
INTRO TO JAVASCRIPT: DAY 2

 GENERAL ASSEMBLY

INTRO TO JAVASCRIPT: DAY 2

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LET'S GET DOWN TO BUSINESS



DAY 1 REVIEW

Data Types and Data Structures

The DOM

Control Flow

Events

CODEALONG: TECHNOLOGY SOLUTIONS

Build Video Player Controls

Add a Google Map

<https://developers.google.com/maps/documentation/javascript/3.exp/reference#MapOptions>

DAY 2

The jQuery Library:

- DOM Manipulation
- Effects / Animation
- Document Traversal
- Events

jQuery Plugins

AJAX and APIs

Further Reading and Next Steps

JQUERY IS JAVASCRIPT



JQUERY IS JAVASCRIPT

Or more accurately, jQuery is a “cross-platform JavaScript library designed to simplify the client-side scripting of HTML.”

JQUERY – “WRITE LESS, DO MORE”

Different browsers handle DOM manipulation, transparency effects, and animation in different ways. jQuery abstracts these out so we only need to write the bare minimum.

It also provides simple functions for:

- HTML / CSS Manipulation
- Handling Events (Mouse, Keyboard, Form)
- Animation

jQuery allows you to write less code

JQUERY – WHY DO WE USE IT?

Here's a simple example:

<http://codepen.io/ga-joe/pen/EPVwYQ>
- JS

<http://codepen.io/ga-joe/pen/zrvEOp>
- jQuery

THE \$("X") FUNCTION – GET ALL THE “X”

`$("x");`

- Query the document and return all the “x” elements.
- This could also be written as: `jquery(“x”)`; We use the `$` as a convention to streamline.

`$("li a");`

- Will return all of the `<a>`’s that are within a ``

Any CSS selector can go here (as well as some jQuery-specific selectors that are built-in).

`$("#TENNISBALL")`

jQuery is playing fetch.



Go to the HTML and bring me back the object with the `id="tennisball"`.

`$(".STICK")`

Go to the HTML and bring me back ALL the objects with the class="stick".



THE ALMIGHTY \$() – SELECTING

`$("div");`

`$("#myElement");`

`$(".myClass");`

`$("ul li a.navigation");`

INCLUDE JQUERY IN YOUR PROJECTS

Add a `<script>` tag before your `project.js` pointing to a copy of jQuery.

Option 1: Download and store locally:

- Go to <http://jquery.com/> and click download button

- Store file in `js` folder.

- Add script tag to HTML like any other script

Option 2: Include from Google API or other CDN:

```
<script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.2/jquery.min.js"> </script>
```

Which is better?

<http://encosia.com/3-reasons-why-you-should-let-google-host-jquery-for-you/>

CODEALONG – JAVASCRIPT TO JQUERY

Convert the given site in Javascript to jQuery.

Make the jQuery version better by adding attributes / decoupling name from color.

LAB TIME

WHERE DO WE PUT OUR `<SCRIPT>`?

What happens if we put it in the `<head>`?

