WEEKLY OVERVIEW

WEEK 5	Intro to jQuery / jQuery Part 2
WEEK 6	Functions / JS Lab

JQUERY

LEARNING OBJECTIVES

- Differentiate between the jQuery library and the JavaScript language, and describe benefits of using each.
- Add jQuery to a project.
- Recognize jQuery syntax.
- Use jQuery to select and update elements in the DOM.
- Write jQuery code to detect and react to events in the DOM.

AGENDA

- Intro to jQuery
- Using jQuery
- Method Chaining
- Debugging
- Lab

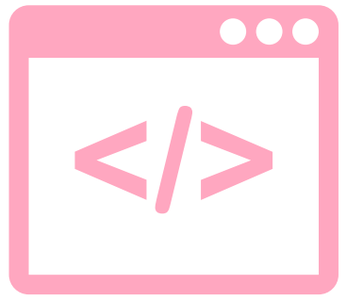
INTRO TO JQUERY

YOUR RESPONSIBILITIES

Don't feel like you have to sit down and memorize the syntax!

Focus on understanding the key concepts

Be resourceful. Google is your best friend

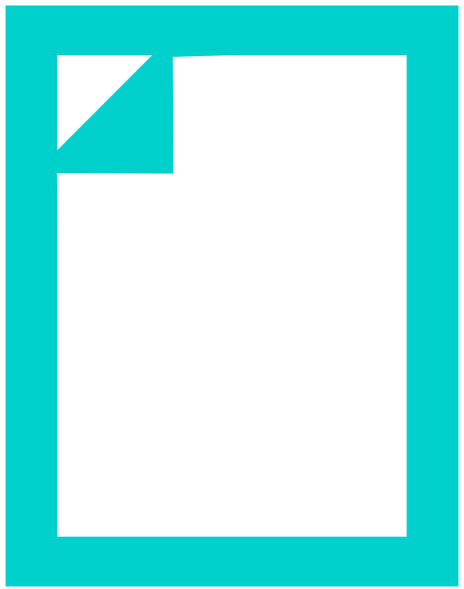


Practice, practice, practice

THE BASICS

INTRO TO JQUERY — YOUR NEW BEST FRIEND!

jQuery is a JavaScript file you include in your pages.



THE DOM

DOM TREE — HTML FILE

index.html *

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4    <meta charset="UTF-8">
5    <title>The Evolution of Denim</title>
6  </head>
7  <body>
8
9    <h1>The Evolution of Denim</h1>
10   <p>
11     Chambray retro plaid gentrify letterpress.
       Taxidermy ennui cliche Intelligentsia. Echo
       Park umami authentic before they sold out. <a
       href="https://placekitten.com/">Forage
       wayfarers</a> listicle Kickstarter, Pitchfork
       cray messenger bag fap High Life tilde pug
       Blue Bottle mumblecore.
12   </p>
13   <ul>
14     <li>Dark Wash</li>
15     <li>Stone Wash</li>
16     <li>Chambray</li>
17   </ul>
18
19 </body>
20 </html>
```

DOM TREE

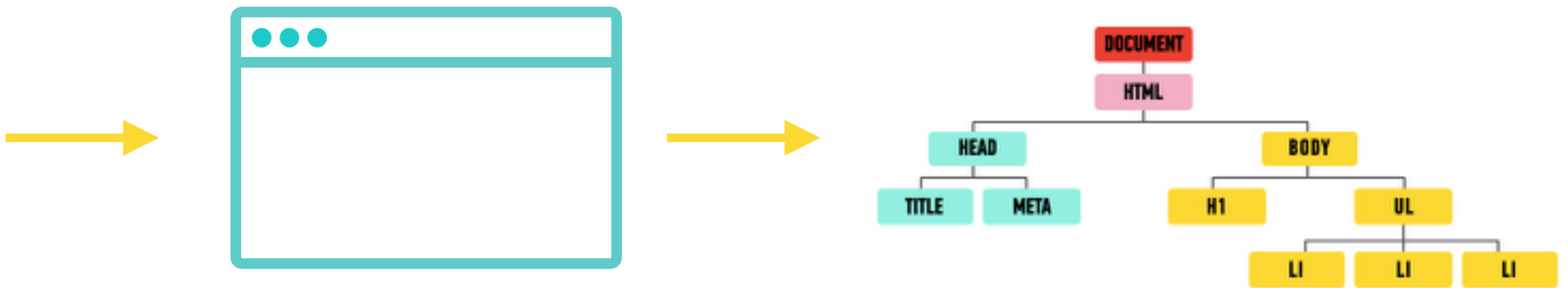
- The browser pulls in this HTML document, analyzes it, and creates an *object model* of the page in memory.
- This model is called the *Document Object Model (DOM)*.
- The DOM is structured like a tree, a DOM Tree, like in the model below:

index.html

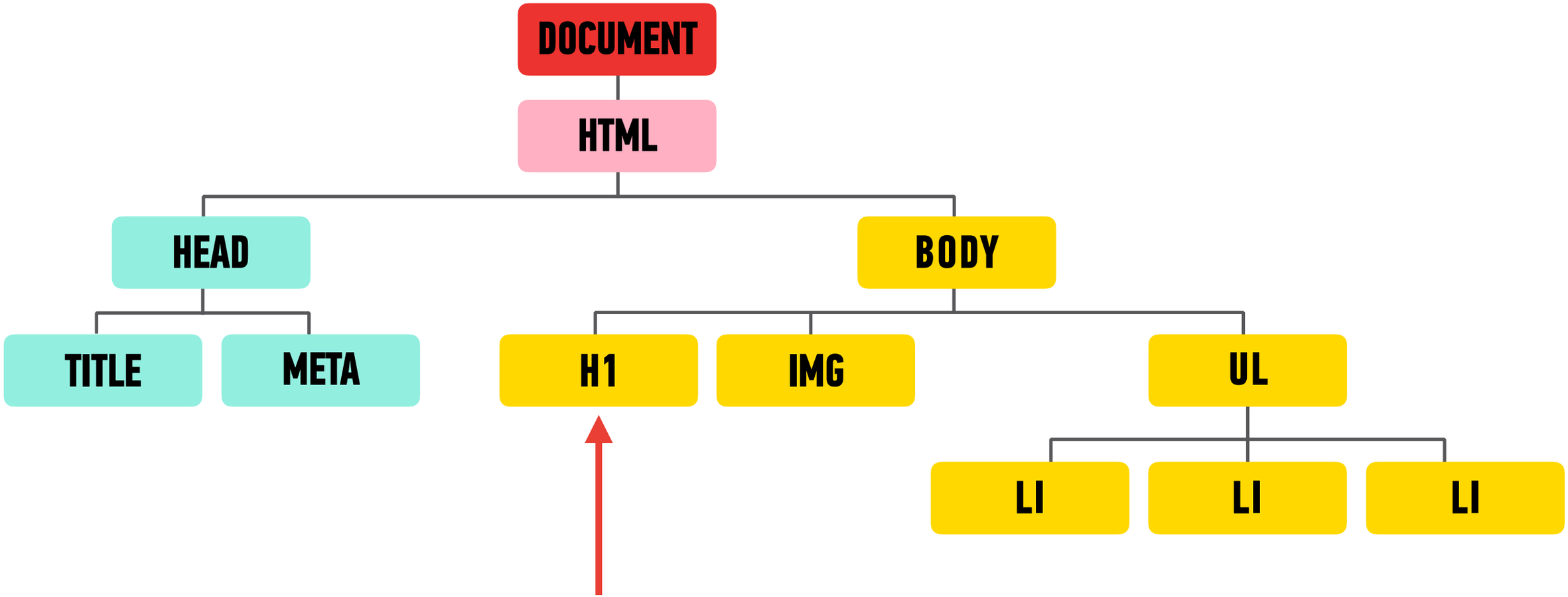
```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>The Evolution of Denim</title>
</head>
<body>

  <h1>The Evolution of Denim</h1>
  <p>
    Chambray retro plaid gentrify letterpress.
    Taxidermy ennui cliche Intelligentsia. Echo
    Park umami authentic before they sold out. <a
    href="https://placekitten.com/">Forage
    wayfarers</a> listicle Kickstarter, Pitchfork
    cray messenger bag fap High Life tilde pug
    Blue Bottle mumblecore.
  </p>
  <ul>
    <li>Dark Wash</li>
    <li>Stone Wash</li>
    <li>Chambray</li>
  </ul>

