


CS50 Section. Week 10. 11/10/15.

Tuesdays 7:00-8:30pm, Science Center 309A. <https://github.com/hathix/cs50-section>.

Neel Mehta. neelmehta@college.harvard.edu. (215) 990-6434.

Get these handouts at <https://github.com/hathix/cs50-section/tree/master/handouts>.

JavaScript

Syntactically very similar to C and PHP. Like PHP, it's *interpreted*, has no explicit variable types (but you don't need that  at the start of every variable name), and is used to code the web (mostly the frontend but also the backend.)

Functions

There are 2 syntaxes you can use!

```
// "function declaration" syntax
function add(a, b) {
    return a + b;
}

// "function literal" syntax
var subtract = function(a, b) {
    return a - b;
};
```

Functions are data types just like integers, strings, etc!

```
function call(myFunction, x, y) {
    return myFunction(x, y);
}

// prints 7
console.log(call(subtract, 9, 2));

// prints 12
console.log(call(function(a, b){
    return a * b;
}, 3, 4));
```

Callbacks

Functions that you pass to other functions are called *callbacks*.

```
// alerts "Sorry for the delay!" after 5 seconds
function callback(){
    console.log("Sorry for the delay!");
};
// setTimeout executes the given function after the given number of milliseconds
setTimeout(callback, 5000);
```

Arrays

Like PHP arrays!

```
// mixed types in arrays
var numbers = [1, 2, 3];
var stuff = ["Cherry", 43.5, ["a", "b", "c"]];

// prints 1, 2, 3
for (var i = 0; i < numbers.length; i++) {
    console.log(numbers[i]);
}

// prints [1, 2, 3, 4]
numbers.push(4);
console.log(numbers);
```

Objects

Kind of like associative arrays in PHP, but cooler! Since functions are just like other data types, you can include them in objects too.

```

var movie = {
  title: "Moneyball",
  year: 2011,
  tags: ["baseball", "oakland"],
  synopsis: function() {
    // `this` gives access to the object's other fields
    return this.title + ": " + this.year;
  }
};

// prints 2011
console.log(movie.year);

// prints "Harry Potter"
movie.title = "Harry Potter";
console.log(movie.title);

// prints "Harry Potter: 2011"
console.log(movie.synopsis());

```

jQuery

jQuery (\$) lets you manipulate the DOM really easily and adds kinds of other cool features.

```

// `$` is just a function with a really short name!
// changes the HTML of the element with id `danger-button`
$("#danger-button").html("Self destruct");

// makes all paragraphs red
$("p").attr("color", "red");

// hides elements of class `old` and shows those of class `new`
$(".old").hide();
$(".new").show();

// hides all paragraphs when button clicked
$("#danger-button").on("click", function() {
  $("p").hide();
});

```

Ajax

Ajax lets you query PHP files through JavaScript without refreshing the page.

```
// notice that jQuery lets you do Ajax, too!
$.getJSON("get-scores.php", { team: "Boston Red Sox" })
.done(function(data, textStatus, jqXHR) {
  // success!
  // data is a JavaScript object; ignore the other 2 variables
  console.log(data);
})
.fail(function(jqXHR, textStatus, errorThrown) {
  // failure!
  // errorThrown provides error info; ignore the other 2 variables
  console.log(errorThrown.toString());
});
```

Templating

Underscore ([_](#)) is a utility library that lets you template a la PHP (cf. `<?= $variable; ?>`.)

```
// prints "<a href='http://yale.edu' class='btn btn-danger'>Safety school</a>"
var templateFunction = _.template("<a href='<%- url %>' class='btn btn-<%- btnClass %>'><%- text %></a>");
var htmlString = templateFunction({
  url: "http://yale.edu",
  btnClass: "danger",
  text: "Safety school"
});
console.log(htmlString);
```

Challenge: Weather

We're going to make a simple weather app!

Weather for Cambridge, MA

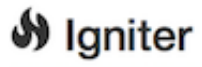
47F and Mostly Cloudy

Give it a shot: http://is.gd/cs50_weather

Solution: <https://github.com/hathix/cs50-section/blob/master/code/10/weather-soln.js>

Challenge: Ignite

We're going to make a dating app where you can see people's bios and "swipe left" or "swipe right" on them. We're gonna be millionaires!



David Malan, 38

This is CS50.

Swipe left

Swipe right

Give it a shot: http://is.gd/cs50_ignite

Solution: <https://github.com/hathix/cs50-section/blob/master/code/10/igniter-soln.js>