Let's make a web game!

What will we cover today?

- The canvas element

- Phaser, a JavaScript framework

- Setting up a local server

- Making an HTML5 page

- Setting up Phaser

- Creating a simple game

What is canvas?

A canvas is a rectangle in your HTML page where you can use JavaScript to draw anything you want.

credit: Photon Storm

What is Phaser?

Phaser is an open source JavaScript framework made for HTML5 game developers by HTML5 game developers.

credit: Photon Storm

What's a framework?

Frameworks help to reduce the amount of time spent reinventing the wheel.

They come with a large set of tools to help you accomplish tasks faster.

Setting up a local server
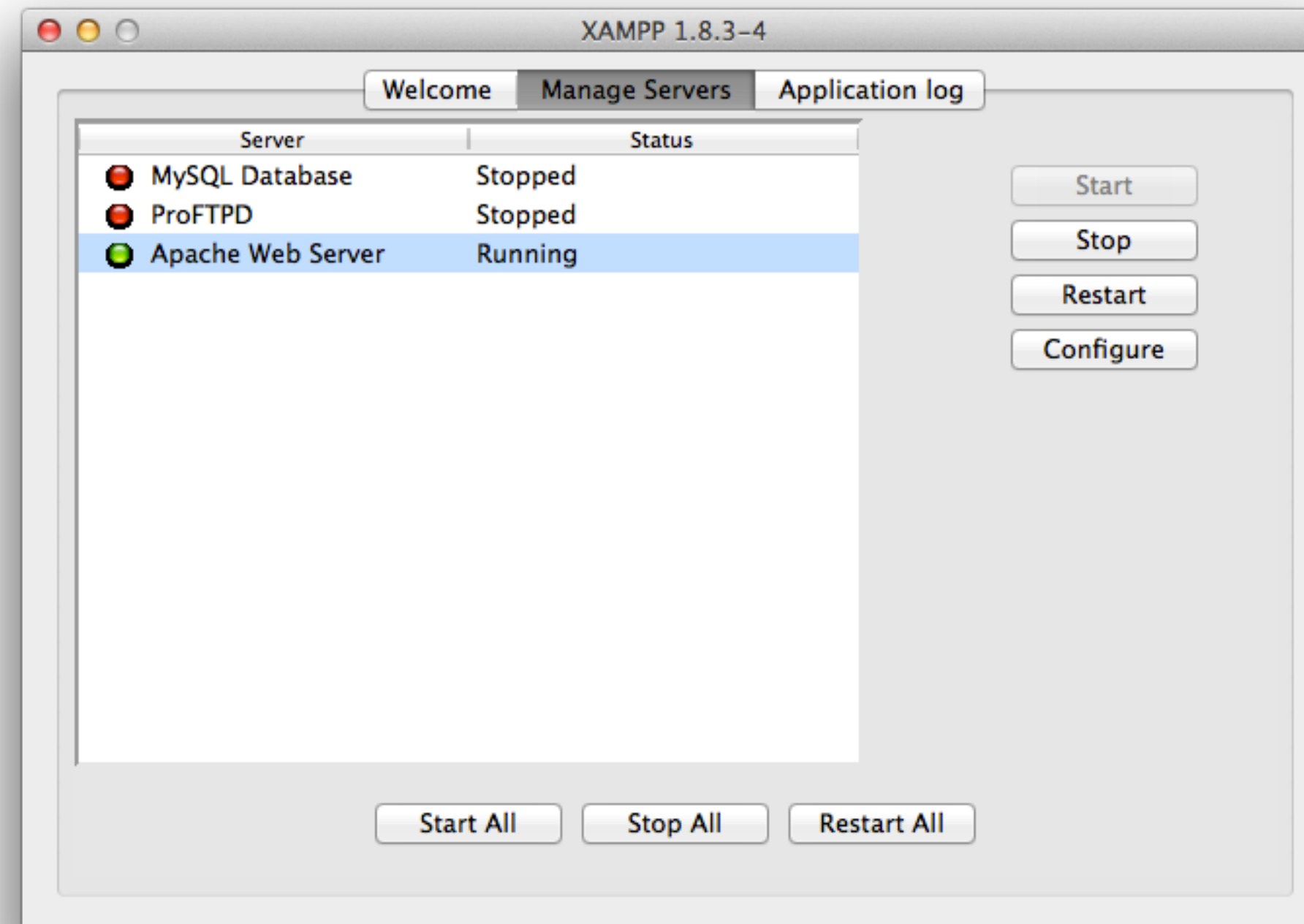
credit: Silicon Angle

Local servers

Local servers allow you to test websites you've programmed without an internet connection.

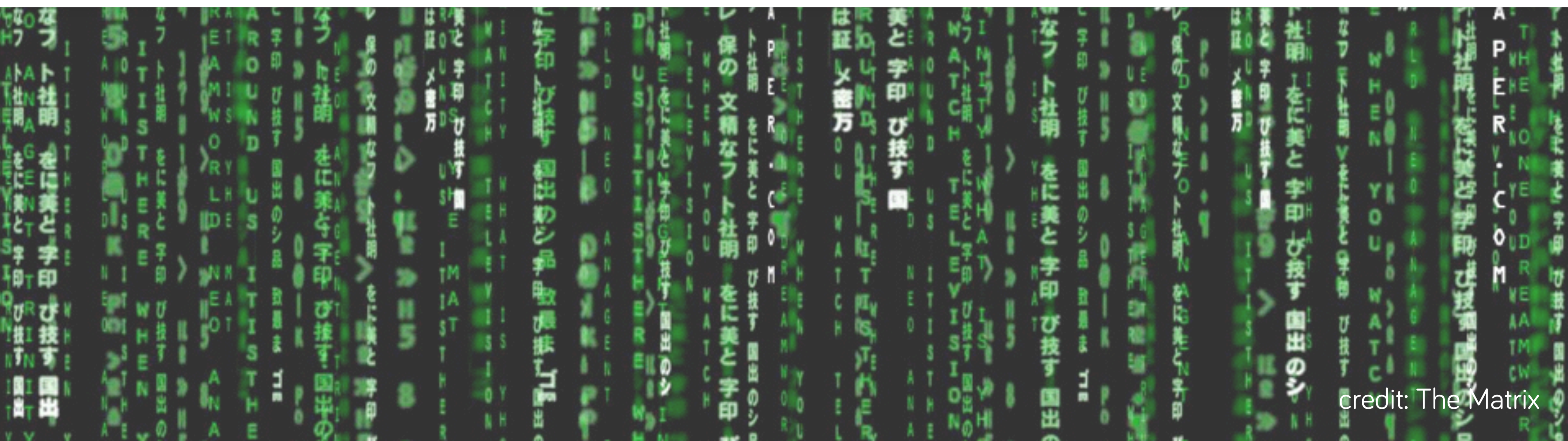Phaser requires a server to run for security reasons.
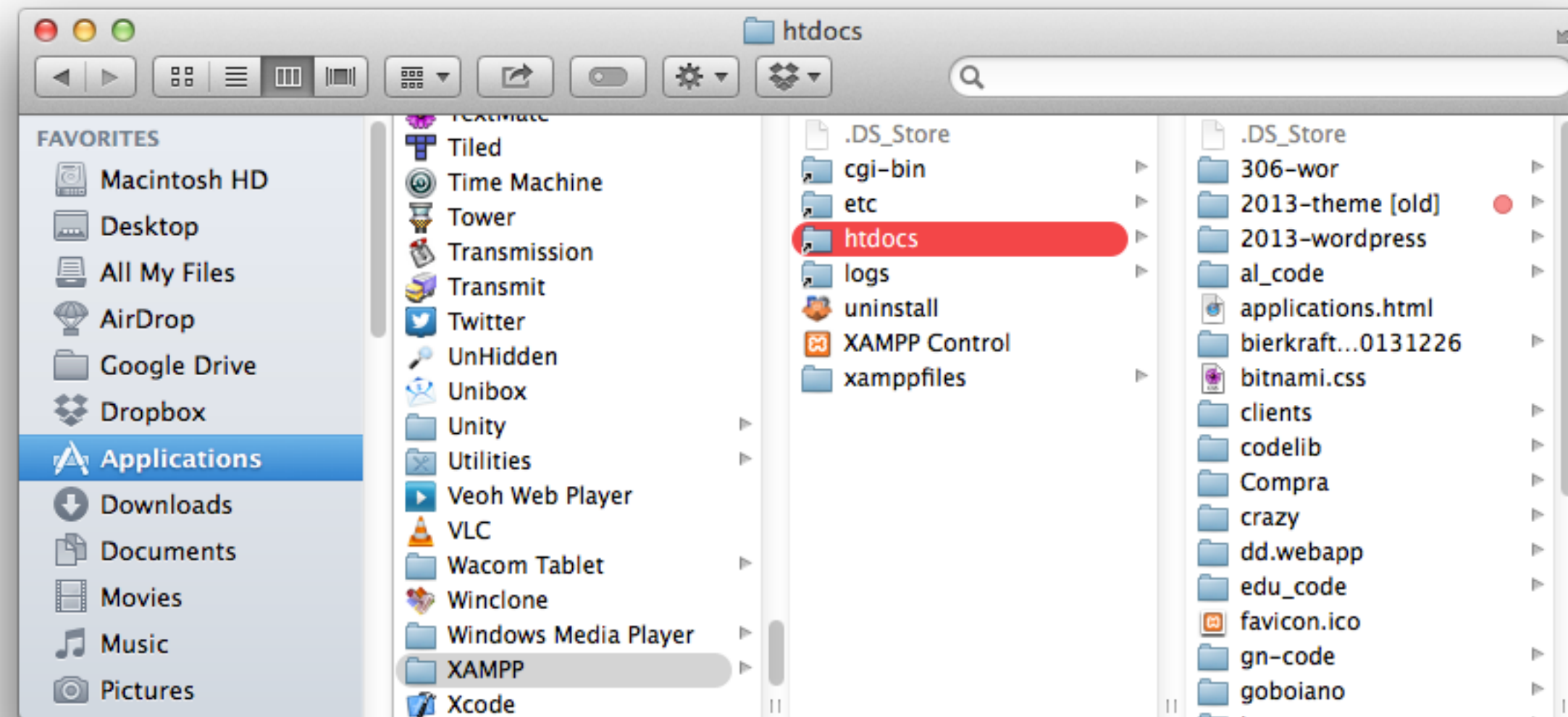
Start your Apache server