</body>
</html>
```

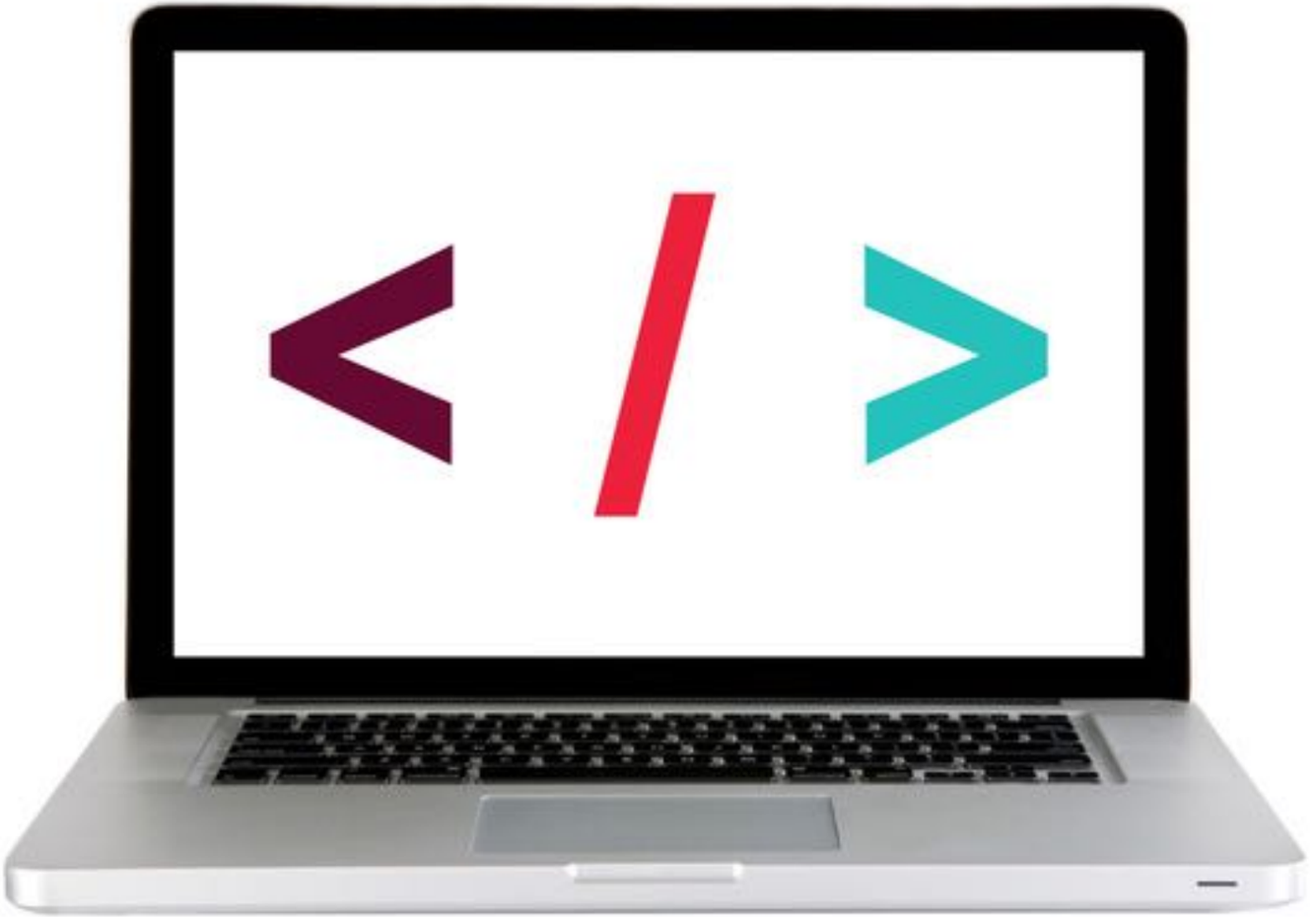


DOM TREE



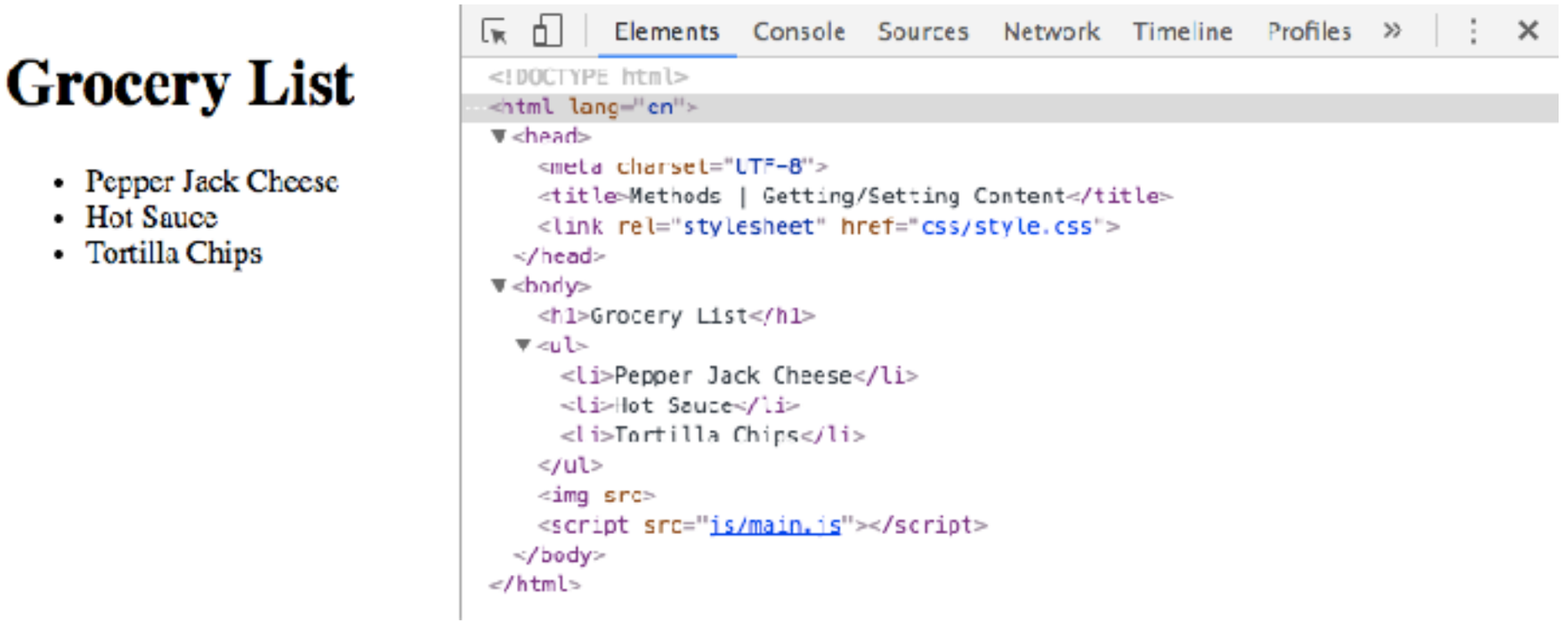
- Each element in the HTML document is represented by a *DOM node*.
- You can think of a node as a live object that you can access and change using JavaScript.
- When the model is updated, those changes are reflected on screen.

LET'S TAKE A LOOK

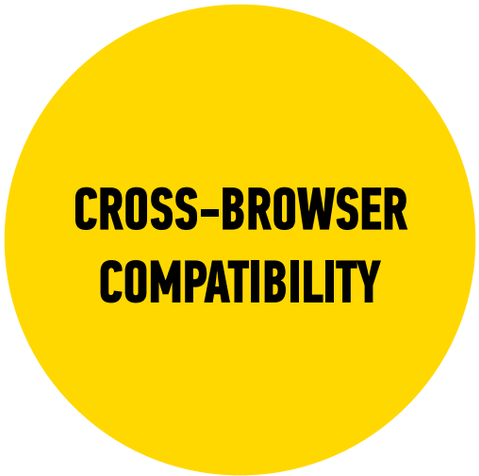


DOM TREE

- In Chrome, you can go to View > Developer > Developer Tools and click on the Elements panel to take a look at the DOM tree.

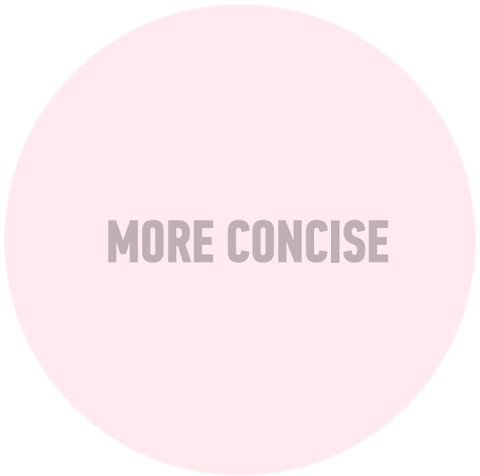


INTRO TO JQUERY — YOUR NEW BEST FRIEND!



Works the same
in all browsers

Use more familiar,
CSS-style syntax

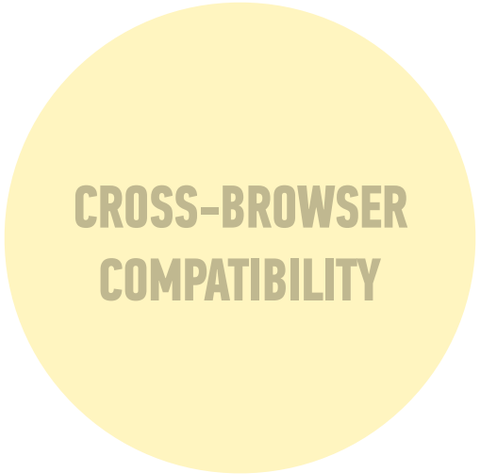


Write way less code to
achieve the same tasks

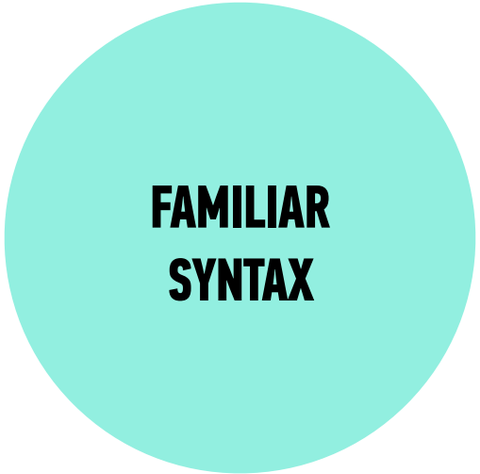
JQUERY VS. JAVASCRIPT

jQuery will ensure that our code works the same in different browsers.

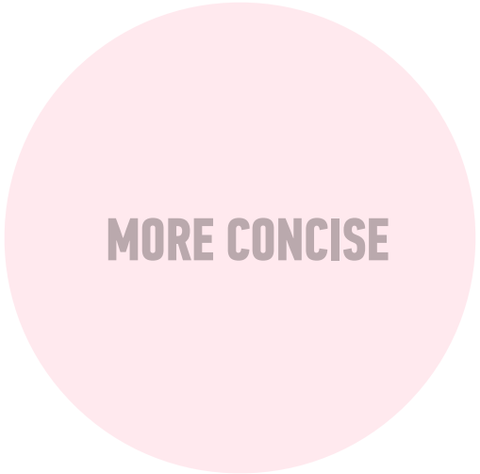
INTRO TO JQUERY — YOUR NEW BEST FRIEND!



Works the same
in all browsers



Use more familiar,
CSS-style syntax

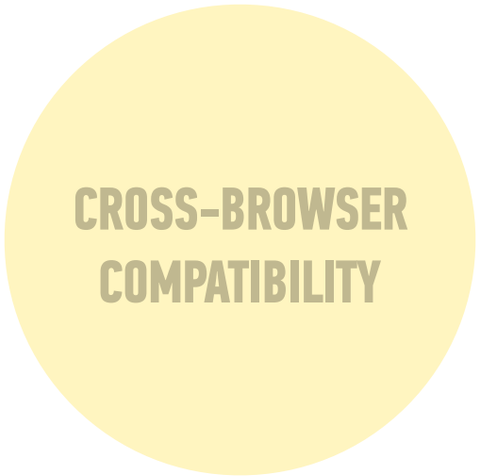


Write way less code to
achieve the same tasks

JQUERY VS. JAVASCRIPT

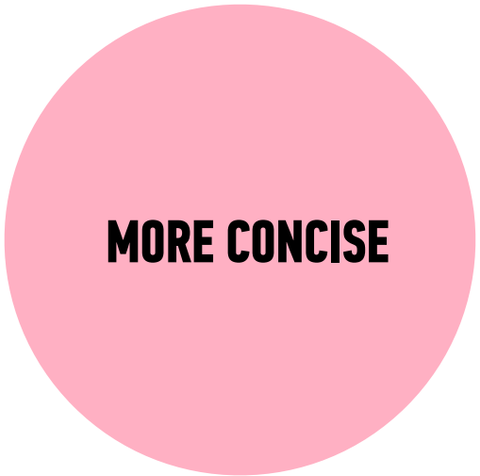
jQuery allows us to use the CSS-style selectors that we know and love! Yay!

INTRO TO JQUERY — YOUR NEW BEST FRIEND!



Works the same
in all browsers

Use more familiar,
CSS-style syntax



Write way less code to
achieve the same tasks

JQUERY VS. JAVASCRIPT

JS:

