JavaScript was originally called livescript but was renamed to JavaScript to tailgate off Java’s popularity even though it’s not a lot like it. The generic language name is EcmaScript. HTML5 includes JavaScript.

**JavaScript Types**

[] = **Array** = A list or set of things. Allows duplicates. You can add things to the beginning or end.

{} = **object** = hashmap = associative array = dictionary = Mapping from one value to another

“...” = **string** = “Party” + ” Like” + 1999

1 = **Number** = (1).toString() = “1” …everything is an object. Even functions and numbers. Javascript y u do dis?

true | false = **boolean** … !!somevar will force it to turn into a bool, then make the value the opposite

0.1 =0.2 = 3.000000000004 = be careful with floating point!

**NaN** = not a number. Every additional number that interacts with NaN is turned to NaN. *isNaN*(CheckForNaN);

**undefined** = uninitialized variable

1/0 = **infinity** … because if you cut a pie in such a way that it gives you 0 pieces each of those 0 pieces are infinity in size? Y u do dis javascript!? Y?

// Supports C style **comments** and /\* Multiline Comments \*/

**JavaScript Conditionals**

*if (Exp){ DoSomething(); } else if (Exp){ … } else { … }*

// **false, null, “”, NaN, null, undefined** will cause DoSomething() **not** to execute, otherwise it will.

// 1==true (default == changes types to match), 1===1 (triple equals does not)

//It supports ternary (Exp) ? true : false; or a short hand for setting default values **Exp || “default value”;**

**JavaScript Functions**

*function sayHello(name){ console.log(name); }*

//Calling sayHello(“Jimmy”, “Ruska”) still calls the same function and does not error out.

// Does not support default parameters yet. It is common to pass an object as a single argument than multiple arguments. If multiple arguments are passed you can get the rest of the arguments as an array by calling

Array.prototype.slice.call(arguments, 1). Logical operators: “&&” means “and”, “||” means “OR”, “!” = “NOT”

**JavaScript Loops: These 3 loops do exactly the same thing. There is also Do/While.**

for(var i=0; i<array.length; i++) console.log(array[i]);

var i=0; while(i<array.length) console.log(array[i++]);

for (var x in array) if(array.hasOwnProperty(x)) console.log(x);

**JavaScript Variables**

*var i=0;*  // This defines a variable. If you only say “i=0” the first time you define it, it will be a global variable.

There is no block level scope. Only variable level scope. This is insane.

*for (var i=0; i<myArray.length; i++) console.log(myArray[i]);*

… later, you try this and it breaks because i is already defined. JavaScript y u do dis? This applies to other loops

*for (var i=0; i<myOtherArray.length; i++) console.log(myOtherArray[i]);* // Error

**JQuery**

Working with javascript is difficult because different browsers and older browsers work differently. They implement different functions or don’t implement some functions at all. Jquery is a library that makes common functions work for all browsers, adds animation, dom manipulation features, and other nice ideas. There is also Closure and Traceur which take javascript and output better or more compatible javascript.

**Getting Started**

Lets make a paper rock scissors game. First we make a list of requirements:

1. We need to have a way for the user to enter in either: Rock, Paper or Scissors.

2. We need to have a way for the computer to pick either Rock, Paper or Scissors at random.

3. We need to compare our answers and see who won or if we tied, and display it to the screen.

1. Lets get user input. We can do this in html. We’ll use the “id” attribute to allow javascript to interact with it.

*<input type=”text” id=’userInput’>*

To get the value: *document.getElementById(‘userInput’).value;* or with jquery *$(‘#userInput’).val();*

2. Computer needs to pick between paper rock scissors. First we need to give the computer a list of options.

*var options=[“Rock”, “Paper”, “Scissors”];*

Now we need to let the computer pick a random one. options[0] would be “Rock”, so we need a random number from 0 to 2. Lets make a function that does this. You don’t have to memorize it and yes, it’s tricky.

*function randomNumber (min, max) { return Math.floor(Math.random() \* (max - min + 1)) + min; }*

Now when I want to say “Give me a number from 0 to 2” I just say randomNumber(0,2).

var computersChoice = options[randomNumber(0,2)];

3. Compare who won! We should make a mapping of what beats what. We can do this with an object.

*var whoWins= {“Rock”: “Scissors”, “Paper”: “Rock”, “Scissors”: “Paper”};*

*if (whoWins[$(‘#userInput’).val()] === computerChoice) console.log(‘I win!’);*

*else if (whoWins[computerChoice] === $(‘#userInput’).val()) console.log(‘Computer wins!’);*

*else console.log(‘Tie!’)*

And that’s all you need! Instead of using an object you could also say:

*if ($(‘#userInput’).val() ===”Rock” && computerChoice===”Scissors”) console.log(“I win!”);*

*…*

But it’s a lot more conditionals.

**Where to Learn More**

<http://www.meetup.com/Midcities-Programming-Meetup/events/179973912/>

<http://www.meetup.com/Midcities-Programming-Meetup/events/173181742/>

<https://developer.mozilla.org/en-US/>

<https://developer.mozilla.org/en-US/docs/Web/JavaScript>

<http://bonsaiden.github.io/JavaScript-Garden/>

<http://www.html5rocks.com/en/>

Check your javascript <http://www.jslint.com/>

http://kangax.github.io/compat-table/es6/

<http://www.reddit.com/comments/1nnokk>

<https://developer.mozilla.org/en-US/docs/Web/JavaScript/A_re-introduction_to_JavaScript>

<https://www.destroyallsoftware.com/talks/wat>

https://github.com/jashkenas/coffeescript/wiki/List-of-languages-that-compile-to-JS

<http://jsfiddle.net/>