Learning to Code
Session 3

Javascript

Logic

Programmer Logic

A programmer’s partner sends her to the shop.

She says “**Buy milk. If they have eggs, get 6.**”

So the programmer returns with *6 bottles of milk*.

“**Why???**” exclaimed her partner.

“*Because they had eggs.*” said the programmer.

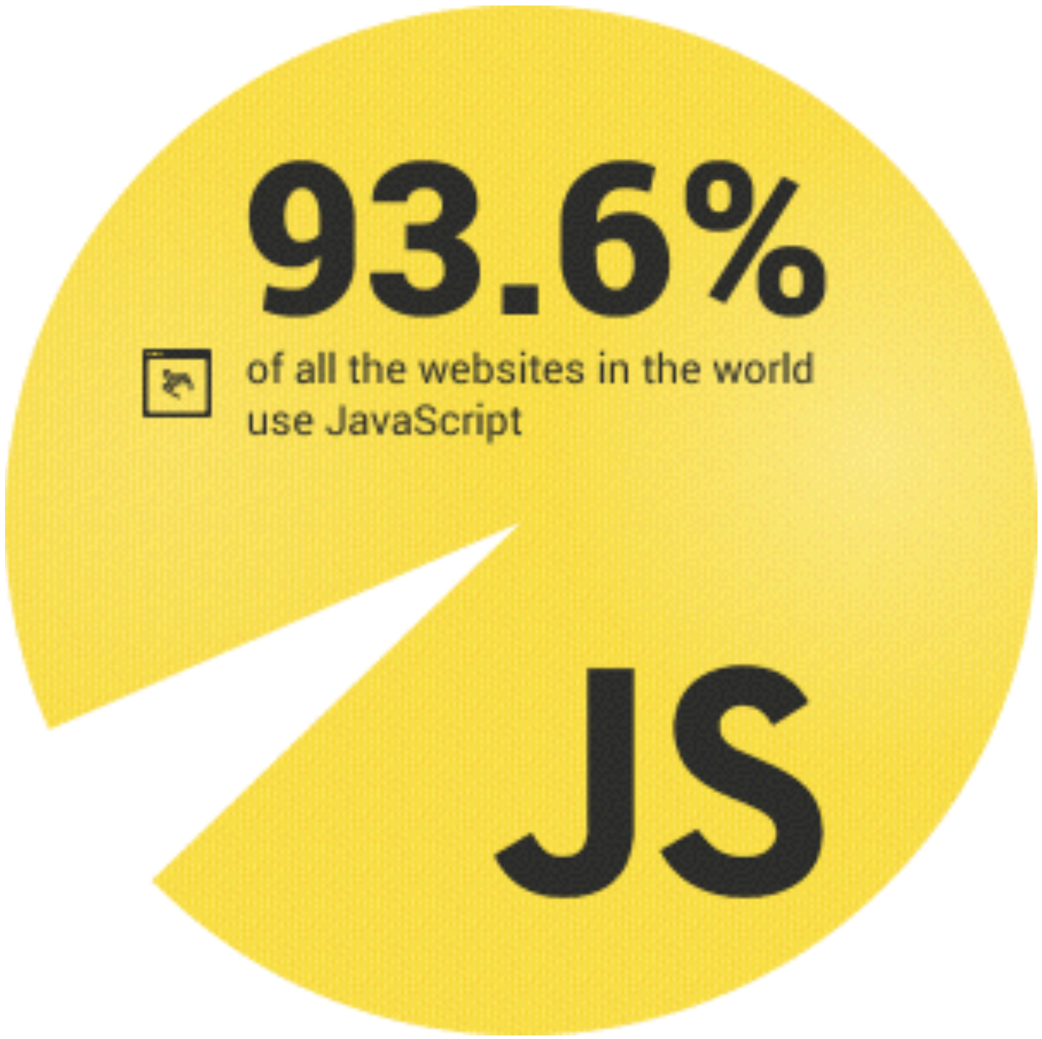
Programming = humans telling machines what to do

Machines are dumb, humans are smart. Machines don’t do anything without being told.