```
document.getElementById('heading').textContent = "Your Name";
```

JQUERY:

```
$('#heading').text('Your Name');
```

You could do everything jQuery does with plain-old vanilla Javascript

JQUERY VS. JAVASCRIPT — A COMPARISON OF BENEFITS

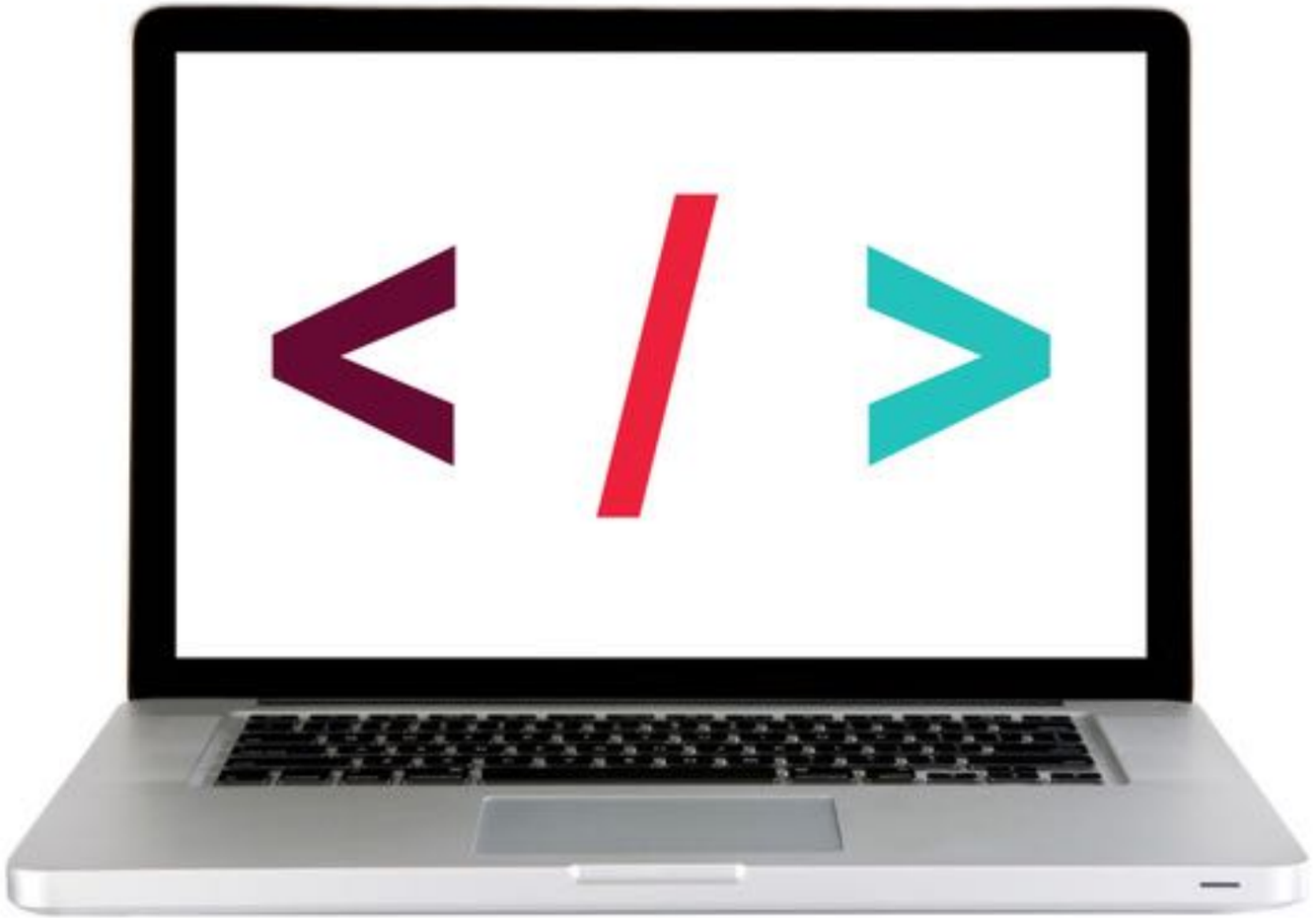
JQUERY

- Write way less code to achieve the same tasks
- Cross-browser compatibility
- Use more familiar, CSS-style syntax

PURE JAVASCRIPT

- Better performance
- Faster

LET'S TAKE A CLOSER LOOK – COLOR SWITCHER



ACTIVITY

KEY OBJECTIVE

- Summarize the difference between the jQuery library and the JavaScript language, and describe benefits of using pure JavaScript vs. jQuery.

TYPE OF EXERCISE

- Turn and talk

AS A CLASS

1 min	Discuss the above question with a partner.
2 min	Discuss as a class

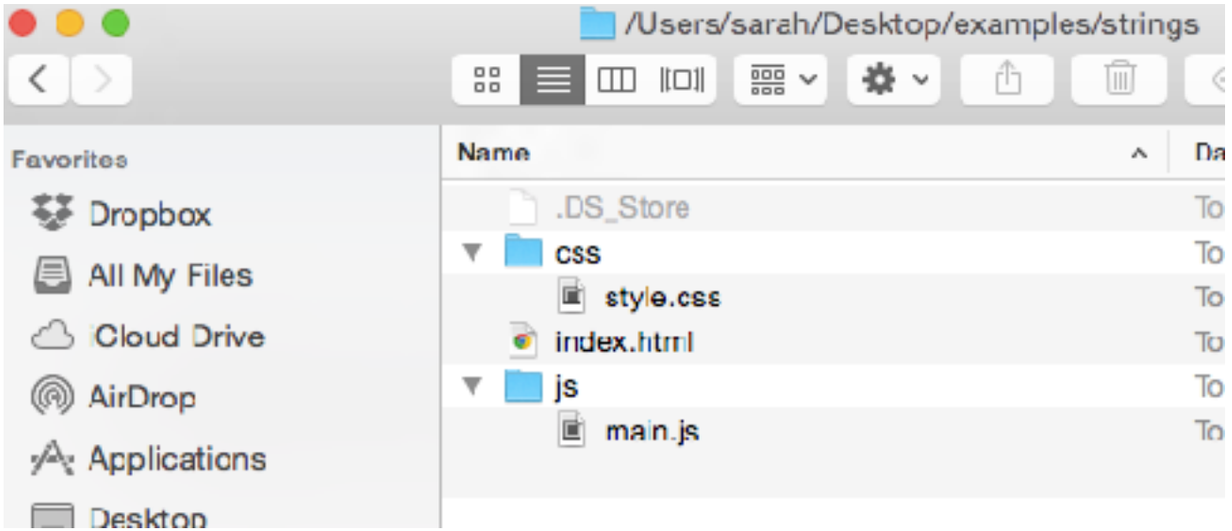
LEARNING OBJECTIVES

- Differentiate between the jQuery library and the JavaScript language, and describe benefits of using each.
- Add jQuery to a project.
- Recognize jQuery syntax.
- Use CSS selectors with the jQuery or $ method to select and update elements in the DOM.
- Write jQuery code to detect and react to events in the DOM.

ADDING JQUERY TO YOUR PROJECT

KEEP IT ON THE UP AND UP!

- It is considered **best practice** to keep Javascript files organized in one folder.
- Usually people name this folder *scripts*, *js*, or *javascript*.



Remember - use an underscore or dash between words in folder names instead of a space. And try to avoid characters/symbols in file names (*really_cool_page.html* or *really-cool-page.html*).

STEP 1: ADD JQUERY TO YOUR WEBSITE

1. Download the jQuery script (version 3.x, compressed).
2. Add a `js` folder to your project
3. Move the jQuery file you downloaded to the `js` folder
4. Use a `<script>` tag to include the jQuery file after your HTML content and before any other JavaScript files that use it.