RUNNING CODE WHEN THE DOM IS READY

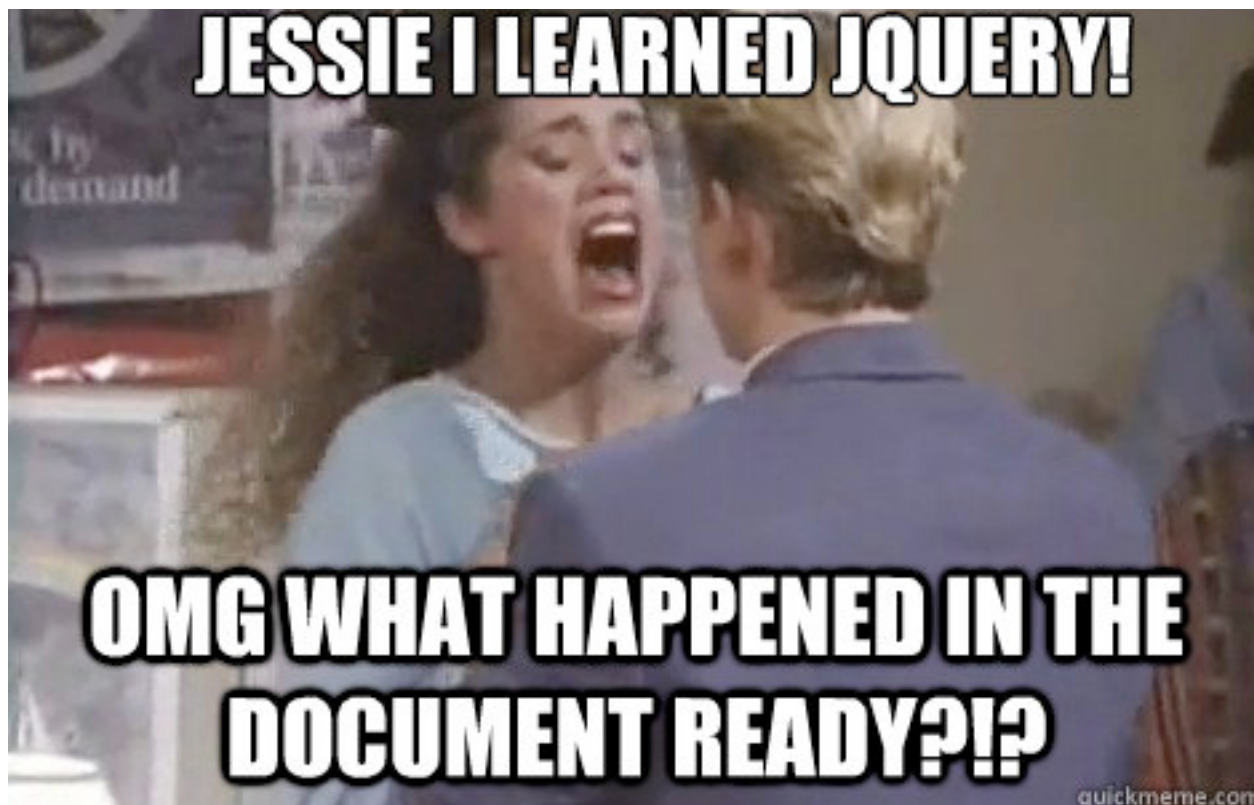


DOCUMENT ... READY!!

```
$(document).ready(function() {  
    //Wait until everything has been loaded in the DOM  
    //Then execute this code.  
});
```

Using `$(document).ready()`, we are able to execute code only once the document is done rendering (i.e. the DOM is ready).

**IT'S ALRIGHT CAUSE I'M SAVED BY THE ...
\$(DOCUMENT).READY()!**



JQUERY

DOM Manipulation

Effects / Animation

Document Traversal

Events

DOM MANIPULATION

These are all ways we can directly change elements on our page.

<http://api.jquery.com/category/manipulation/>

JQUERY – MANIPULATE HTML

`.html(htmlString)`

- inserts (and overwrites!) the html inside the selected elements with the htmlString

`.html()`

- With no argument, it's returns the html inside the matched element

`.append(string)`

- Insert content, specified by the argument, to the end of each element in the set of matched elements.

JQUERY – MANIPULATE CSS

`.css(propertyName, value);`

- Changes the inline CSS values for all matched elements.

`.css({prop1: val1, prop2: val2});`

- Edit multiple properties at once.

`.css(propertyName);`

- Similar to `.html()`, when second arguments is not given, it returns the current value of the css property in question.

GETTING / SETTING ATTRIBUTES

`.attr("attribute-name")`

- Gets the value of the matched attribute "attribute-name" of the matched element fetched by jQuery

`.attr("attribute-name", "new-value")`

- Changes the value of the matched attribute "attribute-name" of the matched element fetched by jQuery to "new-value"

GETTING ATTRIBUTES

```
<a href="http://www.google.com">Google</a>  

```

```
$("a").attr("href"); //Returns "http://www.google.com"  
$("#logo").attr("src"); // Returns "smiley.jpg";  
$("#logo").attr("id"); // Returns "logo";
```

SETTING ATTRIBUTES

``

Calling:

`$("#puppies").attr("src", "images/new-puppies.jpg");`

Will change the image on the page:

``

CODEALONG – JQUERY CITY

User clicks on thumbnail.

