Javascript + jQuery

CS160 Section 2A
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Agenda

HTML + CSS Review (5 min)

Review HTML + CSS concepts

JavaScript Practice (15 min)

Practice coding simple web app components in JS!

jQuery Workshop (10 min)

Practice some basic exercises with jQuery

Intro to JavaScript (15 min)

Building off of HTML + CSS and entering the powerful scripting language of JS

jQuery Overview (5 min)

Brief overview of JQuery and its applications in web development

HTML + CSS Review

HTML

```
<html>

  <body>

    <p>
      Blue paragraph.
    </p>

    <p class='red'>
      Red paragraph.
    </p>

    <p id='unique'>
      Unique paragraph.
    </p>

  </body>

</html>
```

CSS

```
body {
  font-size: 40px;
}
```

Q: How many lines of text will this webpage have?

https://jsfiddle.net/shmothy/v2nfx5kb/9/

HTML

```
<html>

  <body>

    <p>
      Blue paragraph.
    </p>

    <p class='red'>
      Red paragraph.
    </p>

    <p id='unique'>
      Unique paragraph.
    </p>

  </body>

</html>
```

CSS

```
body {
  font-size: 40px;
}

p {
  color: blue;
}
```

Q: How many lines of text will be blue?

HTML

```
<html>

  <body>

    <p>
      Blue paragraph.
    </p>

    <p class='red'>
      Red paragraph.
    </p>

    <p id='unique'>
      Unique paragraph.
    </p>

  </body>

</html>
```

CSS

```
body {
  font-size: 40px;
}

p {
  color: blue;
}

.red {
  color: red;
}
```

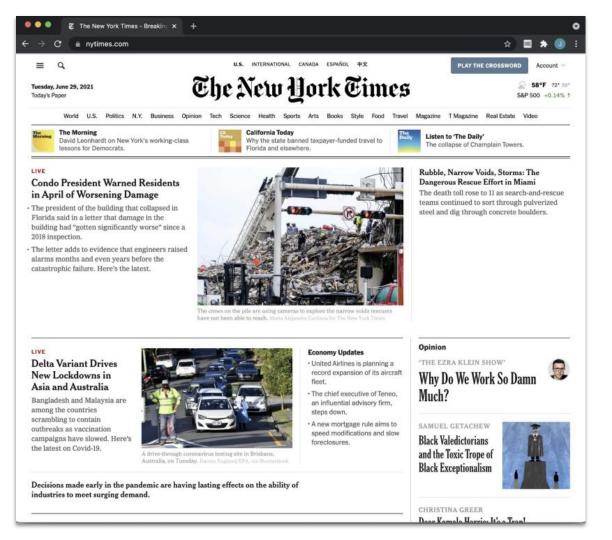**Q:** How many lines of text will be red, and how many will be blue?
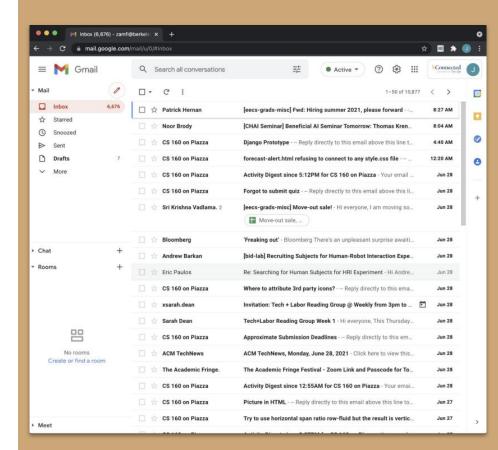
Introducing JavaScript

JavaScript Overview

- Programming language for web pages
- Enables **dynamic** behaviors:
  - interactions
  - animations
  - computations

Static Page

(primarily HTML)

Full Apps
(lots of HTML, lots of JS)

Adding JavaScript to your HTML file

index.html

```html
<html>

  <header>

    <script>
      alert("Hello World!");
    </script>

  </header>

  <body>

    <p>
      Learning JavaScript.
    </p>

  </body>

</html>
```

- **Q:** What is the order in which this page would run?
- **hint:** in the ‹header›

- **A:** Web pages render from top to bottom, so the script runs **before** anything else!