```
<body>
  <!-- HTML content here -->
  <script src="js/jquery-3.2.min.js"></script>
  <script src="js/main.js"></script>
</body>
```

STEP 2: ADD A JAVASCRIPT FILE

1. Create a Javascript file. This process will be similar to creating an HTML or CSS file, but this time the file should have a .js extension (example: main.js)
2. Link to the Javascript file from your HTML page using the <script> element. Add this **right before the closing body tag and after your jquery file.**

```
<body>
  <!-- HTML content here -->
  <script src="js/jquery-3.2.min.js"></script>
  <script src="js/main.js"></script>
</body>
```

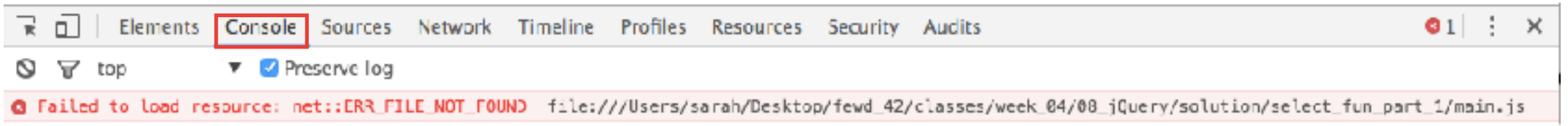
ORDER IS IMPORTANT!!!!

MAKE SURE YOUR JS IS HOOKED UP PROPERLY

- **Method 1:** Add an alert to the top of your JS file. When you open the page in your browser, an alert will pop up if your JavaScript file is properly hooked up.

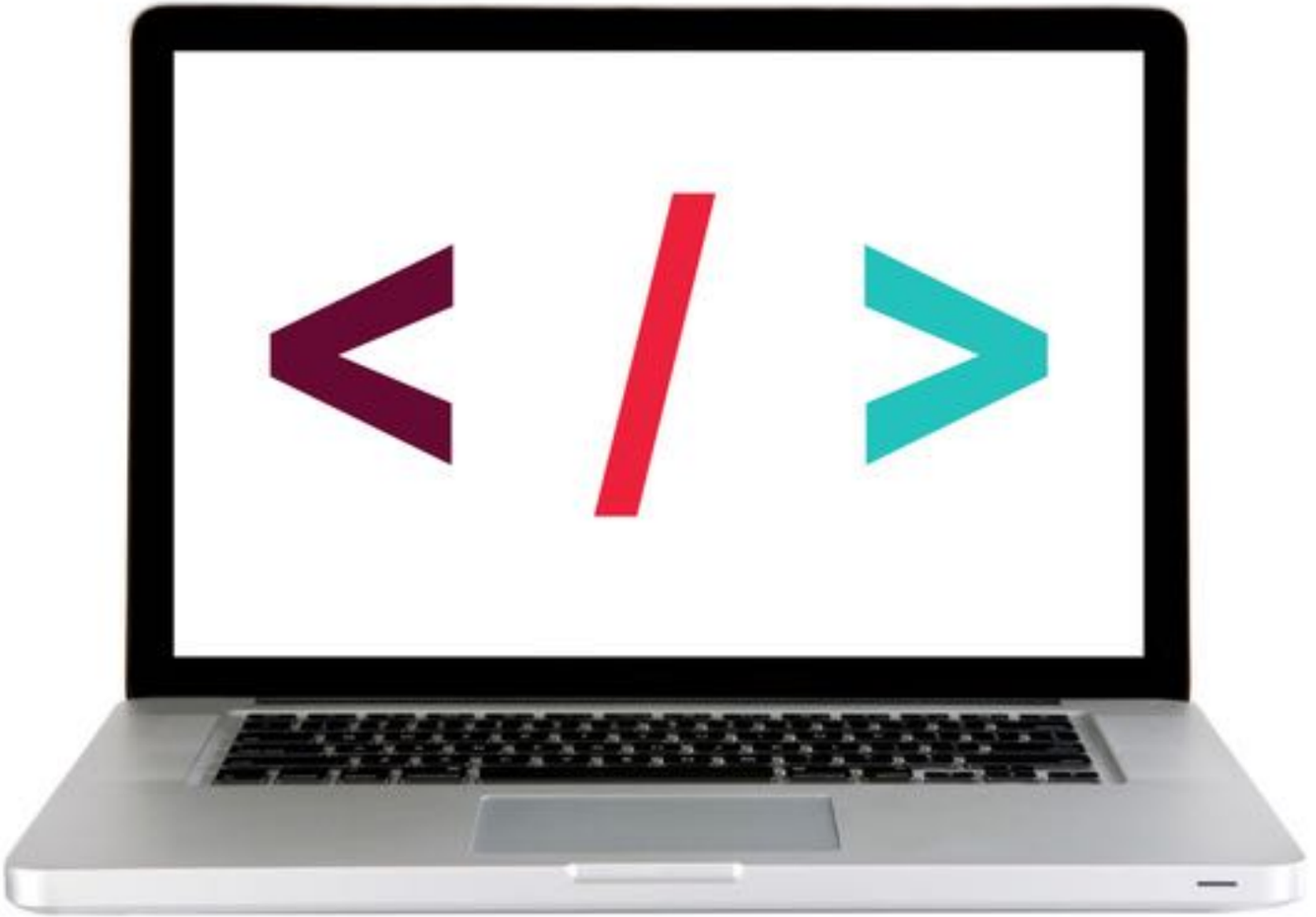
```
alert('Hello from JS!);
```

- **Method 2 (preferred):** Open the page in Chrome. Go to view > developer > developer tools. Click on the console tab and make sure there are no errors.



This error means the file can't be found. Check your url in your script tag. Make sure the file exists.

LET'S TAKE A CLOSER LOOK



LEARNING OBJECTIVES

- Differentiate between the jQuery library and the JavaScript language, and describe benefits of using each.
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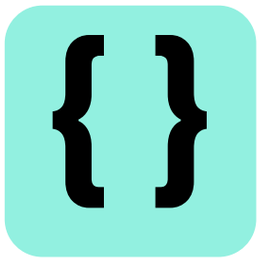
USING JQUERY

JS SYNTAX

Syntax: Spelling and grammar rules of a programming language.



Like any language, there are formal rules around how to write Javascript. This is the syntax.

COMMENTS

```
// this is a single line comment
```

```
/*
this
is
a
multiline comment
*/
```

VS Code shortcuts: highlight what you want to comment, then

- *command + / (single line comment)*
- *shift + alt + a (block comment)*

PART 1 — SELECT AN ELEMENT

CLASSES AND IDS — REVIEW

```
<button id="form-submit">Submit</button>

<li class="circle">One</li>

<h1>Color Scheme Switcher</h1>
```

USING JQUERY TO MANIPULATE THE DOM

1

Select an element/elements

2

Work with those elements

JQUERY — SELECTING ELEMENTS

```
$('#info')  =  jQuery('#info')
```

JQUERY OBJECTS — FINDING ELEMENTS: SOME EXAMPLES

	CSS	JQUERY
ELEMENT	`a { color: blue; }`	`$('a')`
ID	`#special { color: blue; }`	`$('#special')`
CLASS	`.info { color: blue; }`	`$('.info')`
NESTED SELECTOR	`div span { color: blue; }`	`$('div span')`

