### Unit 8 Seminar

Learning Standards

* **Standard**: Lay out content using the grid system in Bootstrap
  + [Lay out](https://www.codecademy.com/courses/freelance1-u7/lessons/bootstrap-intro/exercises/bootstrap-grid-system-i)
  + [Responsive layout](https://www.codecademy.com/courses/freelance1-u7/lessons/bootstrap-intro/exercises/bootstrap-grid-system-ii)
* **Standard**: Size and convert assets to optimize file size
* **Standard**: introduction to JS and jQuery and relationship between HTML, CSS, and JS

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* **Lesson overview**
  + not meant to be comprehensive, but curiosity is encouraged—ask whatever questions you have
  + relationship between JS, jQuery, and HTML
* **Bootstrap Library**
  + What is a library?
    - DRY principle (don’t repeat yourself)
    - College libraries mean that you don’t have to do firsthand research that someone else has done—if you want to know the speed of the Earth as it orbits the sun, it’s much easier to go pick up a reference manual than to calculate it by hand
  + The Grid System
    - Container > row > column
    - Twelve columns, unlimited rows
      * Draw image of grid to illustrate
    - xs, md, lg
    - Livecode grid system
      * Different browser widths in development tools

**Q&A session**

* File optimization
  + Use CDNs (content delivery networks)
  + Use minified versions of libraries
  + Images
    - Photographs are usually biggest bottlenecks
      * High JPEG quality can kill <https://upload.wikimedia.org/wikipedia/commons/f/f3/Continuously_varied_JPEG_compression_for_an_abdominal_CT_scan_-_1471-2342-12-24-S1.ogv>
    - <https://tinypng.com/>
    - If time: srcset attribute
  + Reduce total requests
    - Network tab
    - async/defer (http://www.growingwiththeweb.com/2014/02/async-vs-defer-attributes.html)
* JavaScript
  + JavaScript, not to be confused with [Java](http://en.wikipedia.org/wiki/Java_(programming_language)), was created in 10 days in May 1995 by [Brendan Eich](http://en.wikipedia.org/wiki/Brendan_Eich), then working at [Netscape](http://en.wikipedia.org/wiki/Netscape) and now of [Mozilla](http://www.mozilla.com/). JavaScript was not always known as JavaScript: the original name was Mocha, a name chosen by [Marc Andreessen](http://en.wikipedia.org/wiki/Marc_Andreessen), founder of Netscape. In September of 1995 the name was changed to LiveScript, then in December of the same year, upon receiving a trademark license from Sun, the name JavaScript was adopted. This was somewhat of a marketing move at the time, with Java being very popular around then.
  + What is a programming language?
    - Not *quite* like learning a foreign language
    - More like learning symbols in formal logic, mathematics, or chemistry
    - Not HTML or CSS
  + What is JavaScript?
    - **Not** Java
    - Modify HTML and CSS on the fly
    - Interactive web pages
    - Fun examples
      * <https://byu-odh.github.io/apeworm/>
      * <https://getmosh.io/>
      * <https://earth.google.com/web/>
        + Click die for “I’m Feeling Lucky”
      * Google Drive, Office Online, etc.
  + Learn by doing: play in the console
* jQuery
  + jQuery is a library for JavaScript
  + Not a separate programming language
  + Purpose
    - Provide universal support
    - Reduce verbosity
    - Livecode examples
  + Impact
    - Ubiquity
      * Ask students to throw out random websites
      * jQuery().jquery
  + Livecode:
    - Create image with class img-circle (bootstrap)
    - Add a slider (jQuery UI)
    - Change hue of image when sliding (jQuery)
    - Clone image (jQuery) on button click (bootstrap)
* Q&A
* Where to go from here? - more practice on Codecademy (try the other programming languages), keep playing in the console, etc