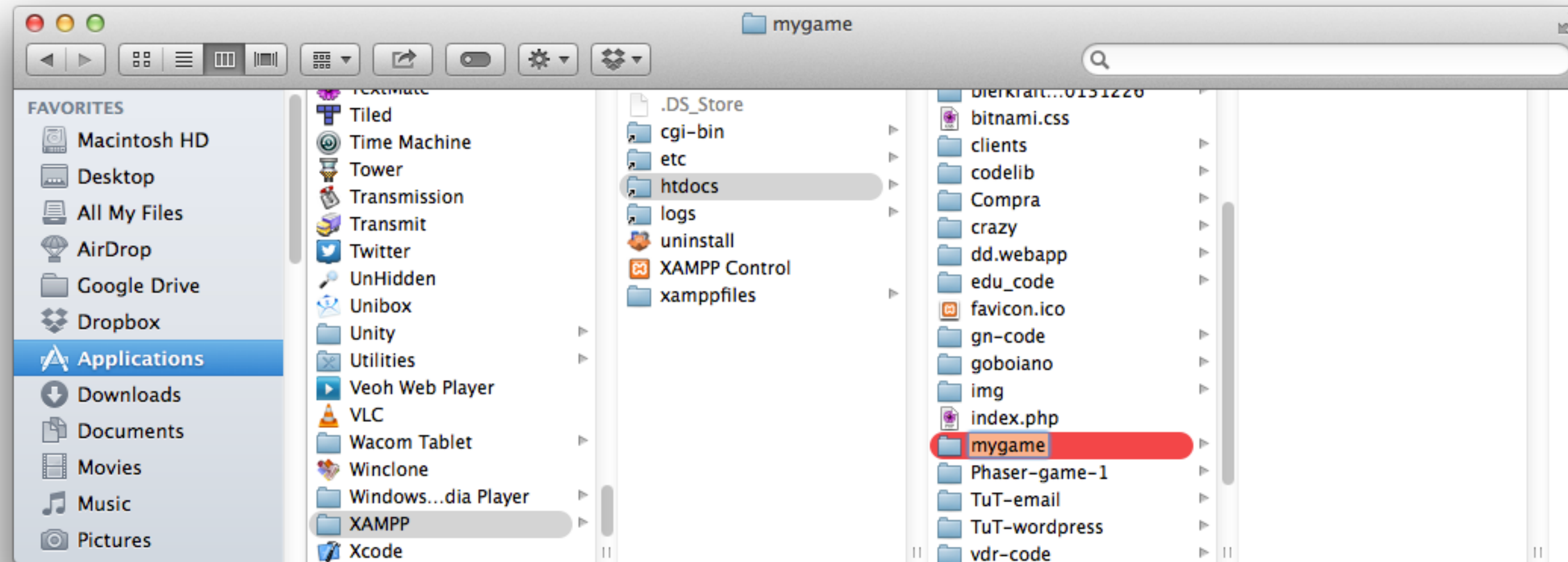Open XAMPP and turn on Apache

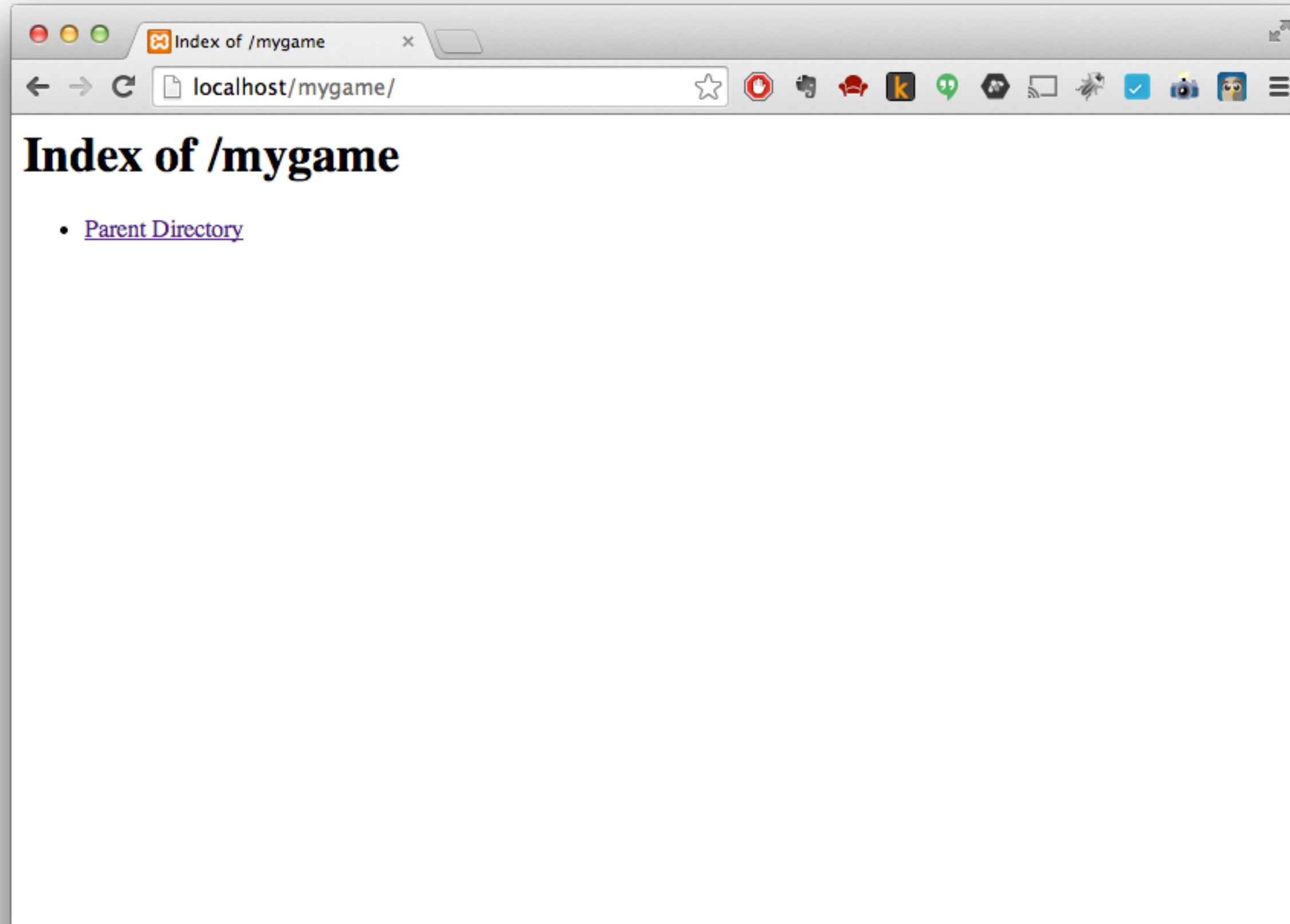# Making an HTML5 page

Find htdocs

Open your XAMPP folder, then htdocs

Create a folder to work in
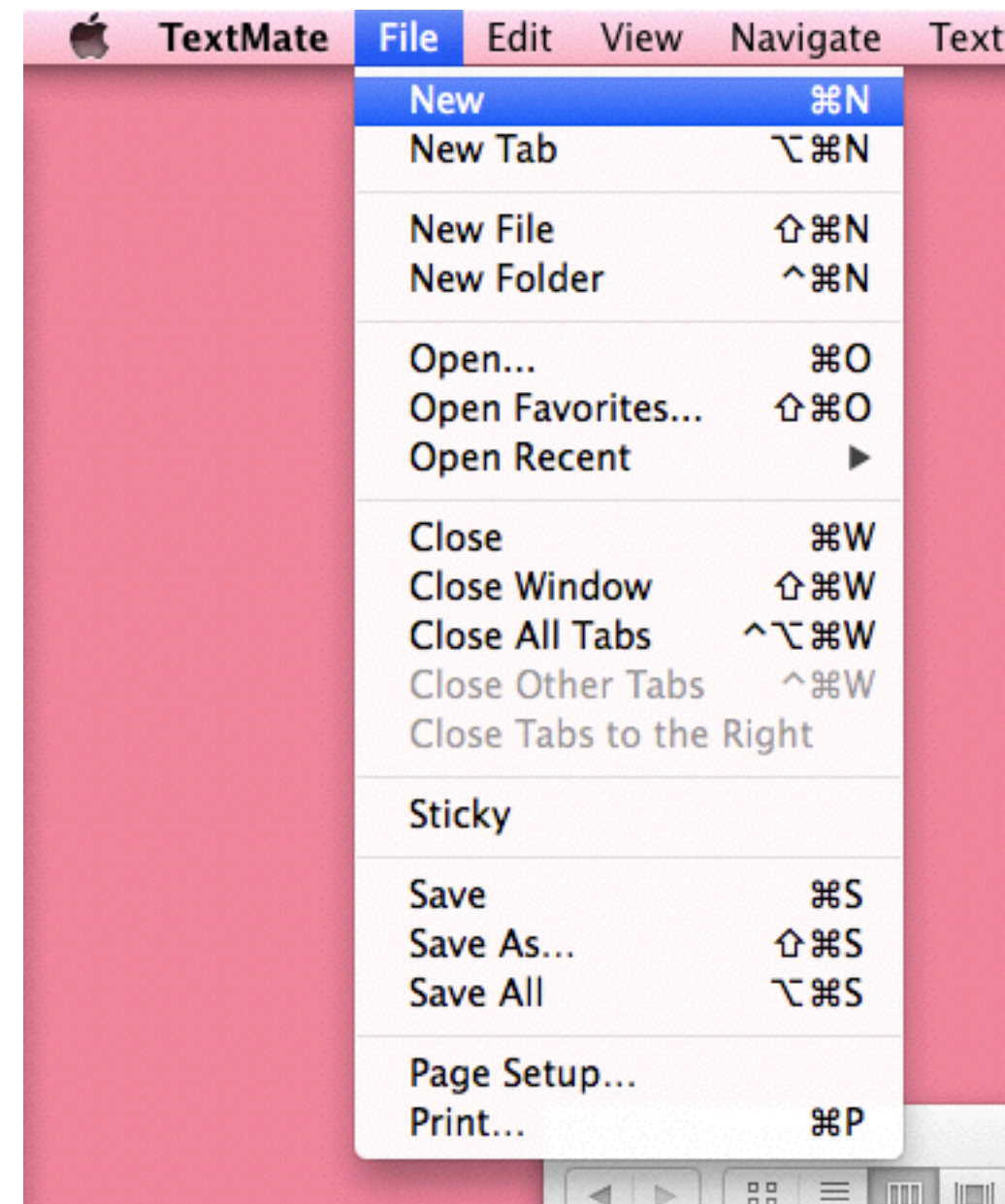

Name your folder mygame

Check if it worked!