```
<button id="form-submit">Submit</button>

<li class="circle">One</li>

<h1>Color Scheme Switcher</h1>
```

PART 2 — ADD A METHOD

USING JQUERY TO MANIPULATE THE DOM

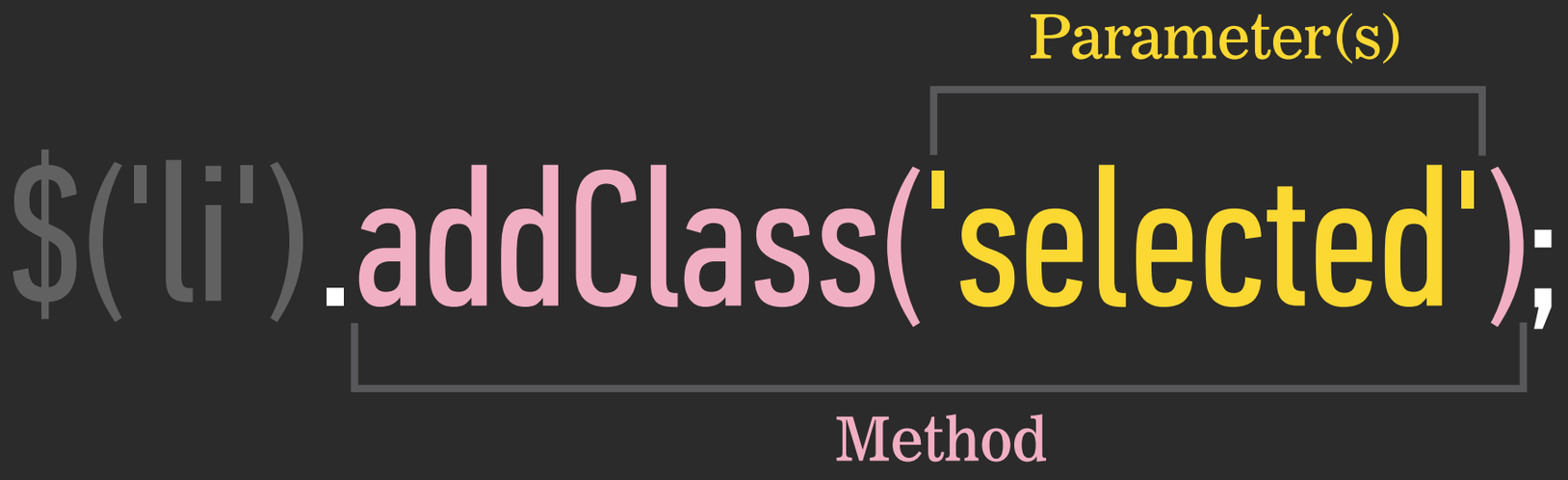
1

Select an element/elements

2

Work with those elements

JQUERY — WORKING WITH THOSE ELEMENTS



JQUERY METHODS

Be forewarned!

There are a lot of methods!

Do not feel like you need to sit down and memorize these. The important things is knowing that they're there and **being able to look them up** in the documentation.

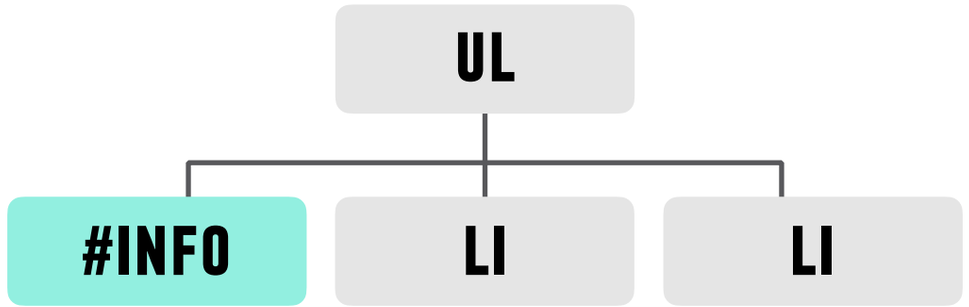
JQUERY METHODS — WORKING WITH THOSE ELEMENTS

After we've selected elements, we can use jQuery methods to:

See your handout or the jQuery docs for list!

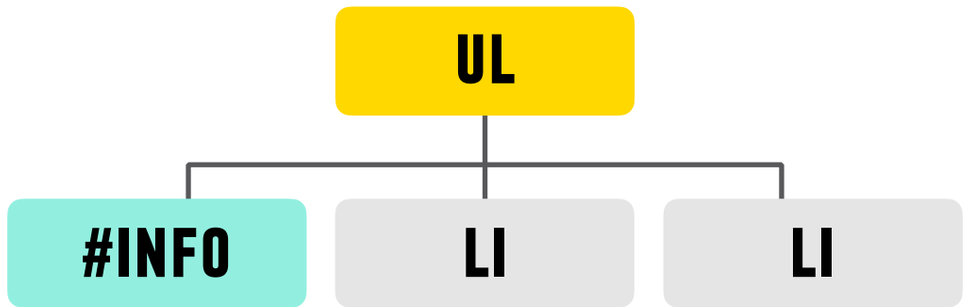
TRAVERSING THE DOM?

```
$('#info').parent();
```



TRAVERSING THE DOM?

```
$('#info').parent();
```



JQUERY METHODS — TRAVERSING THE DOM

TRAVERSE THE DOM

- Think of these as filters, or part of the selection process.
- They must come *directly after another selection*

METHODS	EXAMPLES
`.find()` *finds all descendants*	`$('h1').find('a');`
`.parent()`	`$('#box1').parent();`
`.siblings()`	`$('p').siblings('.important');`
`.children()`	`$('ul').children('li');`

What goes in the parentheses?
A **css-style selector**

JQUERY METHODS — WORKING WITH THOSE ELEMENTS

After we've selected elements, we can use jQuery methods to:

FIND ELEMENTS

GET/SET CONTENT

ADD EFFECTS/ ANIMATION

CREATE EVENT LISTENERS

See your handout or the jQuery docs for list!

GETTING/SETTING CONTENT — PART 1

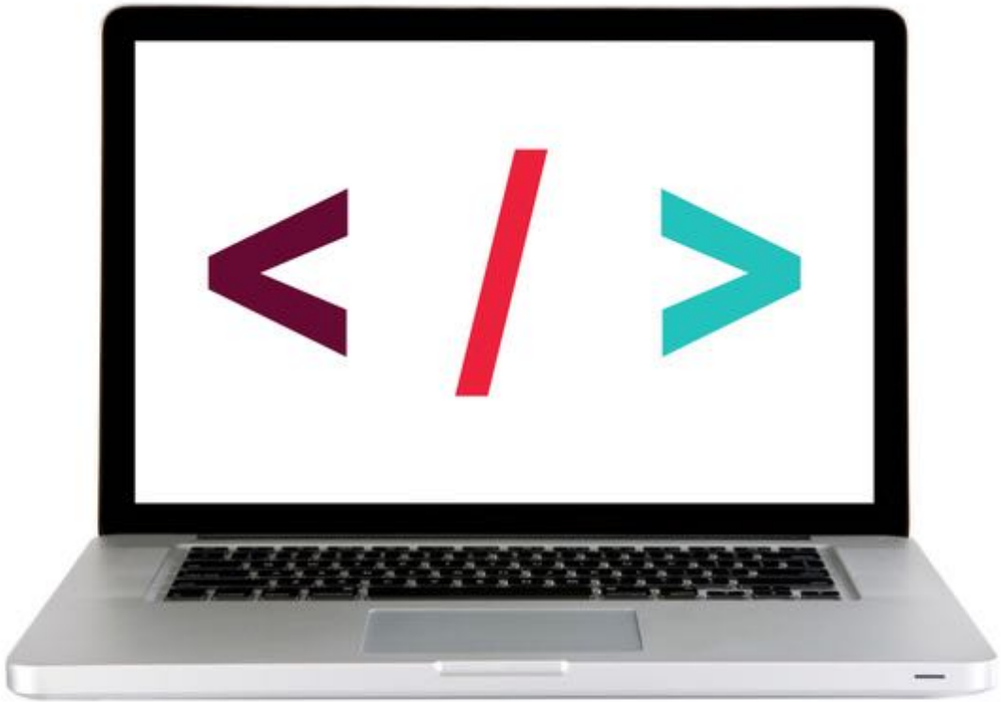
GET/SET CONTENT

Get/change content of elements and attributes

METHODS	EXAMPLES
.html()	$('h1').html('Content to insert goes here');
.attr()	$('img').attr('src', 'images/bike.png');
.css()	$('#box1').css('color', 'red');

What goes in the parentheses?
The **html or styles** you want to change.

LET'S TAKE A CLOSER LOOK



GETTING/SETTING CONTENT — PART 2

GET/SET CONTENT

Get/change content of elements and attributes

METHODS	EXAMPLES
`.addClass()`	`$('p').addClass('success');`
`.removeClass()`	`$('p').removeClass('my-class-here');`
`.toggleClass()`	`$('p').toggleClass('special');`

What goes in the parentheses?
The **classes** you want to change.

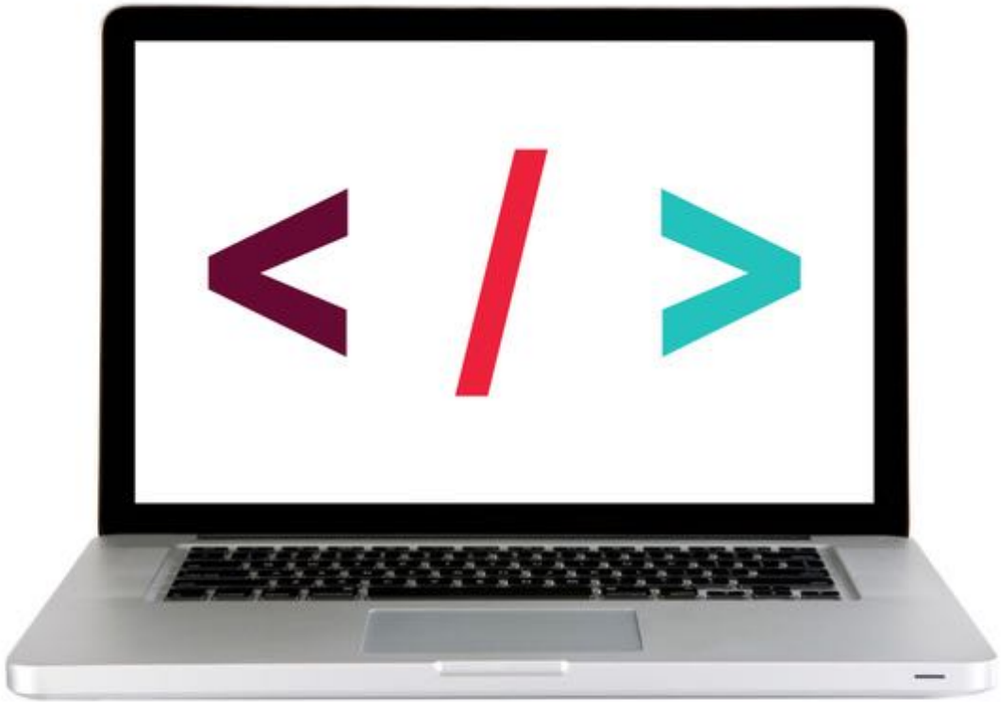
JQUERY METHODS — GETTING/SETTING CONTENT

GET/SET CONTENT

