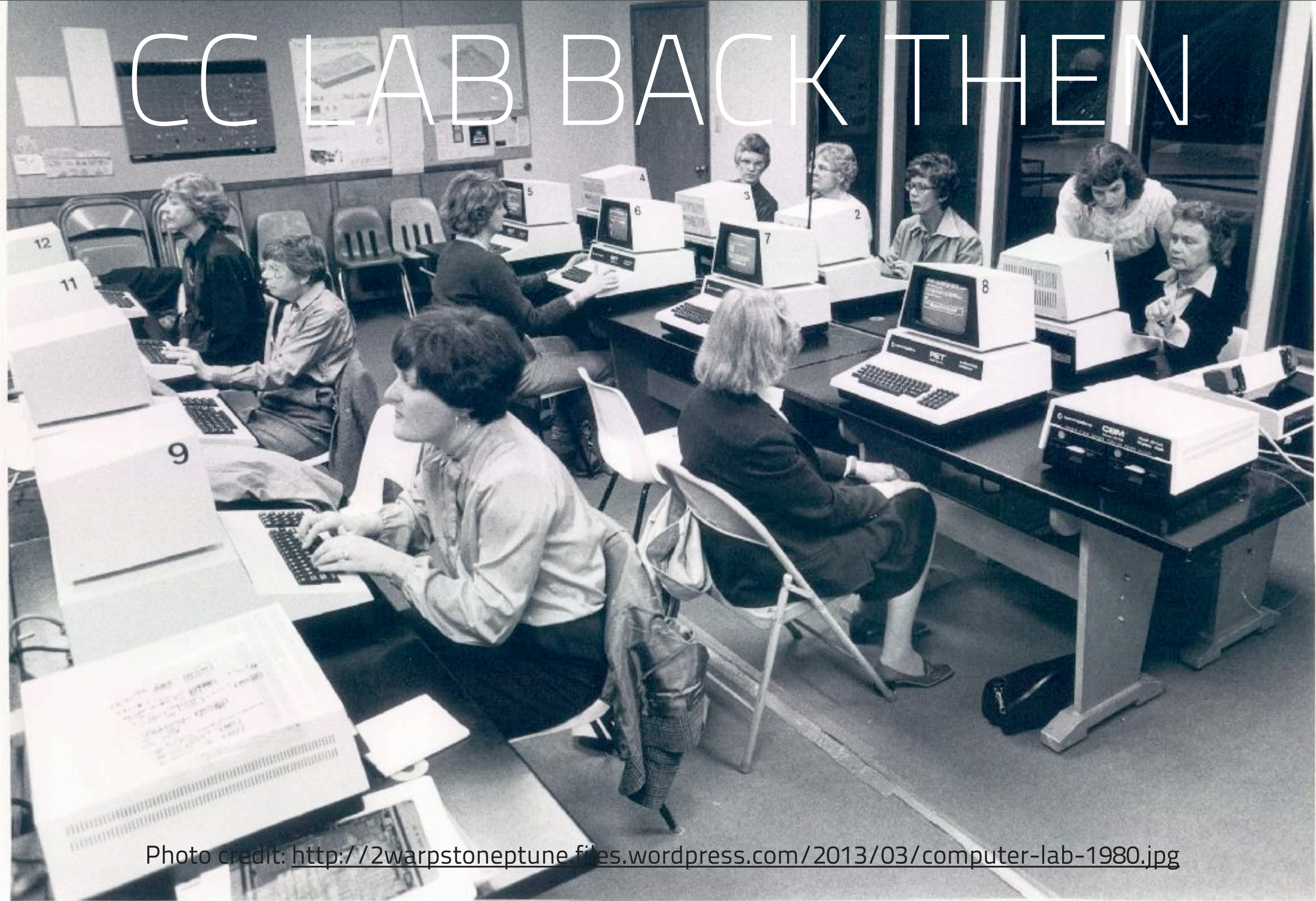


Photo credit: <http://2warpstoneptune.files.wordpress.com/2013/03/computer-lab-1980.jpg>

JavaScript?!

- A programming language interpreted by browsers.
- Scripts that interact with the user, control the browser and communicate asynchronously.
- Now used both client-side and server-side, in game development and desktop applications.