Go to localhost/mygame

Create a new file in your text editor

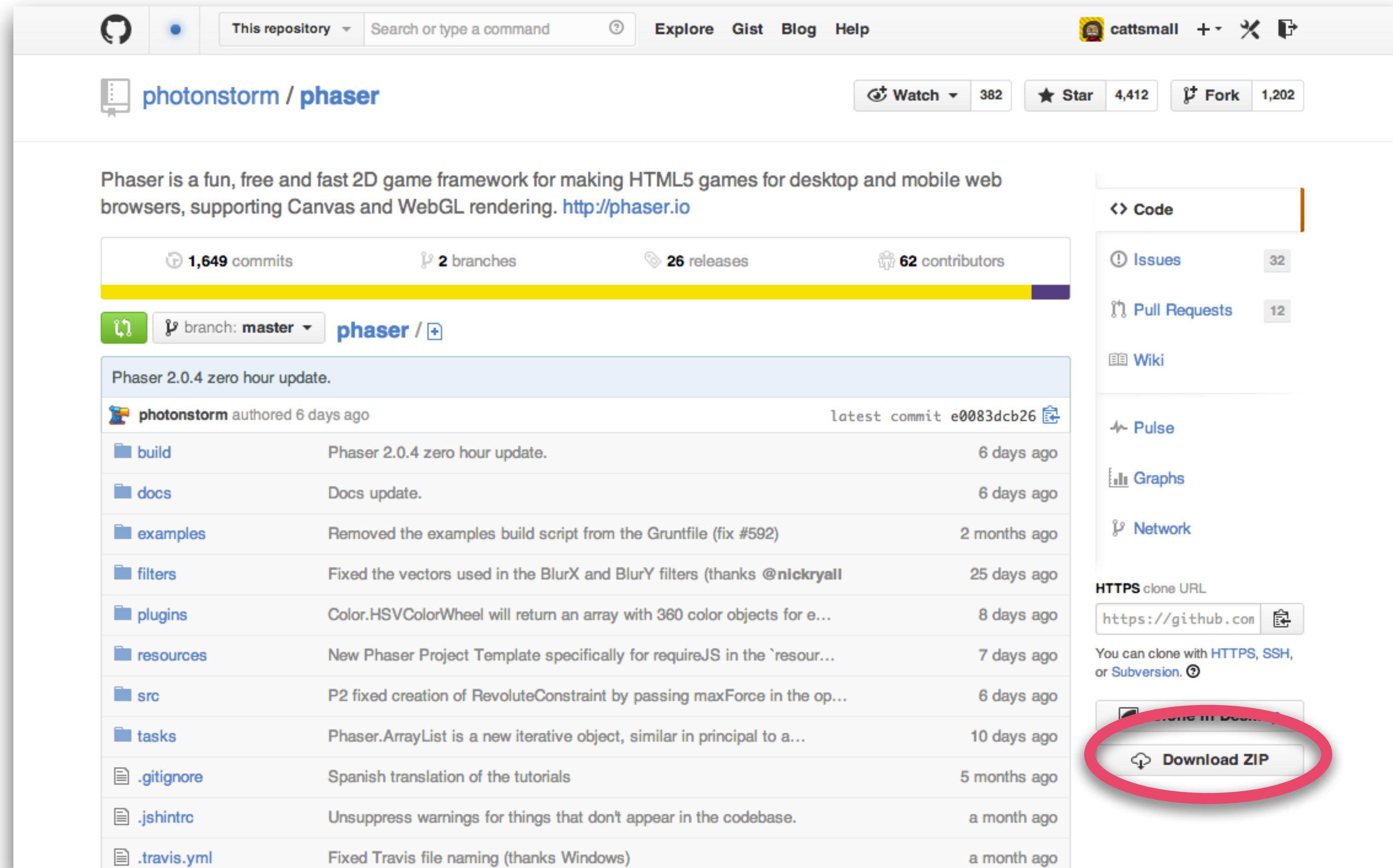Save your new file as index.html in your folder

Components of an HTML5 page

- <!DOCTYPE html>: tells the browser it is looking at an HTML5 page

- <html>: begins the HTML code

    - <head>: the area where meta information will be located

        - <title>: the website title

    - <body>: the part of the page where the HTML shows up!