```
$('li').addClass('selected');
```

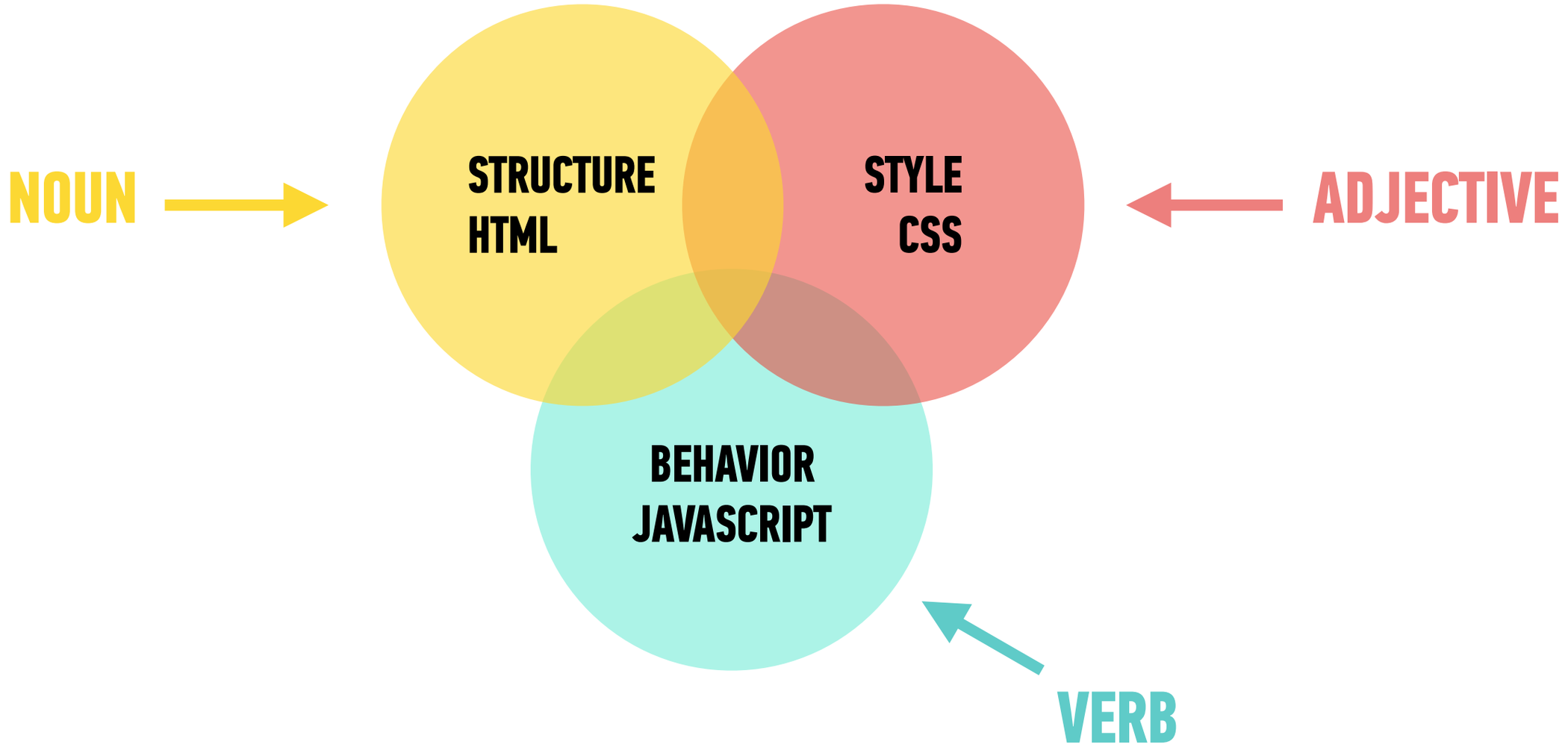
NO PERIOD!!!

LET'S TAKE A CLOSER LOOK



SEPARATION OF CONCERNS

THE TRIPLE SCOOP: STRUCTURE, STYLE, BEHAVIOR



SEPARATION OF CONCERNS

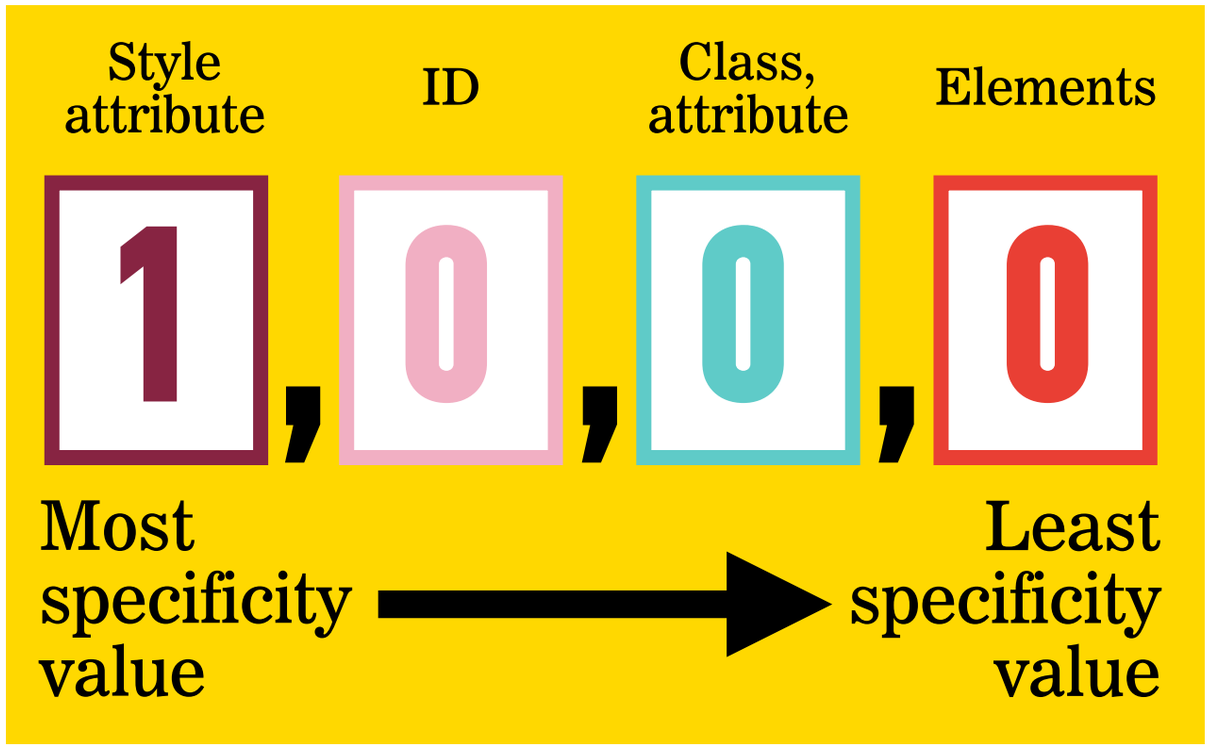
- Our JavaScript should focus on *behavior* and not on *presentation* (that's what our CSS is for!
- How could we refactor our Color Switch from last week to follow this guideline?

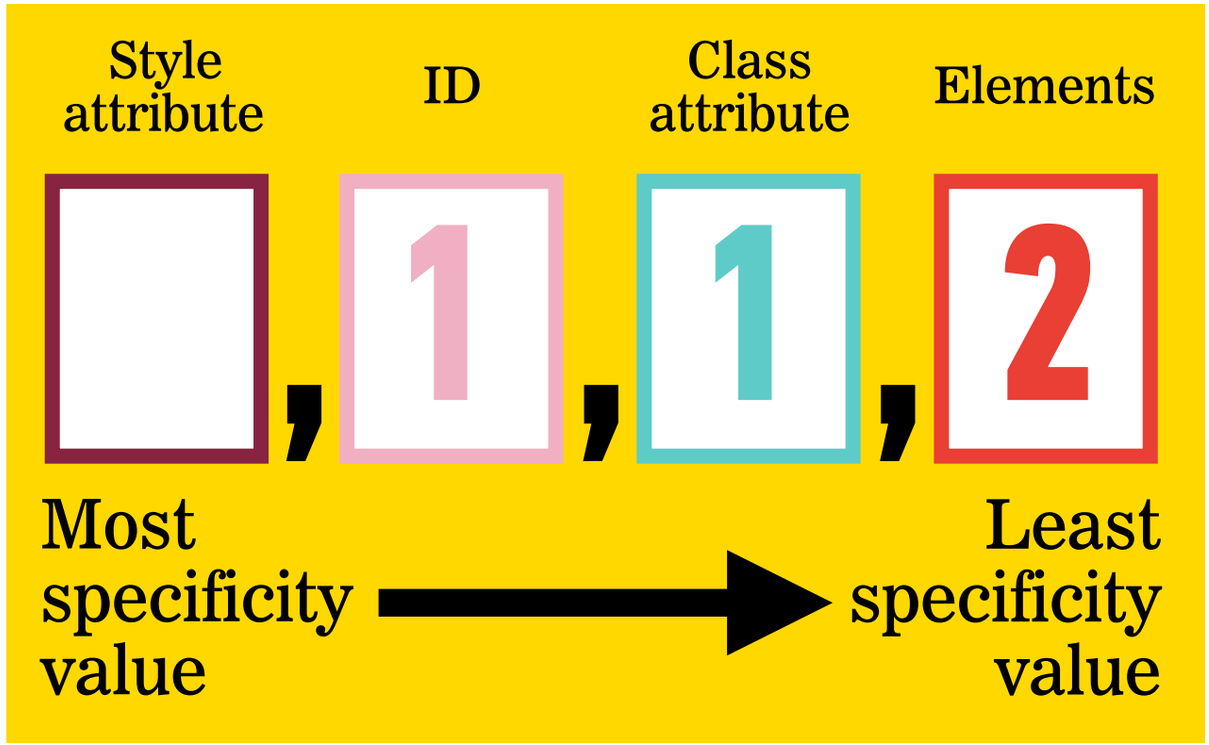
CSS CASCADING

WINNER!

<li style="color: red">

#about .first li





ACTIVITY

KEY OBJECTIVE

- Utilize jQuery to access and manipulate DOM elements.

TYPE OF EXERCISE

- Individual/Partner

AS A CLASS

5 min Exercise is in 09_starter_jquery > jquery_code_along

1. Follow the instructions under part 1 in main.js
2. Use cheat sheet/slides as a guide for syntax

JQUERY METHODS — WORKING WITH THOSE ELEMENTS

After we've selected elements, we can use jQuery methods to:

See your handout or the jQuery docs for list!

JQUERY METHODS — EFFECTS/ANIMATION

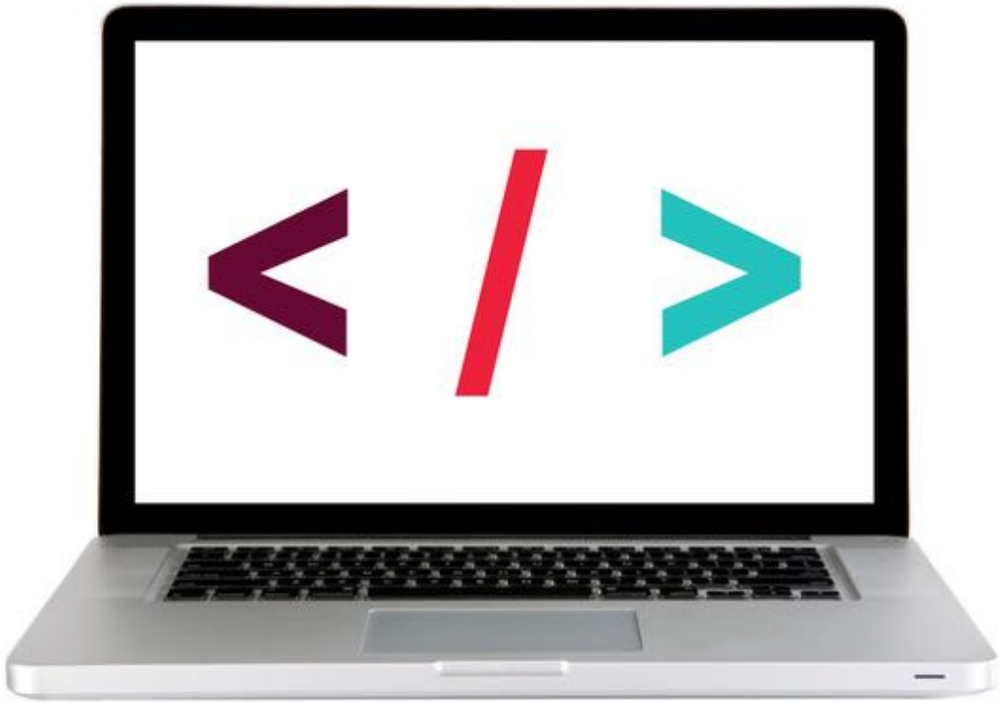
ADD EFFECTS/ ANIMATION

Add effects and animation to parts of the page

METHODS	EXAMPLES
.show()	$('h1').show();
.hide()	$('ul').hide();
.fadeIn()	$('h1').fadeIn(300);
.fadeOut()	$('.special').fadeOut('fast');
.slideUp()	$('div').slideUp();
.slideDown()	$('#box1').slideDown('slow');
.slideToggle()	$('p').slideToggle(300);

What goes in the parenthesis?
An animation speed

LET'S TAKE A CLOSER LOOK



LEARNING OBJECTIVES

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JQUERY METHODS — WORKING WITH THOSE ELEMENTS

After we've selected elements, we can use jQuery methods to:

See your handout or the jQuery docs for list!

JQUERY METHODS — EVENTS!

CREATE EVENT LISTENERS

We can use the `on()` method to handle all events in jQuery.

JQUERY METHODS — EVENTS!

CREATE EVENT LISTENERS

selector

