JavaScript

For Web Interaction and Programming

Progressive enhancement

- Structure
  - Technology: HTML
  - Focus on content and the concept of the document
- Presentation
  - Technology: CSS
  - Focus on appearance and layout
- Behavior
  - JavaScript
  - Focus on interaction and usability

What is JavaScript?

- JavaScript is: an object-oriented computer programming language commonly used to create interactive effects within web browsers

- JavaScript is a case-sensitive "scripting" language (...more about that later)

- Originally developed by Netscape
  - JavaScript is a "dialect" of its parent language: ECMAScript*
  - The project was originally called Mocha, then renamed to LiveScript

- Netscape & Sun Microsystems Collaboration
  - Renamed to JavaScript when Netscape and Sun did a license agreement
  - The idea at the time was to leverage the popularity of the Java programming language and make JavaScript complimentary to it somehow

- JavaScript is NOT Java

- JavaScript is now available built-in to all major web browsers

* European Computer Manufacturers Association (ECMA)

More about JavaScript

- JavaScript can be used for BOTH:
  - Front-end Web development
  - Web applications (programming)

- JavaScript is interpreted by the client (the web browser), not the server
  - The raw JavaScript code is downloaded to the client along with the HTML, CSS and images
  - The JavaScript runs on the client
  - JavaScript is limited by the capabilities of the client
    - No databases
    - No email

Scripting vs. Programming

Languages like JavaScript and PHP are "scripting" languages.

Scripting languages

- A series of steps (like a "script")
- Limited capabilities; needs to run other software on the computer (send "calls") to do the *real* work
- Optimized for ease of setup and compatibility

Programming languages

- For creating software
- Capable of doing just about anything on the computer where it's installed
- Optimized for speed and efficiency

…however, scripting languages can also be used as full programming languages

Script Languages (front vs. back -end)

Front-end

- These "programs" download to the client (the web browser) and run on the local computer/device

- JavaScript

- Advanced CSS

Back-end

- These programs run on the server, initiated by requests from the client

- PHP

- ASP

- .NET

  Other programs running on the server include:
  - Databases
  - Email

Software libraries

- Software library: a collection of code, written in the same programming language where it is used, that has documented instructions so it can be used by programmers who won't have to (re)write it if they want to do the same things.

- Example: jQuery (www.jquery.com)
    - http://en.wikipedia.org/wiki/JQuery
    - How popular?
      http://royal.pingdom.com/2012/06/20/jquery-numbers/
    - How cool?
      http://en.wikipedia.org/wiki/John_Resig