Adding JavaScript to your HTML file

index.html

```html
<html>

  <header>
  </header>

  <body>

    <p>
      Learning JavaScript.
    </p>
    <script>
      alert("Hello World!");
    </script>
  </body>


</html>
```

- **Tip:** If your script **writes** page content, it should be placed at the **bottom** of the ‹body› element.

- **Ref:** Where to put JavaScript in an HTML Document ?

Adding JavaScript to your HTML file

index.html

```html
<html>

  <header>

    <script src='javascript.js'>
    </script>

  </header>

  <body>

    <p>
      Learning JavaScript.
    </p>

  </body>

</html>
```

javascript.js

```javascript
alert('Hello World!');
```

- **Tip:** Can also link to a separate location that contains your JavaScript code

JavaScript Practice

JavaScript Practice

Here's some syntax: https://codepen.io/leerach/pen/ExEYzRo

1. Create a function that prints the name and color values of the exampleObject in the console.

```
var exampleObject = {'name': 'Nate', 'color':'aqua'}
```

Hint:

- How to make a function: https://www.w3schools.com/js/js_functions.asp

jQuery

JQuery

Overview	Benefits	Advantages
JavaScript library that adds interactivity to web pages	Can be **simpler, cleaner,** or better suited to your programming style than plain JS	- Pre-written JS allows for easier, faster development (similar to Bootstrap & HTML) - More with less code! - Ex: React, D3 charts, etc.

Drawbacks to JS Libraries

(are there even any?)

- can probably find a way using vanilla JS
- don't make users download more than necessary
- **You might not even need jQuery**

Adding jQuery

index.html	jquery.js

```html
<html>

  <header>

    <script
      src="https://code.jquery.com/
      jquery-3.4.1.min.js" integrity="CS
      XorXvZ" crossorigin="anonymous">
    </script>
    <script src='jquery.js'></script>

  </header>

  <body>

    <p>
      Learning jQuery.
    </p>

  </body>
</html>
```

```javascript
$(document).ready(() => {
  $('p').hide();
});
```

- Imports the jQuery library

Adding jQuery

index.html

```html
<html>

  <header>

    <script
      src="https://code.jquery.com/
      jquery-3.4.1.min.js" integrity="CS
      XorXvZ" crossorigin="anonymous">
    </script>
    <script src='jquery.js'></script>

  </header>

  <body>

    <p>
      Learning jQuery.
    </p>

  </body>
</html>
```

jquery.js

```javascript
$(document).ready(() => {
  $('p').hide();
});
```

- **Q:** What does this jQuery do?

- **A:** Hides the 'Learning jQuery' text

jQuery Basic Structure

1. Specify the HTML Tag:

```
$('selector').on('event', () => {
    // code to execute
});


$('img').on('event', () => {
    // code to execute
});
```

jQuery Basic Structure

2. Which Event to listen for:

```javascript
$('selector').on('event', () => {
    // code to execute
});


$('img').on('click', () => {
    // code to execute
});
```

```
var img = document.getElementById('jumpinjoe');
var butt = document.getElementById('mycoolbutton');
butt.onclick = function() {toggleImage()};
function toggleImage() {

    if (img.style.visibility == 'hidden') {
      img.style.visibility = 'visible';
    }
    else {
      img.style.visibility = 'hidden';
    }
}
```

```
$('#mycoolbutton').on("click", function(e) {
    $('#jumpinjoe').toggle();
});
```

Vanilla JS

JavaScript + jQuery

jQuery Exercise

1. https://codepen.io/leerach/pen/ExEYzRo

2. Change the color of the button to light blue

3. Make an alert appear on the page that says "Hello World!"

```
/* ----------- Start of Exercise 2 -------- */

// This function will be referenced by a button to
change its color when button is clicked
var toggleBackground = function() {
  $('body').toggleClass('bg-lightgreen')
}

  /* JQuery Exercise: Now let's change the button
color with jQuery! */

// TODO: YOUR CODE HERE

/* Extra Exercise: Add an alert that says "Hello
World" */

// TODO: YOUR CODE HERE
```

Thank you for coming!

Any Questions?