- the larger image is replaced by the corresponding thumbnail image.

LAB TIME

HTML INSERTION

`.append("content")`

- Insert "content" at the end of each matched element.

`.prepend("content")`

- Insert "content" to the beginning of each matched element

`.before("content")`

- Insert "content" before all matched elements

`.after("content")`

- Insert "content" after all matched elements

GETTING / SETTING FORM VALUES

`.val()`

- Gets the text in the input and returns it as a String

`.val("Some string")`

- Set the text in the input to "Some string"

`<input id="age" type="text">`

`$("#age").val();` // Returns the value stored in the input

`$("#age").val("21");` // Sets the text in the input to "21"

CODEALONG – LIST MAKER

Create a Grocery List by adding additional `` items to the ``. User enters item into input, clicks "Add", text is scraped from input, and added to an `` at the end of the ``.

Cue cheesy stock photo ->



LAB TIME

MANIPULATING CSS CLASS NAMES

```
$("div").addClass("special");  
    //adds class="special" to all <div> elements
```

```
$("div").removeClass("special");  
    // removes class="special" from all <div> elements
```

MANIPULATING CSS CLASS NAMES

```
$("#div").toggleClass("special");
```

```
// toggles the class="special" on all <div> elements (adds it if it doesn't exist, and removes it if it does)
```

```
if ($("#myElement").hasClass("special")) {  
    // do something here  
}
```

WHAT DOES THIS DO?

`Click on
me to
change color.`

```
$("#span").click(function() {  
    $("#span").addClass("red");  
});
```

WHAT DOES `$(THIS)` DO?

When you are in an event (for instance a `.click()`), calling `$(this)` will return the object that initiated that event.

```
$("#span").click(function() {  
    $(this).addClass("red");  
});
```

WHAT DOES \$(THIS) DO?

Incorporate this change here:

<http://codepen.io/ga-joe/pen/WrQZjo>

As we click, we want each word to become red, rather than ALL the words turning red at once.

CODEALONG – LIST MAKER

A more robust List Maker.

- Delete an entry.
- Do some validation.
- Accept “enter” key submission.

JQUERY

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EFFECTS

"These include simple, standard animations that are frequently used."

<http://api.jquery.com/category/effects/>

HIDE / SHOW / TOGGLE

`.hide()`

- Hide the matched elements

`.show()`

- Show the matched elements

`toggle()`

- If object is currently hidden, `show()`
- If object is currently shown, `hide()`

FADEIN / FADEOUT

`.fadeIn(400);`

- Fade the matched elements in over 400 ms

`.fadeOut(400);`

- Fade the matched elements out over 400 ms

SLIDEUP / SLIDEDOWN

`.slideUp(500);`

- Hide the the matched elements with a sliding-up animation over 500 ms

`.slideDown(500);`

- Show the the matched elements with a sliding-up animation over 500 ms

`.slideToggle(500);`

- If shown, `slideUp(500)`
- If hidden, `slideDown(500)`

CODEALONG – ACCORDION

We will also look at Font Awesome:

<https://fontawesome.github.io/Font-Awesome/>

LAB TIME

ANIMATIONS – .ANIMATE();

```
$("#myElement").animate({  
    "opacity": ".3",  
    "width": "500px",  
    "height": "700px"  
}, 2000);
```

The `.animate()` method allows us to create animation effects on (most) numeric CSS properties.

.ANIMATE() THESE THINGS:

"border-width"

"border-bottom-width"

"border-left-width"

"border-right-width"

"border-top-width"

"margin"

"margin-bottom"

"margin-left"

"margin-right"

"margin-top"

"padding"

"padding-bottom"

"padding-left"

"padding-right"

"padding-top"

"height"

"width"

"font-size"

"top"

"left"

"bottom"

"right"

CALLBACK FUNCTION

A callback function is a function that runs **AFTER** an effect is completed. It is super useful for timing things around animations.

For example:

```
$("p").fadeOut(2000 ,function(){  
    alert("The paragraphs are now gone.");  
});
```

// This will fadeOut all the paragraphs on the page over 2 seconds, then, once that has completed, send an alert.