Wait, why JavaScript?

JavaScript is extremely **powerful**,
shareable and **extensible**, and will
help you get a **job**.

We will be taking what you've learned in BOOT (code + web) and applying it to your browser. You won't believe how similar Processing is to JavaScript.

In fact:

- Processing is an API written in **Java** (P5 is essentially a giant library to make creative coding in Java easy).
- JavaScript shares **nearly identical syntax** as Java, and shares many of the same **standard naming conventions**.
- Processing's API has been fully ported to JavaScript – it's called **"Processing.js"**

Except:

- Processing is coded in a **standalone IDE** (Integrated Development Environment), and then executed as a **desktop app** (Java applet).
- JavaScript is coded in a **text editor**. It's then run by a **browser** (Chrome, Firefox, Opera, Safari, IE).
- We'll be using SublimeText2 and **Chrome**.



Photo credit: <http://uglytechandbusiness.files.wordpress.com/2011/04/pointing-at-you.jpg>

Who are you?

Where are you from?

Why are you here?

How much experience do you have with
JS/Arduino/oF?

What are some other classes you're
taking?

Three things you like to do for fun.



Photo credit: <http://hudabeauty.com/wp-content/uploads/2012/07/B-ndchen-gisele-bundchen-27935273-1024-768.jpg>

Expectations:

- I do not expect anyone to become an expert in any of these areas, since this class is meant to give you a general overview of JS, Arduino and oF.
Note: I won't hold it against you if you do become an expert ;-)
- I am not grading you on who has to coolest projects, but how much you've grown as a student. **I am looking for personal growth and how much you push yourself.**
- Write about something you learned on your own every week on the blog.

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LET'S LEARN A LITTLE!

Datatypes in JavaScript:

In Processing, you *hopefully* remember that **variables can be declared as several datatypes:**

- integers (`int`)
- floating point numbers (`float`)
- strings (`String`)
- booleans (`boolean`)

In JavaScript, variables of **all data types** are declared as:

- **var**

var:

Is how we declare ints, strings, floats, bools, arrays, functions and even objects.

```
var integerValue = 4;  
var floatValue = 3.1415926;  
var aStringValue = "my name is";  
var trueOrFalse = true;
```

...seriously.

Document setup:

Open up SublimeText2 (or your favorite text editor) and let's start

```
1 <!DOCTYPE html>
2 <html>
3     <head>
4         <title>My Basic HTML</title>
5     </head>
6     <body>
7         <script type="text/javascript">
8             //this is where javascript lives
9         </script>
10    </body>
11 </html>
```

The console:

(in Processing)

```
void setup() {  
  for (int i=0; i<100; i+= 11) {  
    print("this is processing's console: ");  
    println(i);  
  }  
}
```

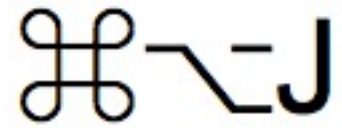
```
void draw() {
```

```
this is processing's console: 33  
this is processing's console: 44  
this is processing's console: 55  
this is processing's console: 66  
this is processing's console: 77  
this is processing's console: 88  
this is processing's console: 99
```

8

The console:

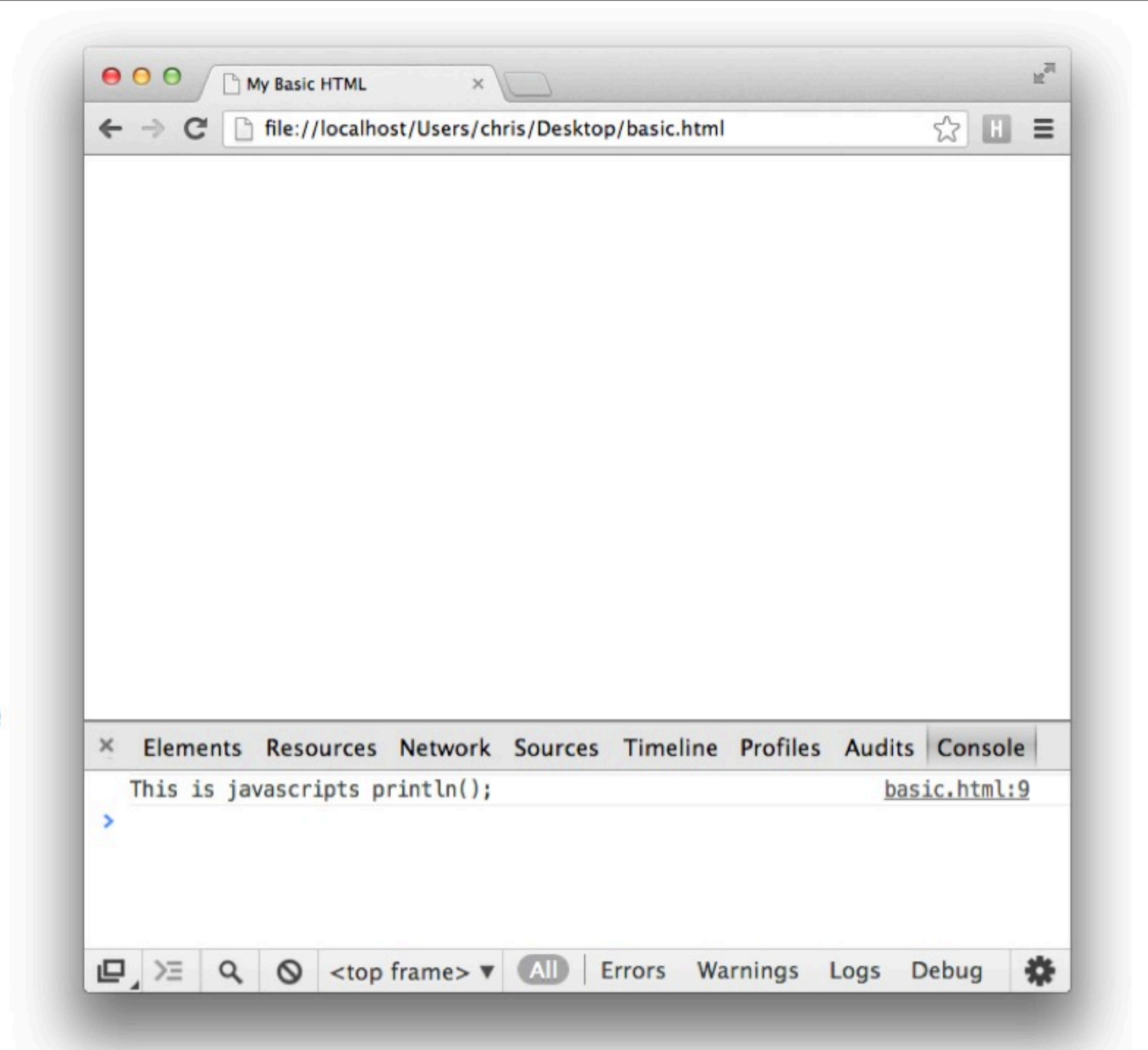
(in Chrome)



View >

Developer >

Javascript Console



Printing to the console:

(in JavaScript)

```
<script type="text/javascript">  
  //this is where javascript lives  
  console.log("This is javascripts println()");  
</script>
```

Compile your code:

- Save this file as "**cclabweek1.html**" on to your desktop.
- Right-click and open with **Chrome**.
- Open the **console** in Chrome. (**cmd + option + j**)
- **BLAM! BLA-BLAM!**

Homework (yay!):

1. Register on the class blog: <http://fall2013cclab.wordpress.com/>
2. Create a "mad libs" generator in JS.

- declare at least **6 vars** for nouns, verbs, adjectives
- concatenate these vars to construct a full sentence
- print the sentence out to the console

EXTRA CREDIT: Display the sentence in a single `<div>` in your HTML

EXTRA EXTRA CREDIT: Mouse click/button press to erase + restart

3. Post code and references to the blog (**can include people too!**).
4. Write about one thing you learned on your own on the blog.

References:

- <https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5>
- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Values,_variables,_and_literals
- <https://developers.google.com/chrome-developer-tools/docs/console>
- **Super fancy JS Mad Libs example:** <http://transmedia.trinity.edu/~fregina/javascript/madlibs/madlib.html>