```
$('li').on('click', function() {
  // your code here
});
```

JQUERY METHODS — EVENTS!

CREATE EVENT LISTENERS

method for all events

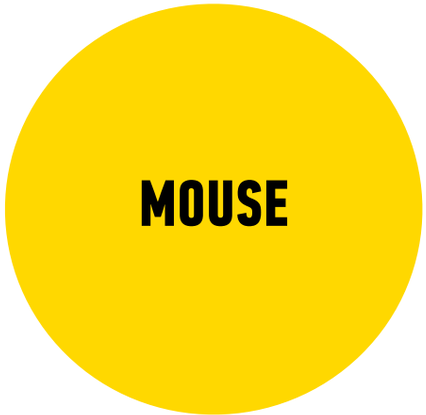
```
$('li').on('click', function() {
  // your code here
});
```

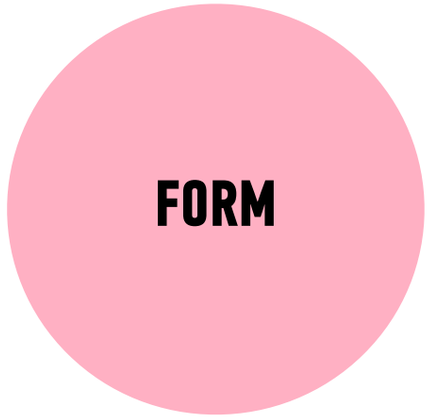
JQUERY METHODS — EVENTS!

CREATE EVENT LISTENERS

type of event

```
$('li').on('click', function() {
  // your code here
});
```





click

dblclick

mouseenter

mouseleave

keypress

keydown

keyup

submit

change

focus

blur

resize

scroll

```
$('li').on('eventGoesHere', function() {
  // your code here
});
```

JQUERY METHODS — EVENTS!

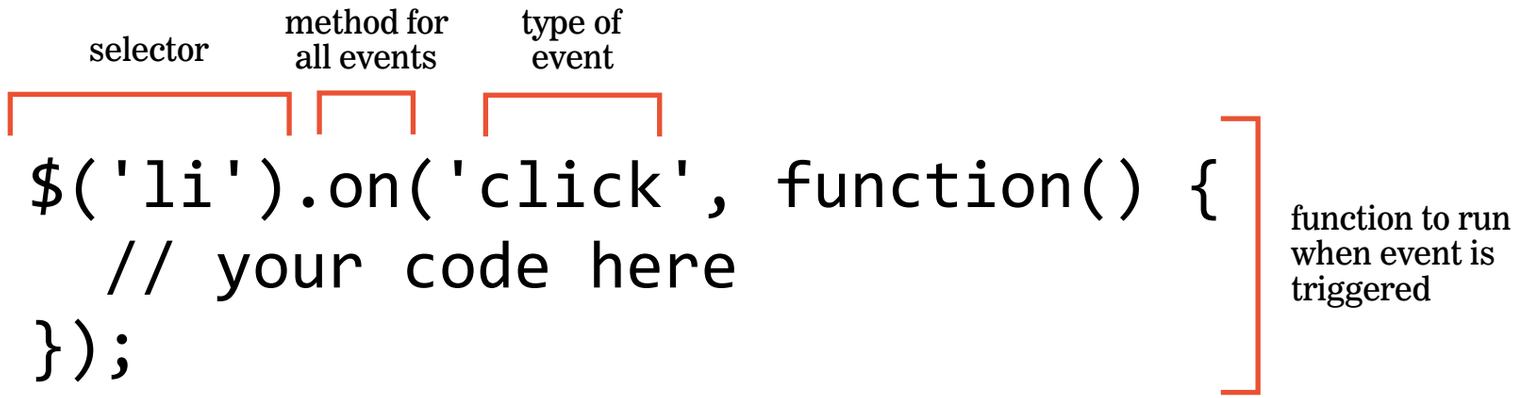
CREATE EVENT LISTENERS