Think about the logic behind your instructions

Javascript

- Created to make the web more dynamic
- CASE SENSITIVE
- ignores white spaces
- use ; to end a particular task
- can use either “” or ‘’ (just open and close the same ones)
- // single line comment
- /* multiple line comment */



Where does it go?

Similar to CSS files:

- in the HTML files <script> Javascript goes here </script>. This can either go in:

- separate file (a .js file), linked in the <head> as follows:

  - <script src="myJavascript.js"></script> (you can add type="type/javascript" but HTML assumes this if you don't specify)

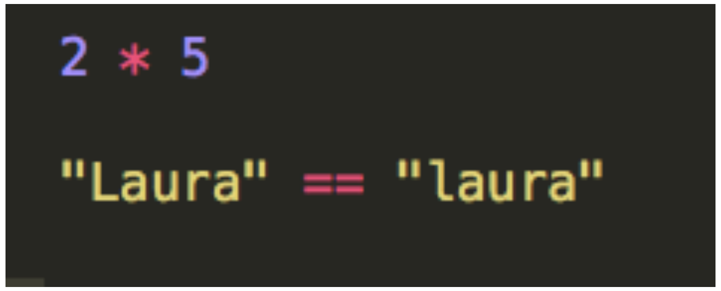
  - <head> (generally if you need the file to load

Literals & Variables

Literals

Numbers, string

Do not change

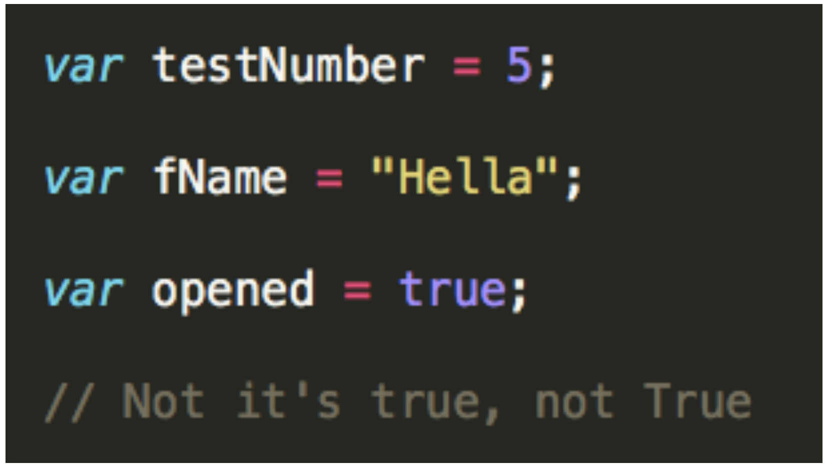


```
2 * 5

"Laura" == "laura"
```

Variables (can change)

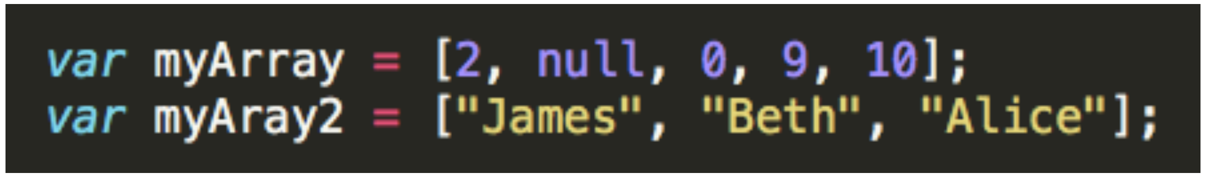
Simple types: Numbers, String, Boolean (true or false)

(also null and undefined)



```
var testNumber = 5;

var fName = "Hella";

var opened = true;

// Not it's true, not True
```

Complex: arrays (like a list) (also dates)



```
var myArray = [2, null, 0, 9, 10];
var myAray2 = ["James", "Beth", "Alice"];
```