LUNCH

JQUERY

DOM Manipulation

Effects / Animation

Document Traversal

Events

DOCUMENT TRAVERSAL

How we "get-around" within our document. How each element is related to all the other elements on the page.

<http://api.jquery.com/category/traversing/>

IT'S ALL IN THE FAMILY

`.children()`

- Get the child elements

`.parent()`

- Get the parent element

`.siblings()`

- Get the sibling elements

BROTHERS AND SISTERS

`.next()`

- Get the immediately following sibling element

`.next("some selector")`

- Get the immediately following sibling element but only if it matches "some selector"

`.prev()`

- Get the immediately preceding sibling element

BROTHERS AND SISTERS

`.index()`

Returns an item's index within its siblings.

`.eq(someNumber)`

Returns the item at the specified index (someNumber)

CODEALONG – CAROUSEL

We want to make this generic for ANY number of slides and any navigation? How can we do this?

Think about the DOM tree structure ...

LAB TIME

JQUERY

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EVENTS

“These methods are used to register behaviors to take effect when the user interacts with the browser, and to further manipulate those registered behaviors.”

We’ve already looked-at `.click()`;

<http://api.jquery.com/category/events/>

MOUSE EVENTS

```
$("#somediv").mouseenter(function() {  
    //fired when the mouse enters an element  
});
```

```
$("#somediv").mouseleave(function() {  
    //fired when the mouse leaves an element  
});
```

```
$("#somediv").hover(function() {}, function() {});  
// hover() is shorthand for mouseenter() and mouseleave() above
```

KEYBOARD EVENTS

```
$("#somediv").keypress(function() {  
    //fired when the keyboard is pressed on an element  
});
```

WINDOW EVENTS

```
$(window).resize(function() {  
    //fired when browser is resized  
});
```

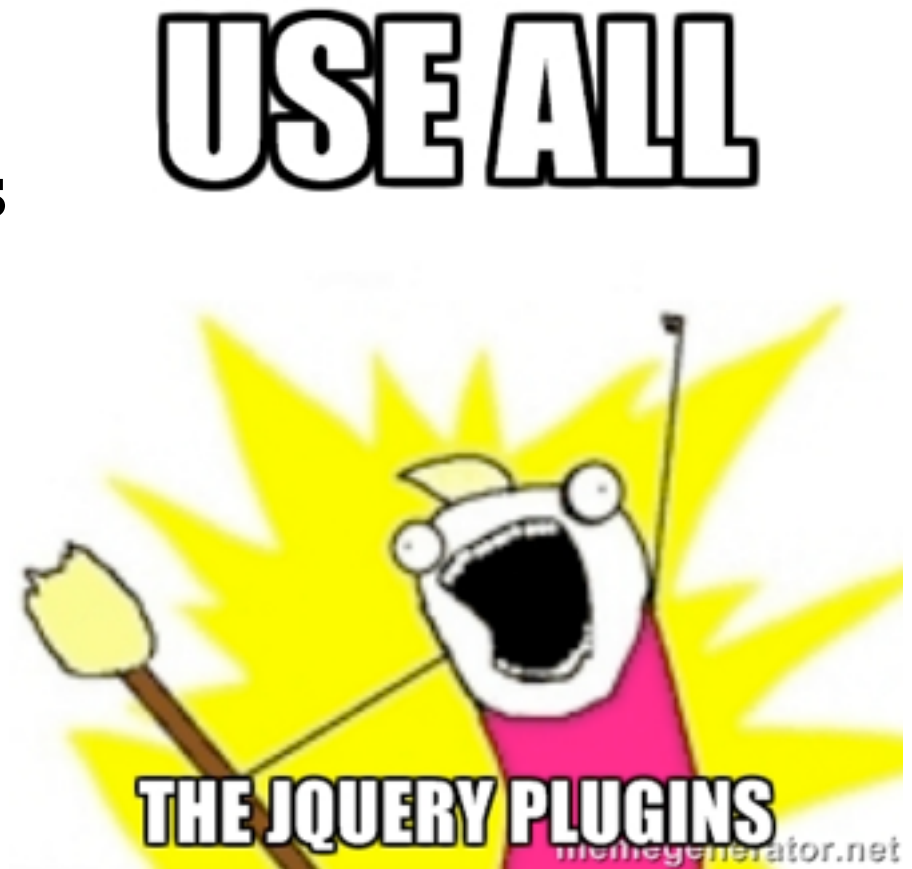
```
$(window).scroll(function() {  
    //fired when browser is scrolled  
});
```

BREAK

JQUERY PLUGINS

JQUERY PLUGINS

There are so many plugins that other people have made and spend time actively testing and developing. We are going to work with a few today.