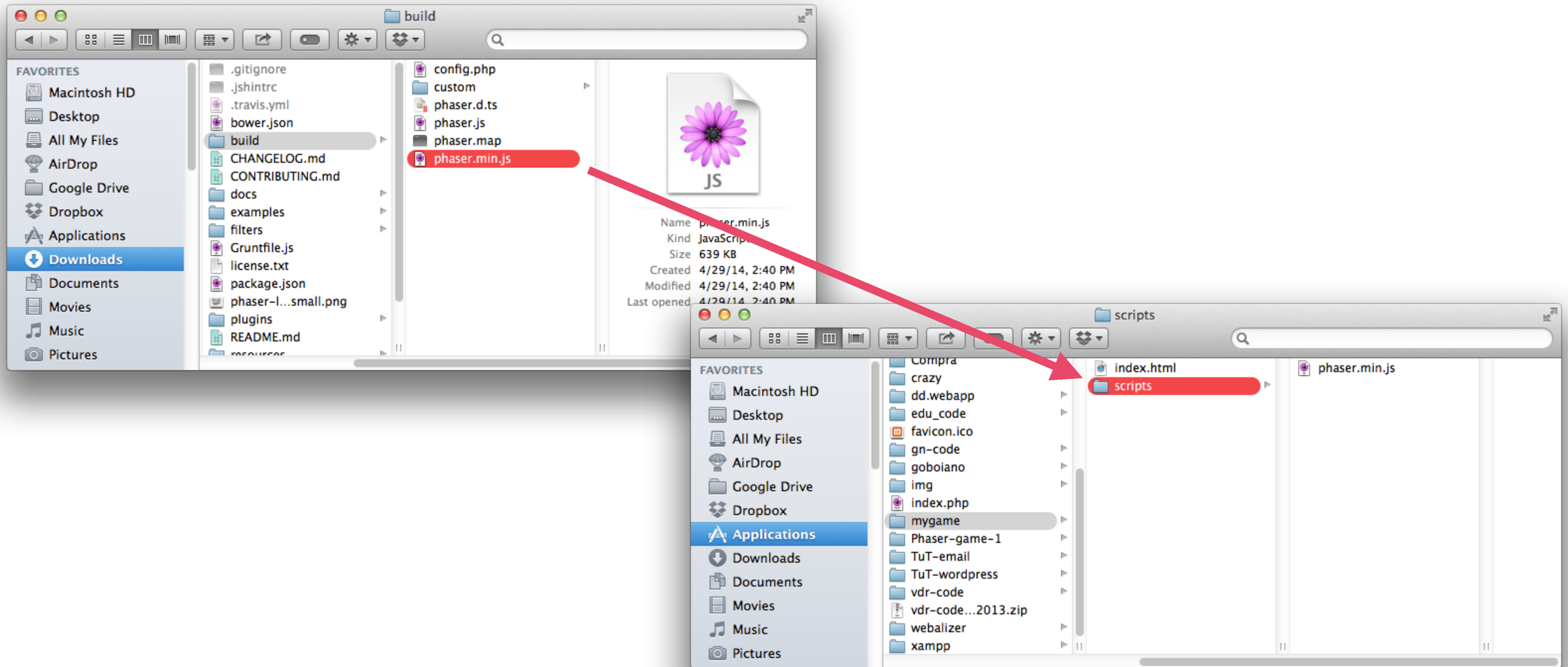# Getting started with Phaser

Download the latest version

github.com/photonstorm/phaser

Move phaser.min.js
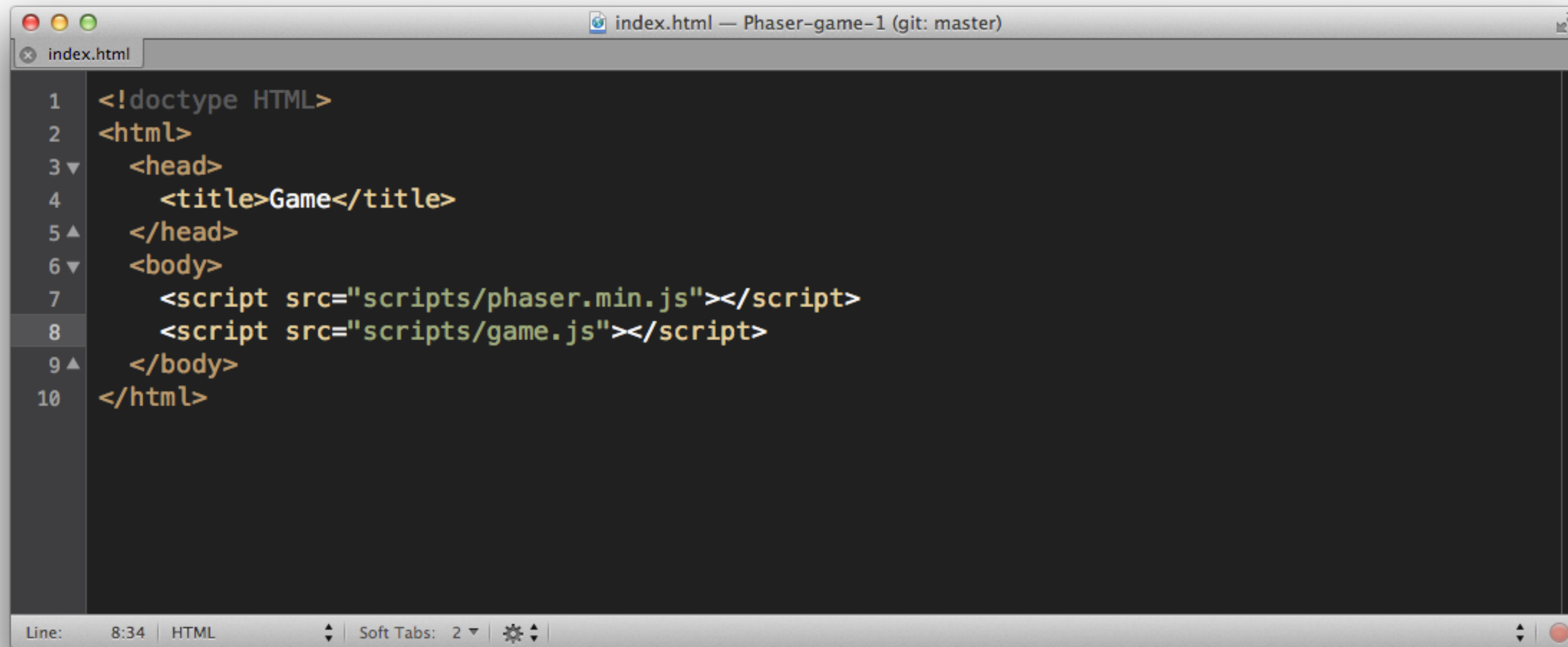
create a scripts folder & move phaser.min.js there

Create a JavaScript file
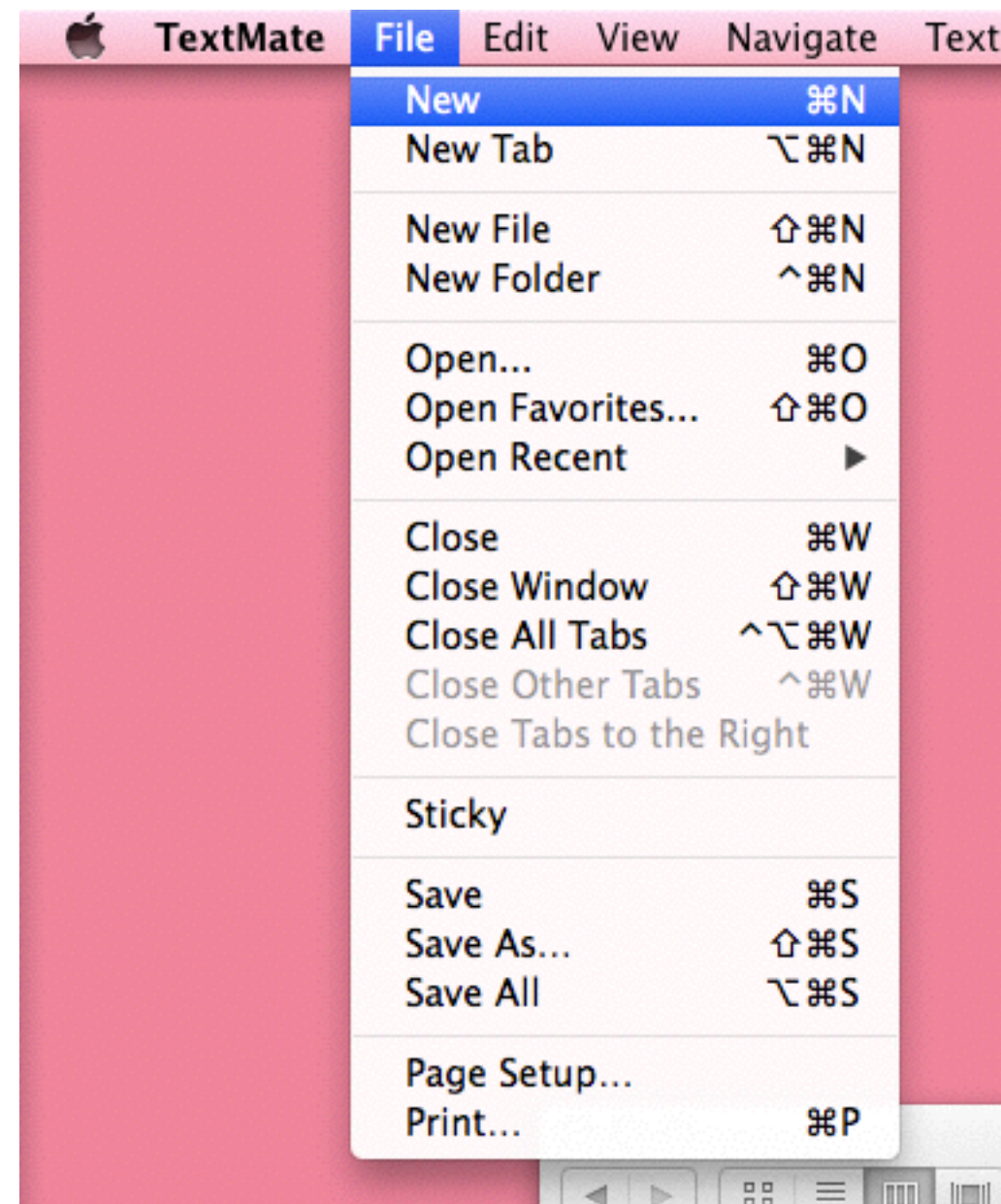
Save your new file as game.js in your scripts folder

Link your files to the HTML


```
1   <!doctype HTML>
2   <html>
3 ▼   <head>
4       <title>Game</title>
5 ▲   </head>
6 ▼   <body>
7       <script src="scripts/phaser.min.js"></script>
8       <script src="scripts/game.js"></script>
9 ▲   </body>
10  </html>
```

index.html — Phaser-game-1 (git: master)