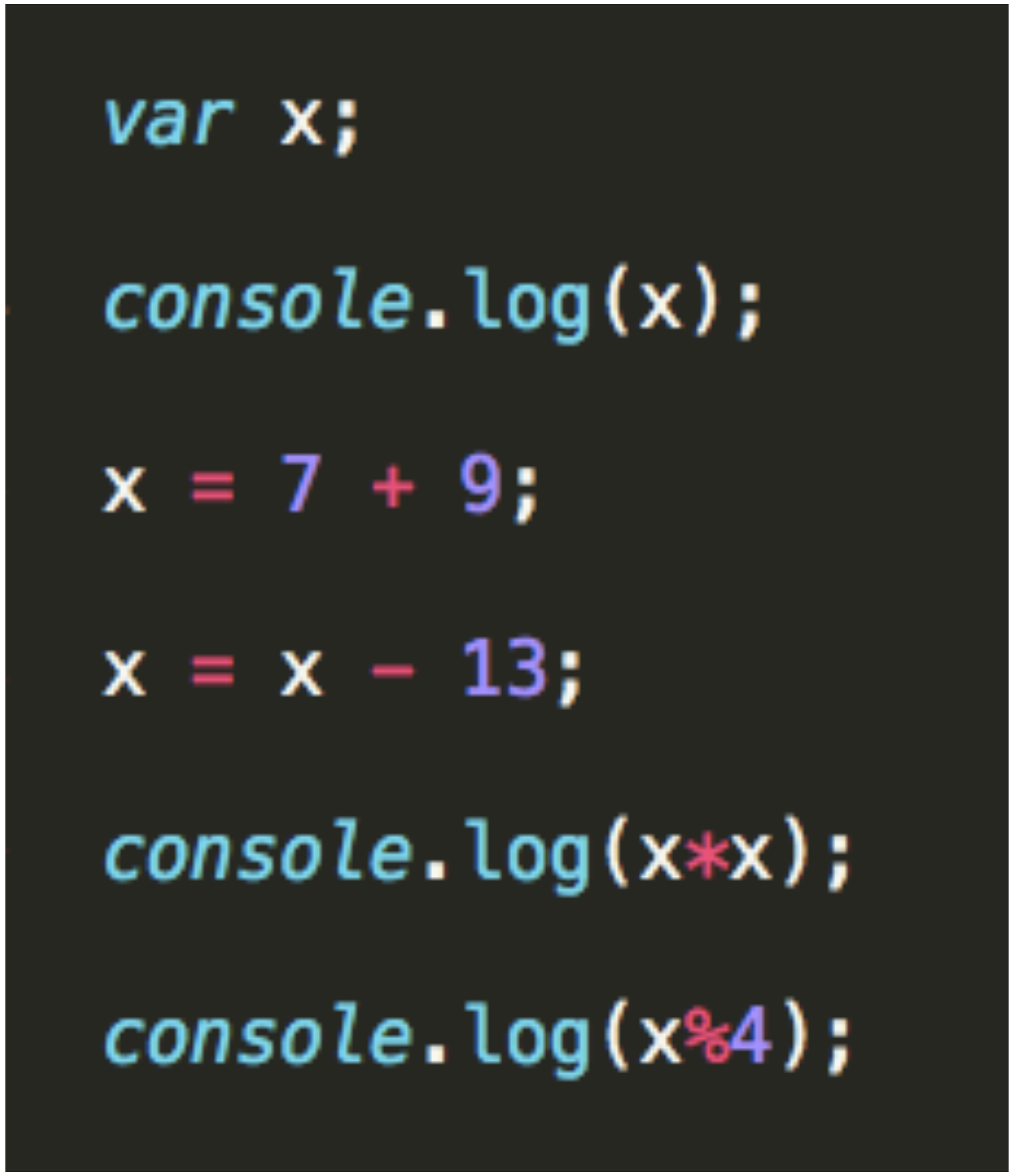
Operators

Simply carry out a specific task (or operation)

Assignment = used to give a variable a value

Numerical + addition, - subtraction, * multiplication, / division

% modulus (what is the remainder) 7%2 is 1



```
var x;

console.log(x);

x = 7 + 9;

x = x - 13;

console.log(x*x);

console.log(x%4);
```

Comparators

Used to compare one value to another

Result is a Boolean (true or false)