JQUERY PLUGINS

What IS a jQuery plugin? Basically, it is an additional piece of JS code (with, optionally, some support images and CSS) that abstracts some complicated jQuery functionality out and can be re-used in our code.

We add an additional `<script>` to our HTML. We, optionally link any needed images and CSS. And then we reference the custom JS according to the plugin documentation.

WHAT ARE SOME THINGS WE CAN DO?

Animation.

Slideshows.

Page Scrolling.

Form Processing.

Lightboxes / Other Modal Views.

Datepickers, Sliders, Widgets, and Other Tools.

JQUERY PLUGINS

There are thousands upon thousands. Google is your best friend here. Some plugins of note:

- <http://jqueryui.com/>
- <http://fitvidsjs.com/>
- <http://responsejs.com/>
- <http://noelboss.github.io/featherlight/>
- <http://www.owlcarousel.owlgraphic.com/>

WHAT TO LOOK FOR IN A PLUGIN

Recently Updated

Well-Documented

Example Implementations

Creative Commons Licensing

Open Source

Hosted on Github / Active User Base

JS LIBRARIES

JS LIBRARIES

There are plenty of Javascript libraries that have been written that don't rely on jQuery per se.

<https://modernizr.com/>

- Feature detection for modern device development.

<http://masonry.desandro.com/>

- Cool “brick-pattern” layout library.

<http://hammerjs.github.io/>

- Use touch screen gestures in your site.

CODEALONG – PLUGIN PLAYGROUND

LAB TIME

A WORD OF WARNING ...

DON'T BECOME TOO RELIANT ON JQUERY!

<http://youmightnotneedjquery.com/>

NEXT STEPS

KEEP LEARNING!!

Learn more JS

Learn a Front-End Framework (e.g. Bootstrap, Foundation)

Learn a JS Framework (e.g. Angular)

JAVASCRIPT RESOURCES



jQuery and Javascript

- <http://www.codecademy.com/en/tracks/jquery>
- <http://learn.jquery.com/>
- <http://www.codecademy.com/en/tracks/javascript>
- <http://www.html5dog.com/guides/javascript/>
- <https://developer.mozilla.org/en-US/learn/javascript>
- <http://learn.jquery.com/javascript-101/>

JAVASCRIPT RESOURCES



Books

- Eloquent Javascript - <http://amzn.to/1wOnGVN>
- Professional Javascript for Web Developers - <http://amzn.to/1u6wGJN>
- Javascript the Definitive Guide - <http://amzn.to/1qvHNun>
- Javascript and jQuery Book - <http://www.javascriptbook.com/>

BOOTSTRAP RESOURCES



<http://getbootstrap.com/>

<http://www.sitepoint.com/twitter-bootstrap-tutorial-handling-complex-designs/>

<http://getbootstrap.com/getting-started/>

<http://webdesign.tutsplus.com/tutorials/twitter-bootstrap-101-introduction--webdesign-5459>

FOUNDATION RESOURCES



<http://foundation.zurb.com/>

<http://www.webdesignerdepot.com/2013/11/how-to-get-started-with-foundation-5/>

<http://webdesign.tutsplus.com/series/foundation-for-beginners--webdesign-12744>

<http://ieatcss.com/zurb-foundation-framework.html>

ANGULAR RESOURCES



<https://angularjs.org/>

<http://www.toptal.com/angular-js/a-step-by-step-guide-to-your-first-angularjs-app>

<http://code.tutsplus.com/tutorials/building-a-web-app-from-scratch-in-angularjs--net-32944>

ASK ME ANYTHING

STAY IN TOUCH!

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