index.html

Line: 8:34   HTML   Soft Tabs: 2 ▼

Comment your code

5 minutes after you write code
without comments
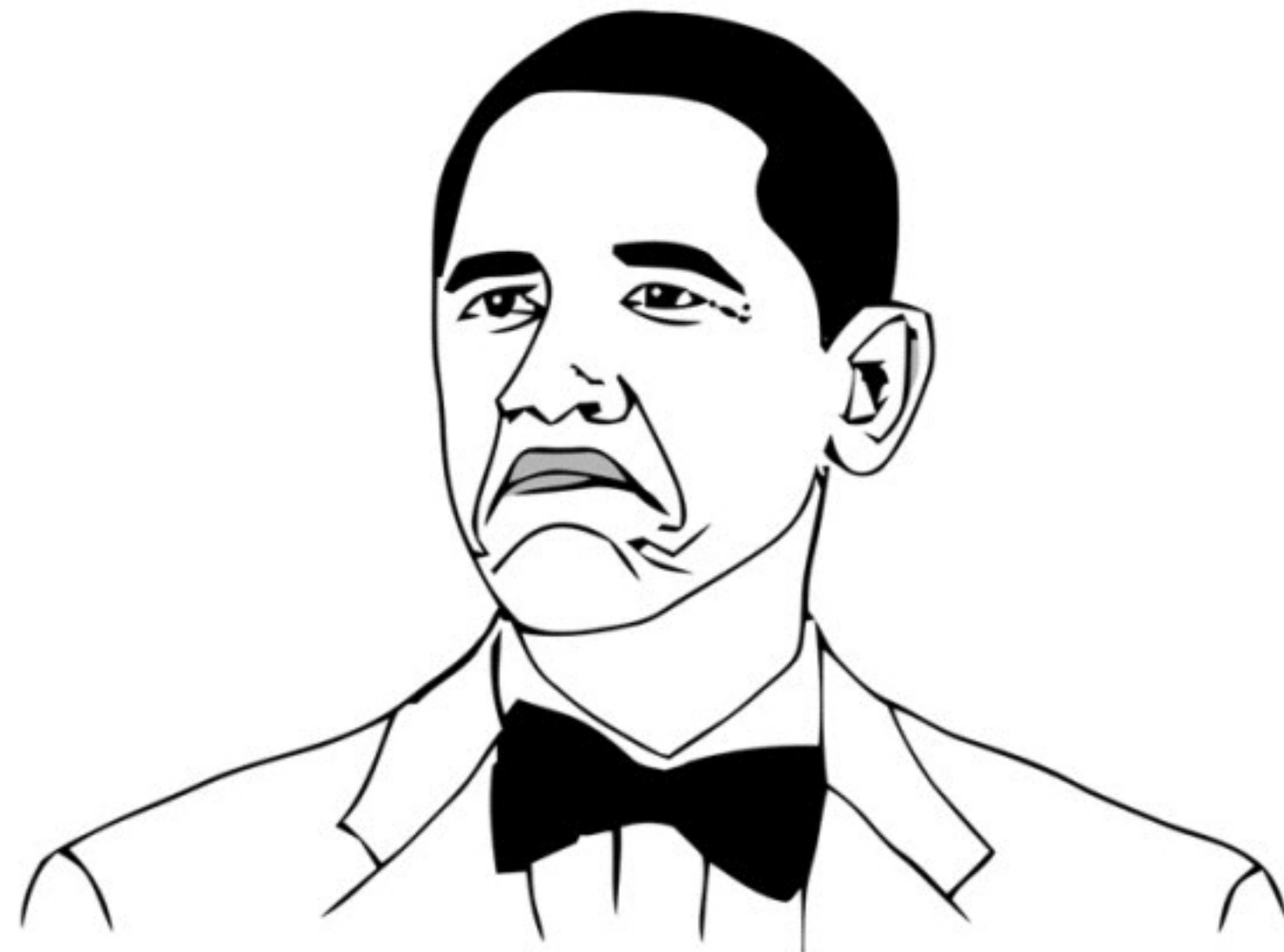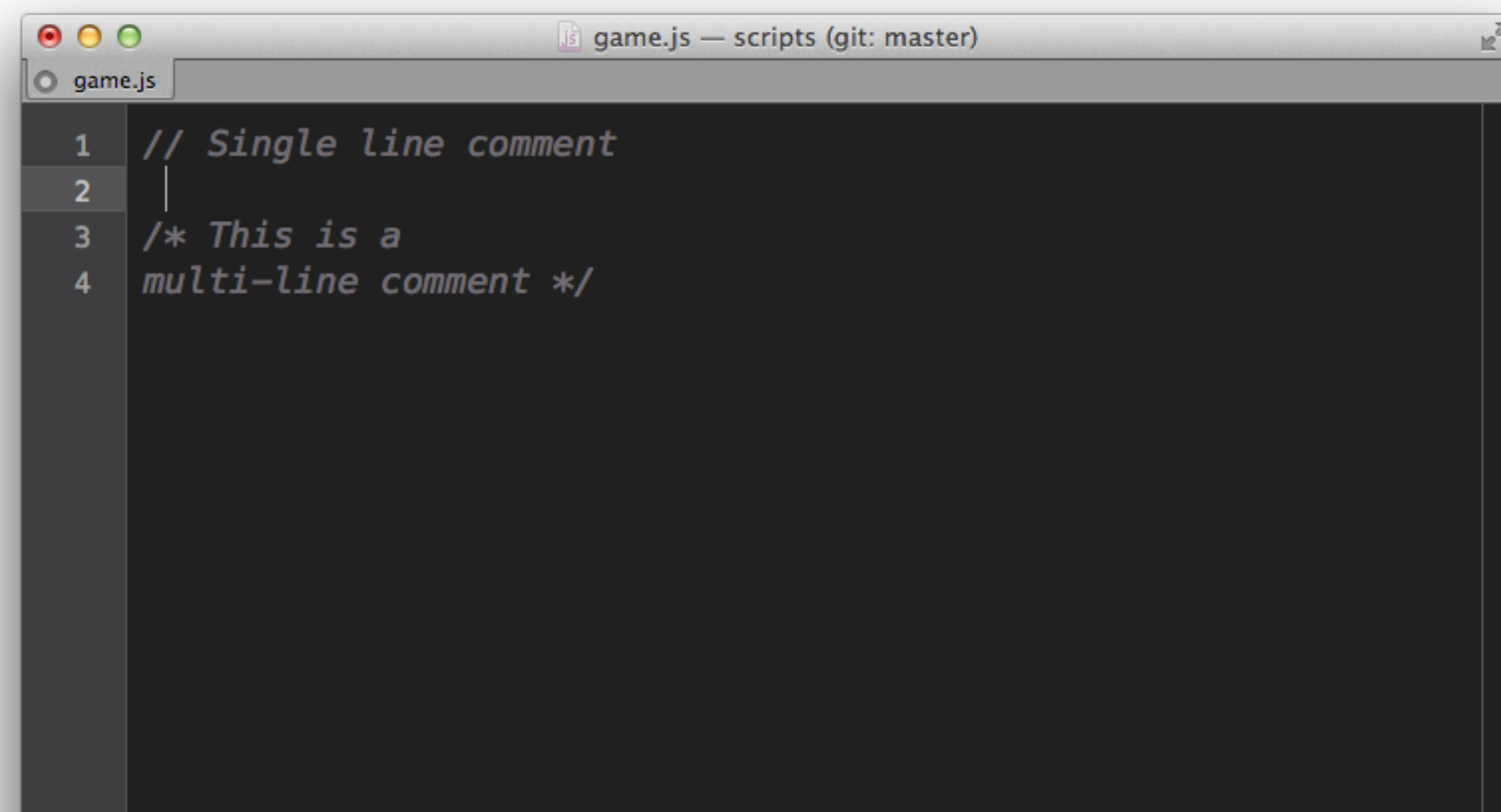
When you come back to it
in 3 weeks