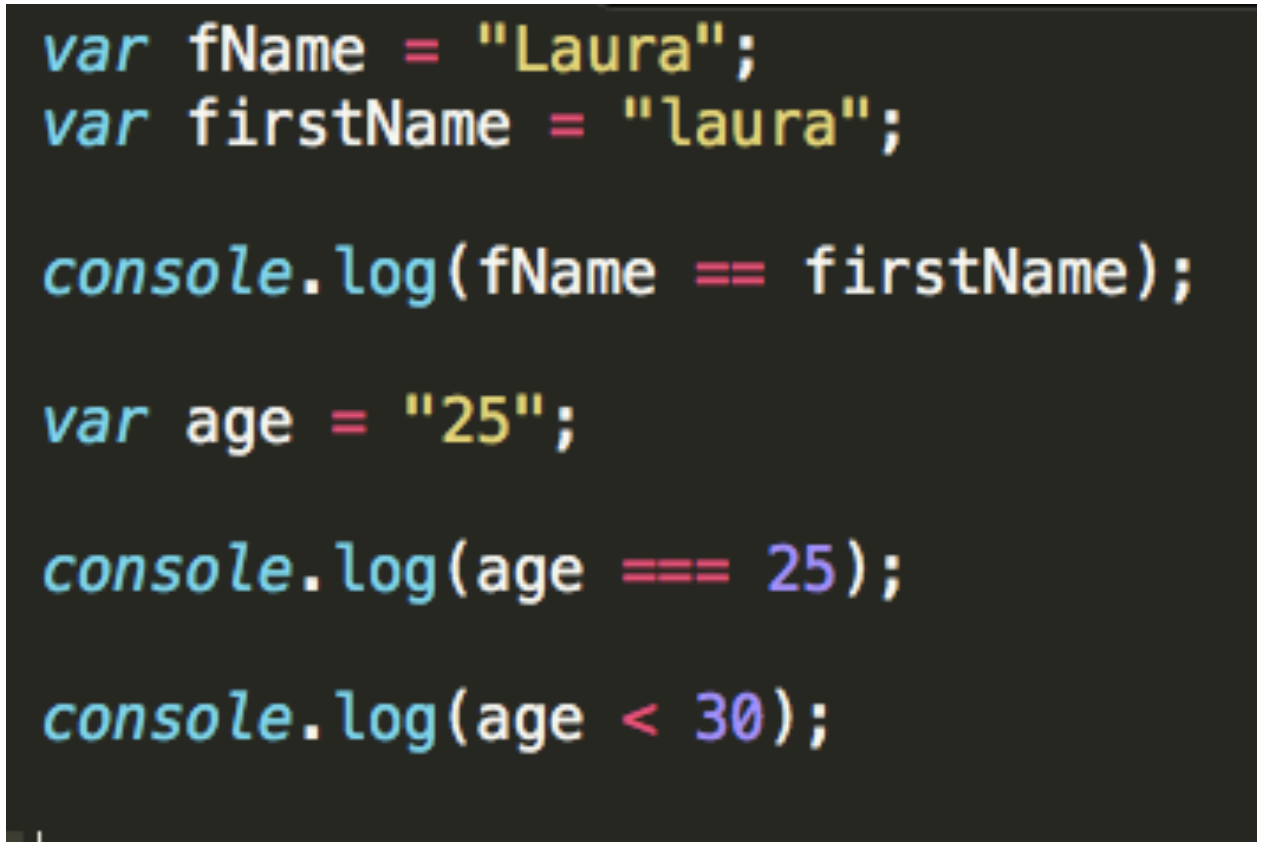
== equal

!= not equal

< <= less than (less than or equal to)

> >= more than (more than or equal to)

=== equal value and type



```
var fName = "Laura";
var firstName = "laura";

console.log(fName == firstName);

var age = "25";

console.log(age === 25);

console.log(age < 30);
```

Identifiers

Used for variables, keywords, functions

Case sensitive

Can begin with $, _ or a letter (not a number)