```
$('li').on('click', function() {
  // your code here
});
```

function to run when event is triggered

JQUERY METHODS — EVENTS!

CREATE EVENT LISTENERS



ACTIVITY

KEY OBJECTIVE

- Utilize jQuery to access and manipulate DOM elements.

TYPE OF EXERCISE

- Individual/Partner

AS A CLASS

Until 8:50 Exercise is in 09_starter_jquery > jquery_code_along

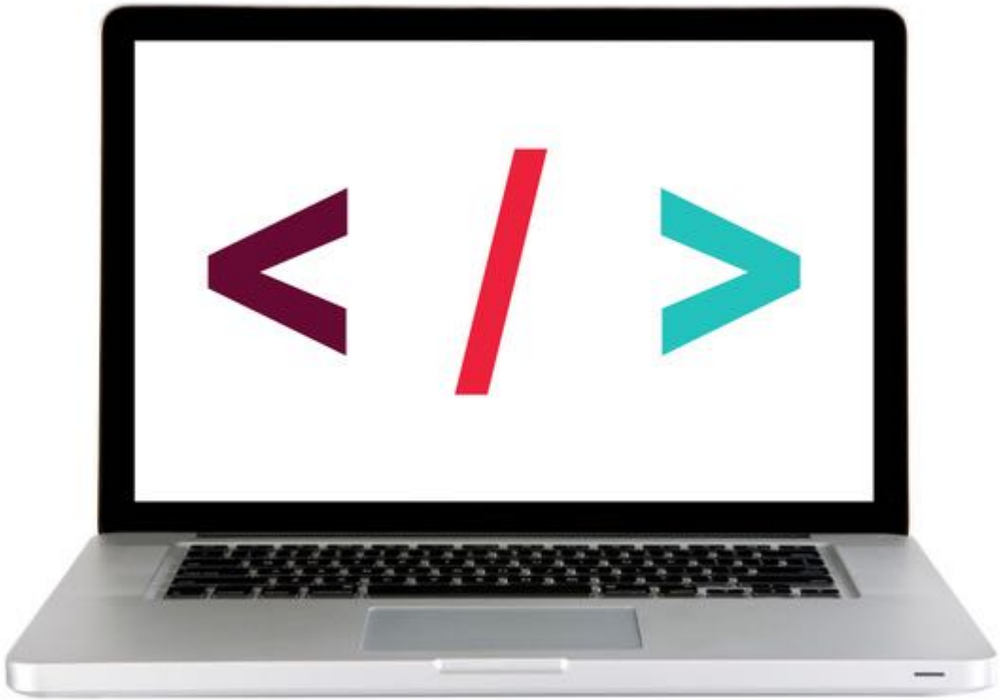
1. Follow the instructions under Part 2 in main.js
2. Use cheat sheet/slides as a guide for syntax

LEARNING OBJECTIVES

- Differentiate between the jQuery library and the JavaScript language, and describe benefits of using each.
- Add jQuery to a project.
- Recognize jQuery syntax.
- Use CSS selectors with the jQuery or $ method to select and update elements in the DOM.
- Write jQuery code to detect and react to events in the DOM.

METHOD CHAINING

ACTIVITY — METHOD CHAINING



METHOD CHAINING!!!

DEBUGGING

DEBUGGING

WHY ISN'T IT WORKING?

DEBUGGING — WHERE TO START

Always start by defining the problem.

THE IMAGE IS NOT MOVING

NONE OF MY CODE WORKS

DEBUGGING — WHERE TO START

This will tell you where to start your hunt.

THE IMAGE IS NOT MOVING

Find the code that makes the image move

NONE OF MY CODE WORKS

** Syntax error, check console*

DEBUGGING

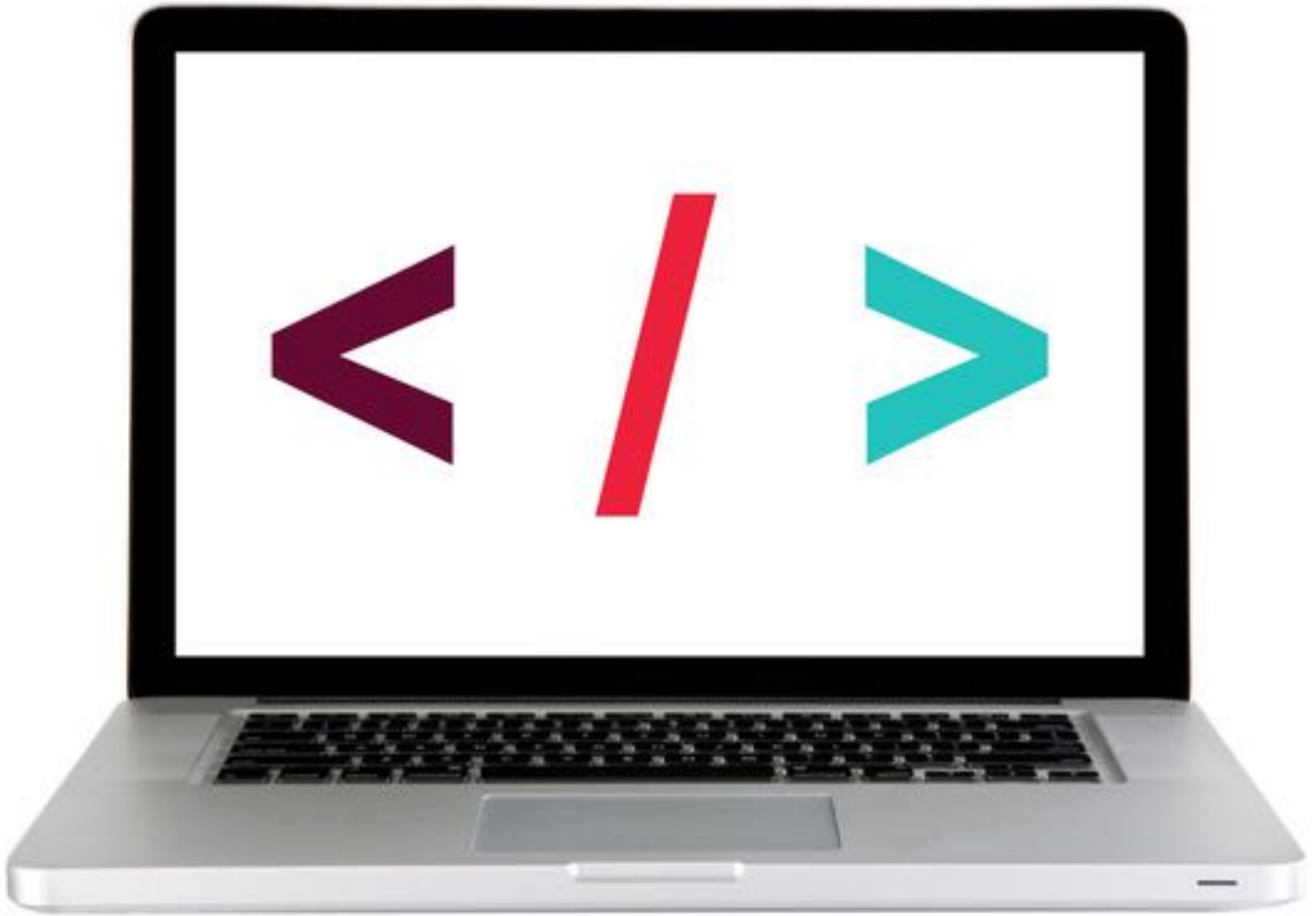
To access debugging console:

PC: CTRL+SHIFT+J
Mac: COMMAND+OPTION+J
Click the error

Check for errors in console

- The location may not be correct but is a good place to start.
- Ex: Unbalanced brackets or parentheses

DEBUGGING — FIND THE BUG



Do some Googling!

- Try Googling it
- Be ready to clearly articulate the problem (Write out what your problem is)

Get help!

If you still can’t find a solution, ask your instructor.

Help me help you!

1. Slack your instructor
2. Be descriptive about the problem.
3. Tell me what you've already done to try to figure it out.
4. Attach a .zip file

JQUERY DOCUMENTATION

JQUERY DOCUMENTATION – IT'S YOUR FRIEND!

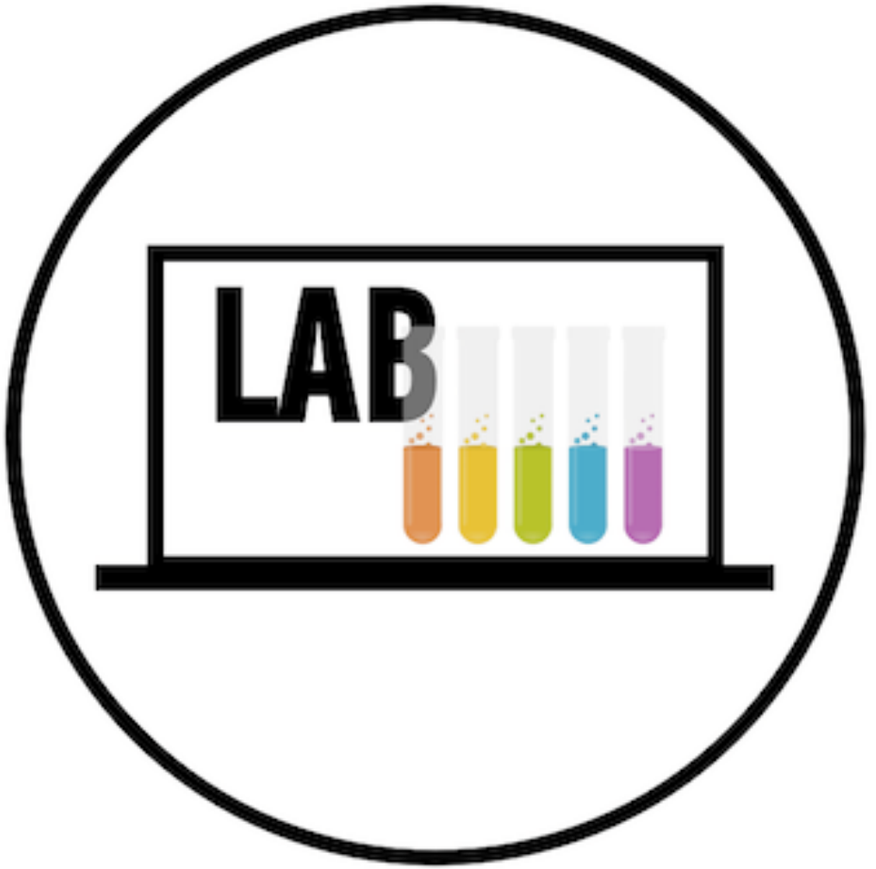
Help! There's too much to learn! I feel overwhelmed!

A good developer is one that can look things up!!!

1. The jQuery Examples page has an example for almost every method!
2. jQuery documentation — Look things up

LAB

LAB



ACTIVITY

KEY OBJECTIVE

- Utilize jQuery tree traversal techniques to access and manipulate DOM elements.

TYPE OF EXERCISE

- Partners/small groups

AS A CLASS

Until 9:20

Lab is in 09_starter_jquery > select_fun

1. Follow the instructions in main.js
2. Use cheat sheet as a guide for syntax and look up any methods you're not familiar with in the jQuery documentation.
3. **Bonus**: Complete part 2 of the lab for more practice (09_starter_jquery > select_fun_part_2)

LEARNING OBJECTIVES

- Differentiate between the jQuery library and the JavaScript language, and describe benefits of using each.
- Add jQuery to a project.
- Recognize jQuery syntax.
- Use jQuery to select and update elements in the DOM.
- Write jQuery code to detect and react to events in the DOM.

WEEKLY OVERVIEW

WEEK 5	Intro to jQuery / jQuery Part 2
WEEK 6	Functions / JS Lab

EXIT TICKETS!