NOT BAD
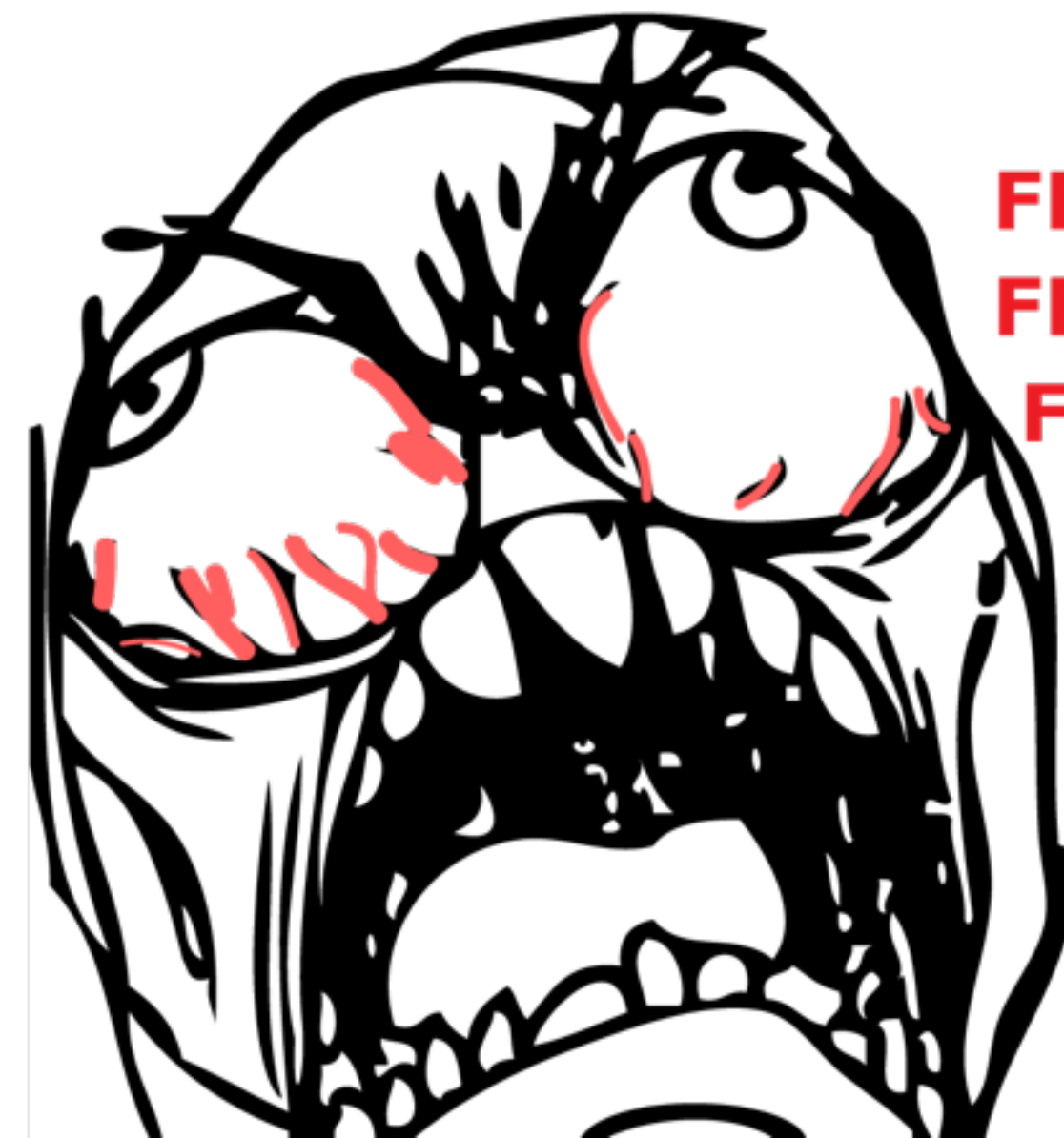
FFFFFFF
FFFFFFF
FFFFFF
FFFUU
UUUU
UUUU
UUUU
UUUU
UUUU-

Commenting code is easy

- Preface your one-line comment with two slashes (//)

- Two line comments require an asterisk and slash on each side (/* */)

- Most text editors have shortcuts (like + /)

```
1  // Single line comment
2
3  /* This is a
4  multi-line comment */
```

Creating games with JavaScript

credit: Jandi Small

Our game

- Collect the pigcats!

- Enemies switch between dangerous & safe

- If you collect the pigcats, you win!

- If your health goes down to 0, you lose!

- Polish it with start, win, and lose screens

Variables

- Variables are useful for storing data that may change throughout the course of your app (e.g. your player's health)

- To create a variable, you have to tell JavaScript:

  - The name you're going to refer to it by

  - The value (information) that the variable contains

Variables