Can contain $, _, letters or numbers

- is reserved for the minus sign

Cannot contain a space

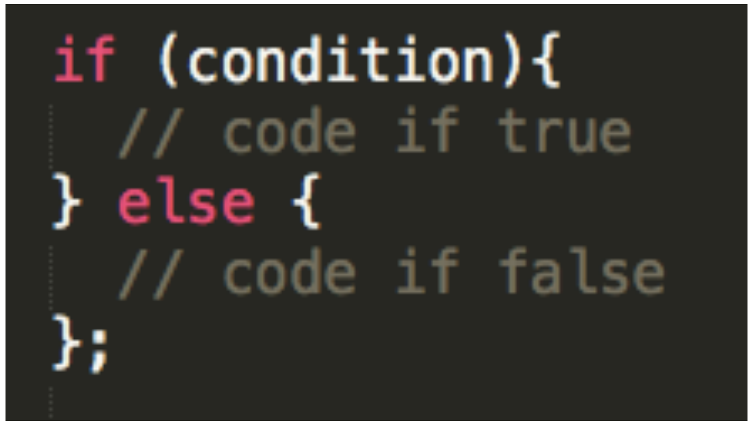
Cannot use reserved words

https://www.tutorialspoint.com/javascript/javascript_variables.htm

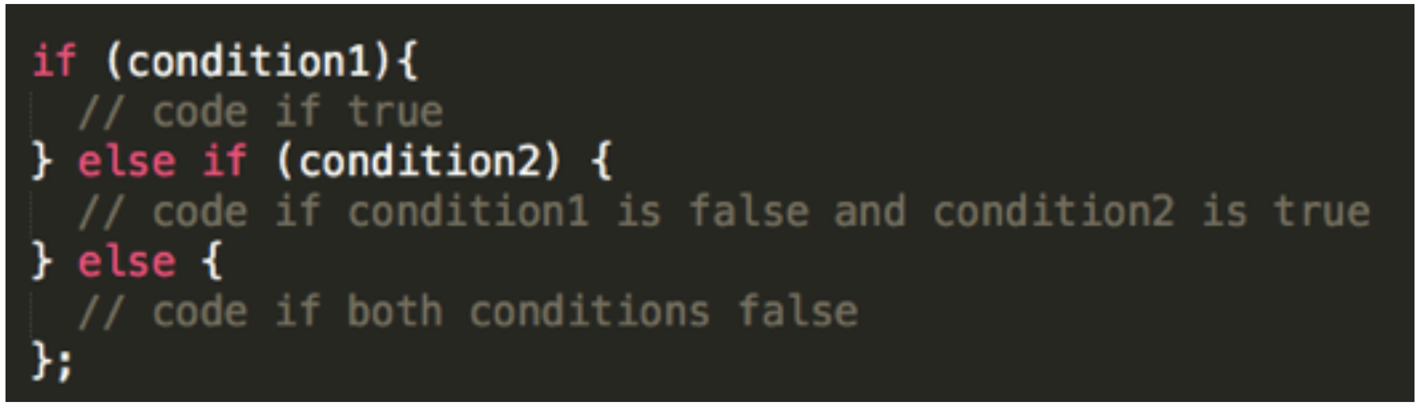
Control Flows

if

else if

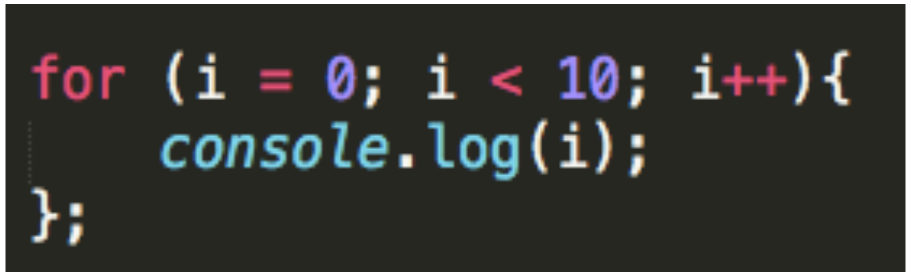


```
if (condition){
  // code if true
} else {
  // code if false
};
```



