

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

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

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

JavaScript

Functions

Like your normal C/PHP functions, but on steroids! Like PHP, there are no explicit types, and you don't have to prefix every variable with `$` like in PHP.

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

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

Functions are variables!

```
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*.

```
// prints "Hi!"
function callback(){
    console.log("Hi!");
};
waitForABitThenRun(callback);
```

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
        console.log(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.

```
// 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.

```
var arguments = {
    key: "value"
};
// notice that jQuery lets you do Ajax, too!
$.getJSON("api-endpoint.php", arguments)
.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>