- Variables let you refer to the same information many times

- If you need to change that information, you only have to do it once

For example, best friends may change but the label stays the same:

```
var myBestFriend = "Isaiah";
var myBestFriend = "Rebecca";
var myBestFriend = "Aileen";
```

Functions

- Function: a named section of a program that does a specific task

  - Wraps up code in an easy-to-reference way

  - Parameter: additional information you can give the function to change the output

Function structure

```
function fetch(dog) {
    run to the ball;
    pick up the ball;
    bring the ball back;
};
```

- Name of the function

- Parentheses: Hold any modifiers (also known as arguments)

- Brackets: What to do in the function

- Semicolon: end of line, move onto the next thing

Calculations

+ (add)

– (subtract)

* (multiply)

/ (divide)
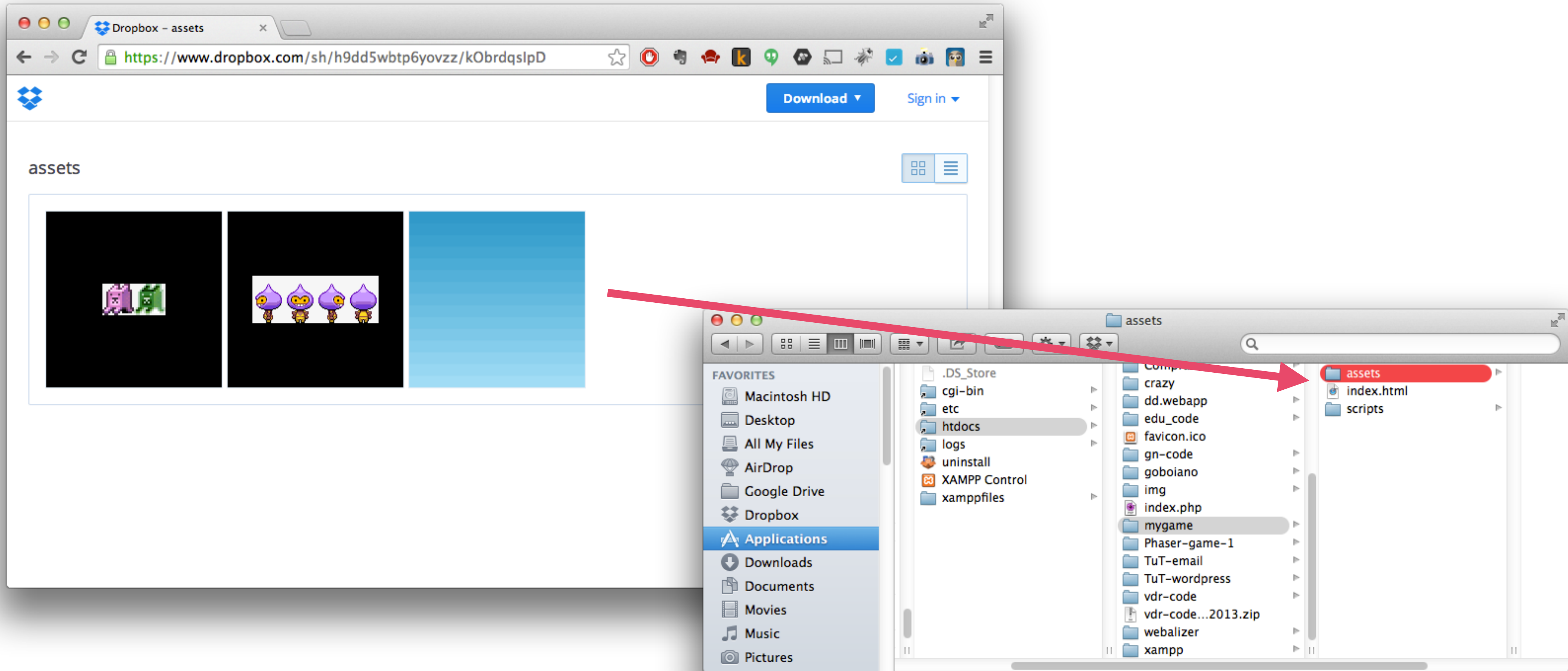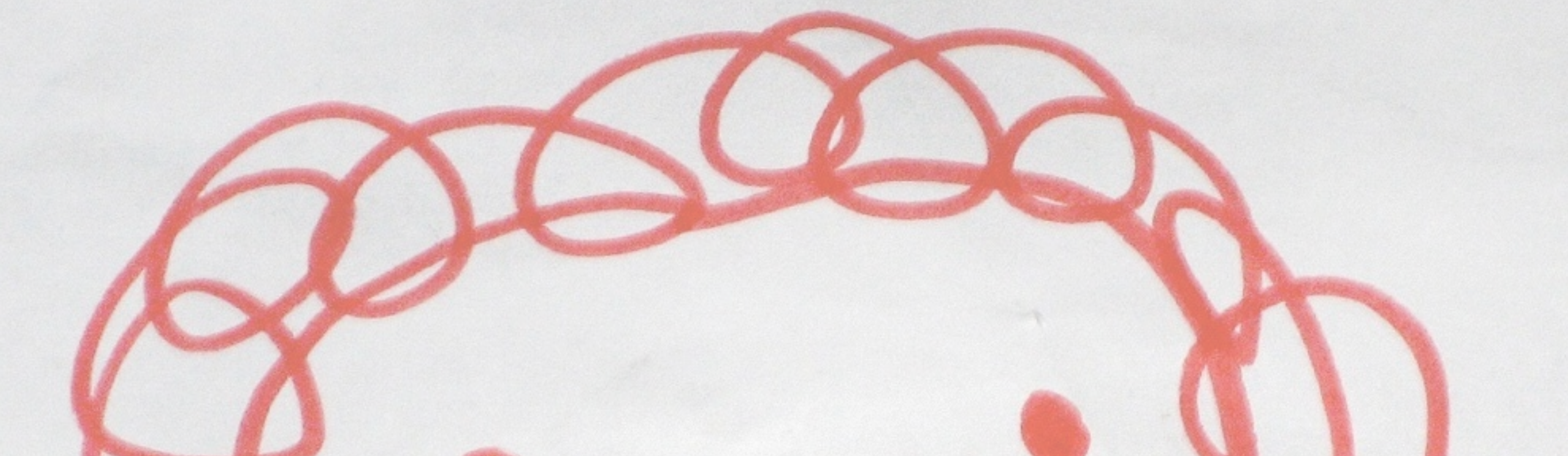
var addition = 13 + 22;
var division = 100/15;