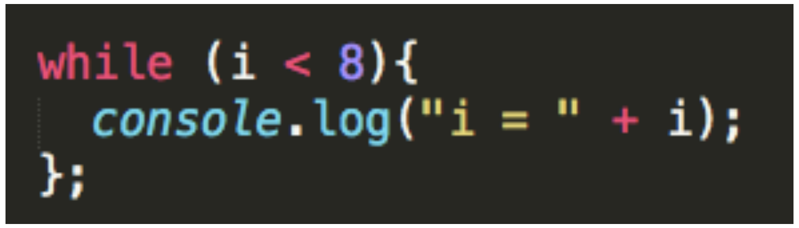
```
if (condition1){
  // code if true
} else if (condition2) {
  // code if condition1 is false and condition2 is true
} else {
  // code if both conditions false
};
```

for



```
for (i = 0; i < 10; i++){
      console.log(i);
};
```

while



```
while (i < 8){
  console.log("i = " + i);
};
```

Also:

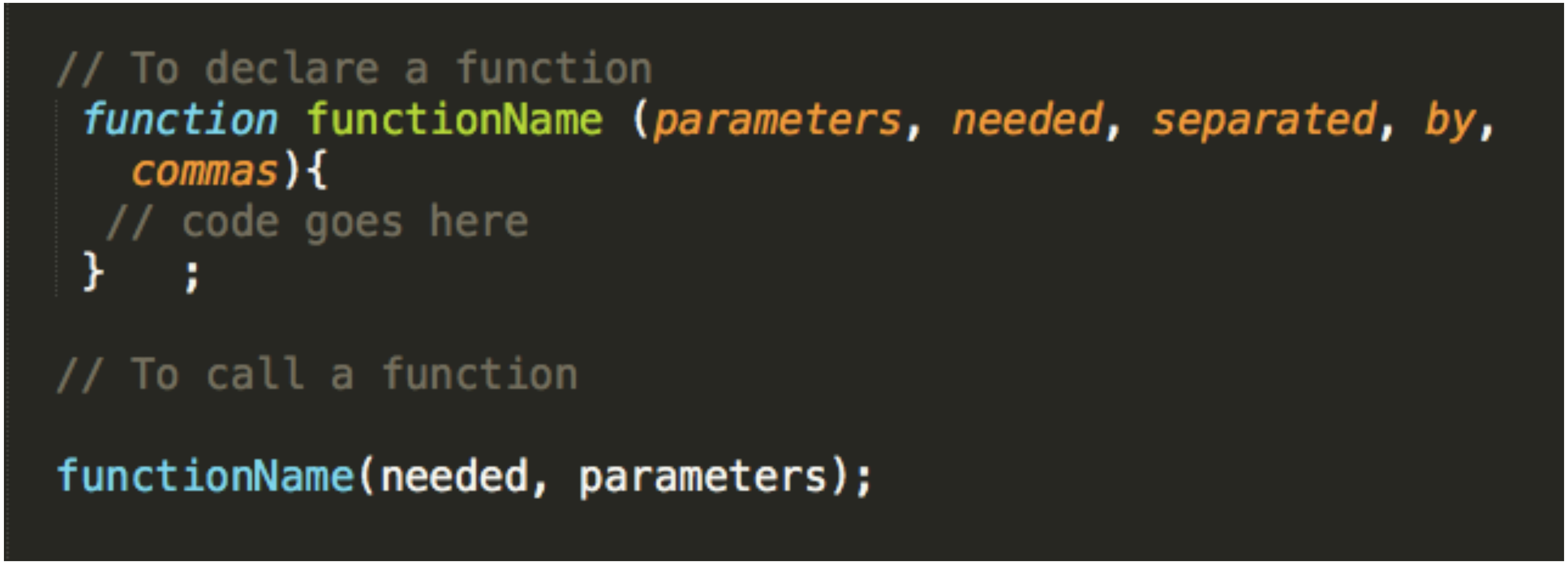
do, while

break

try, catch

Functions

- Code to carry out a task - e.g. adding numbers, printing all users



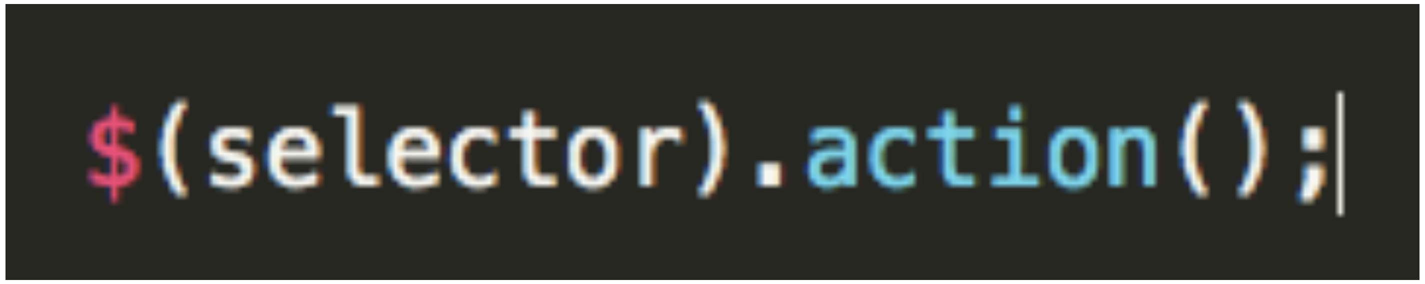
```
// To declare a function
 function functionName (parameters, needed, separated, by,
   commas){
  // code goes here
 }   ;

// To call a function

functionName(needed, parameters);
```

jQuery

- Javascript library - documentation is here: http://api.jquery.com/
- Removes need to interact with the DOM
- Makes simple website interaction easier (i.e. click, hover)
- Cannot be used for very advanced things
- Can download the files and link in the head (from here http://jquery.com/download/)
- Or can use a CDN (Content Delivery Network - a big company may store the files online) find some CDN's here https://code.jquery.com/