preload() function

LOADING

Create assets folder
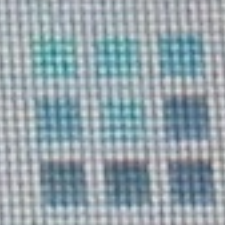

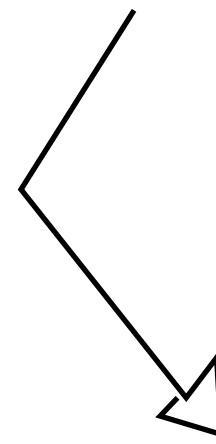Download & save images from tinyurl.com/clf-html5-2014
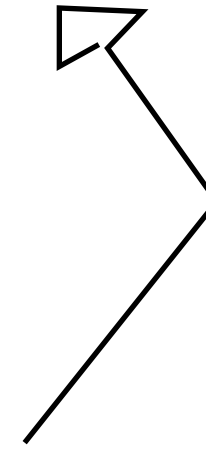
create() function

update() function

CREATE

↓

UPDATE

DRAW

How does positioning work?

X=0 x=WIDTH

y=0

y=HEIGHT

X=0 ——————————————→ x=WIDTH

y=0

(3,2)

y=HEIGHT
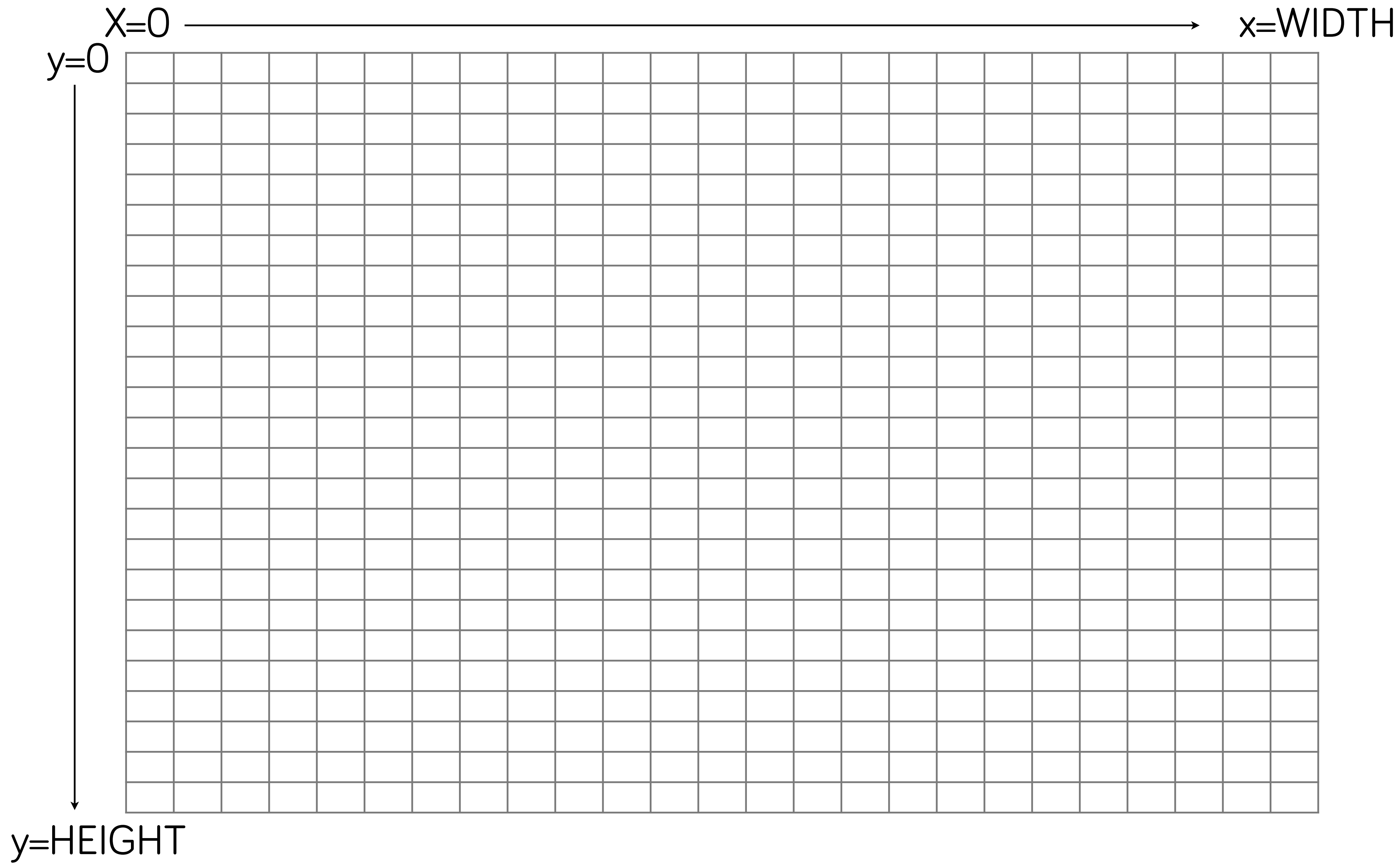
How do I move my player?

game.input

game.input.keyboard.createCursorKeys();

+

conditional statements

Conditional statements

```
if (squirrel){
  console.log("squirrel!");
} else {
  console.log("bark!");
}
```

- Check if something is true or false

- Provide backup option if necessary

How do we create a bunch of the same objects?

Groups

enemies