Basic jQuery Syntax

Cheat Sheet: https://oscarotero.com/jquery/

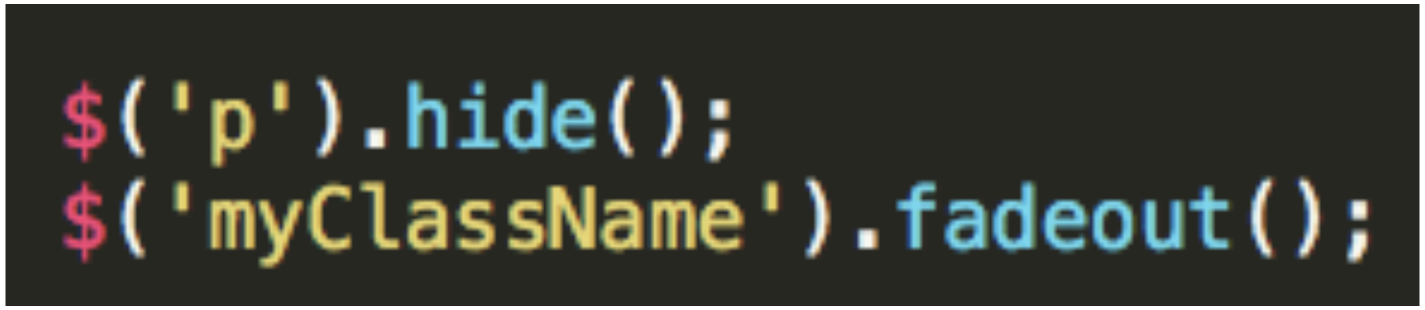


```
$(selector).action();
```

$ to access jQuery syntax

Selector - HTML element, ID/class name (in quotes) or this

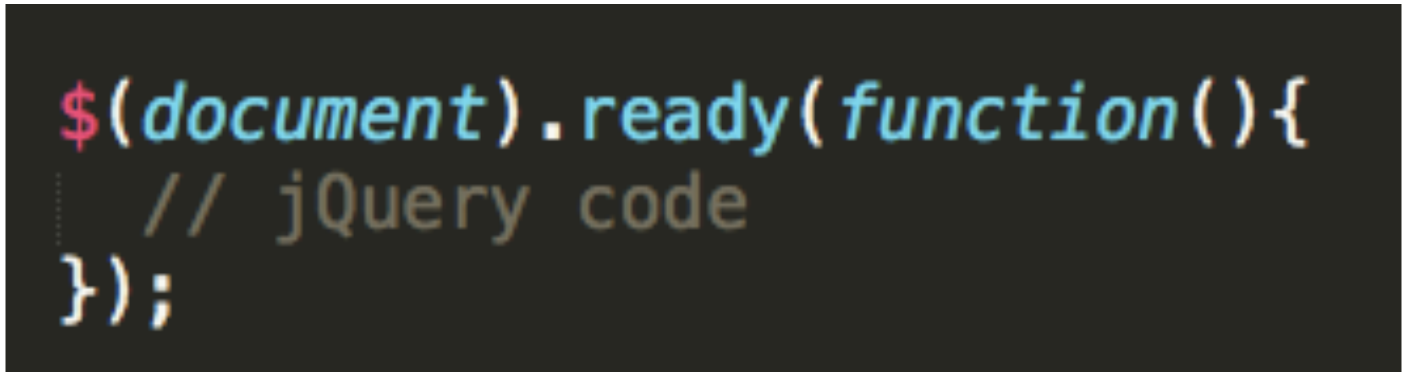
Action - defined jQuery action (see cheatsheet for ideas)



```
$('p').hide();
$('myClassName').fadeout();
```

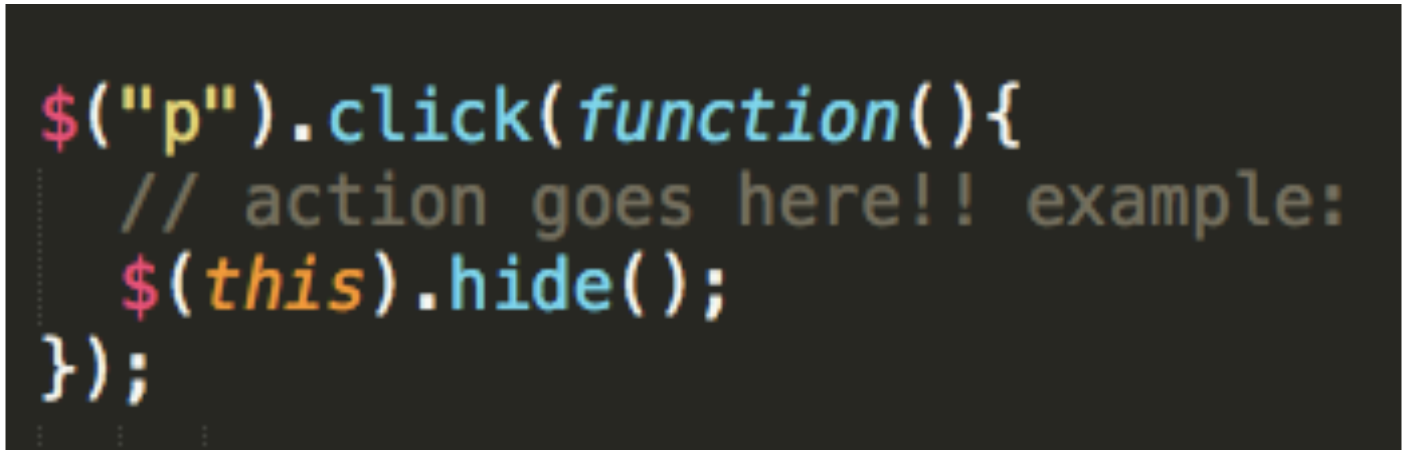
jQuery Functions

If you want your jQuery to wait until all the HTML is loaded, wrap your code in:



```
$(document).ready(function(){
  // jQuery code
});
```

A jQuery function (similar to Javascript one):



```
$("p").click(function(){
  // action goes here!! example:
  $(this).hide();
});
```

Google Maps

An example of an API

Easy to integrate to

Documentation online

https://developers.google.com/maps/

Uses Javascript