Lecture 2: HTML

HTML5, CSS, JS

HTML: This week overview

What is HTML?

- The 'HTML' part contains all the content, organized into a logical structure. This is the part that an author might be most concerned with: the words, chapter headings, figures, diagrams, etc. While there have been numerous versions of HTML since its inception, our focus in this course is the most recent version, HTML5. HTML5 was developed to provide more powerful and flexible ways for developers to create dynamic Web pages.

- Atom Text Editor
- Hello World HTML page
- HTML Tags
- Semantic HTML

HTML & CSS: Design and build websites

- CH 1 – STRUCTURE
- http://www.htmlandcssbook.com/code-samples/chapter-01

```
<!DOCTYPE html>
<html>
 <head>
   <title>View the Source of This Page<title>
 </head>
 <body>
   <h1>How to View the Source of This Page<h1>
   <p>If you go to your browser's View menu, you will see an option that allows you to see the source code behind a web page.</p>
   <p>When the web was first taking off this was a very popular way for people to learn how web pages had been built.</p>
   <p>Today, people still often view the source of pages to learn how a web page has been built.</p>
 <body>
<html>
```

HTML & CSS: Design and build websites

- CH 2 – TEXT
- http://www.htmlandcssbook.com/code-samples/chapter-02

```
<!DOCTYPE html>
<html>
 <head>
   <title>View the Source of This Page<title>
 </head>
  <body>
            <h1>This is a main heading.</h1>
            <h2>This is a level 2 heading</h2>
            <h3>This is a level 3 heading</h3>
            <h4>This is a level 4 heading</h4>
            <h5>This is a level 5 heading</h5>
            <h6>This is a level 6 heading</h6>
  </body>
<html>
```

HTML & CSS: Design and build websites

CH 2 – TEXT: http://www.htmlandcssbook.com/code-samples/chapter-02

```
<!DOCTYPE html>
<html>
 <head>
   <title>View the Source of This Page<title>
 </head>
   <body>
            <h1>This is a <i>main</i> heading.</h1>
            <h2>This is a level 2 heading</h2>
            <hr/> (I am a horizontal rule.) ----------------------------------------
            <h3>This is a level 3 heading</h3>
            <p>This is a  <b>BOLD</b> paragraph</p>

            <blockquote cite="http://en.wikipedia.org/wiki/Winnie-the-Pooh">
            <p>Did you ever stop to think, and forget to start again?</p>
            </blockquote>

<p>As A.A. Milne said, <q>Some people talk to animals. Not many listen though. That's the problem.</q></p>
   </body>
<html>
```

HTML & CSS: Design and build websites

CH 3 – LISTS: http://www.htmlandcssbook.com/code-samples/chapter-03

```
<!DOCTYPE html>
<html>
 <head>
   <title>View the Source of This Page<title>
 </head>
 <body>
        <ol>
              <li>Chop potatoes into quarters</li>
              <li>Simmer in salted water for 15-20 minutes until tender</li>
              <li>Heat milk, butter and nutmeg</li>
              <li>Drain potatoes and mash</li>
              <li>Mix in the milk mixture</li>
        </ol>
</body>
<html>
```

```
<ul>
    <li>1kg King Edward potatoes</li>
    <li>100ml milk</li>
    <li>50g salted butter</li>
    <li>Freshly grated nutmeg</li>
    <li>Salt and pepper to taste</li>
</ul>
```

```
<ul>
    <li>Mousses</li>
    <li>Pastries
      <ul>
          <li>Croissant</li>
          <li>Mille-feuille</li>
          <li>Palmier</li>
          <li>Profiterole</li>
      </ul>
</li>
<li>Tarts</li>
</ul>
```

HTML & CSS: Online Code Editors & Validators

ONLINE CODE EDITORS

- CodePen (https://codepen.io)
- JS Bin (https://jsbin.com/)
- JSfiddle (https://jsfiddle.net)

W3C Validators check markup validity

- W3C HTML Validator (https://validator.w3.org)
- W3C HTML5 Validator (https://validator.w3.org/nu/)
- W3C CSS Validator (https://jigsaw.w3.org/css-validator/)

HTML & CSS: CodePen Video

HTML & CSS: JS Bin Video

HTML: Last Week Review

- Paper Prototypes & Wireframes: Keep Working on your paper prototypes and wireframes to absolute perfection so we are NOT designing and coding at the same time!

- **Upload your final paper prototype design AND Sketch wireframes to CANVAS**: HOME, ABOUT, DISCOGRAPHY. Due next WEEK 3 for grading.

- HTML: Hyper Text Markup Language
  - Think of as a Skeleton or Body
  - Holds everything together

- CSS: Cascading Style Sheets
  - Think of as Clothes
  - Styling of website or rather **the presentation**
  - **Style classes cascade through every html page to simultaneously change the style of elements.**

How the Internet Works

VIDEO LINK

HTML: What is it?

- Hyper Text Markup Language
- **NOT** a programming language
- Foundation for building websites
- The driver of content **NOT** presentation
  - HTML doesn't define how things look, that's for CSS
- Meant to be accessible
- Web Browsers are designed to render HTML for users
- Files must end in .html
- **"index.html"** is the root or homepage
- HTML is a text document containing "markup".
  - Markup describes the meaning
  - Meaning is the Semantics
- HTML is a requirement
  - New front end frameworks like Angular and ReactJS require HTML but in different ways
    - Angular Example
    - React Example
    - Ruby on Rails Example

HTML: Web Pages

A web page consists of 3 primary components:

1. **Text Content** - bare text that tells the user what your page or site is about
2. **References to other files** - items such as images, audio, video files or other HTML files
    1. Assets - JavaScripts or CSS files
3. **Markup** - HTML Elements

These files are all saved as text so they can be universally read by browsers

There is other information contained in the files not viewable by users

- Content in the <head>...</head>
- The <head> contains character encoding usually UTF-8 and other information for the browser and search engines

PUPPIES!!!!

History of HTML

HTML: History

There is a great YouTube resource called DevTips.
There's a multi part series that was done by DevTips as an overview to HTML. Watch the complete list for some great insight.

DEVTIPS HTML5 Basics Playlist:

1. History of HTML
2. Philosophy of HTML5
3. The DOM
4. Tags
5. Display Types
6. HTML5 Tags

HTML: A brief history of

VIDEO LINK

Atom Text Editor

HTML: What is a text editor?

A text editor (TE) is like a word processor (WP) but vary in important ways

- TEs are used for writing and editing code files
- WPs are designed to format text for presentations
- TEs are plain text
- WPs have hidden code to run them

HTML: Welcome to Atom!

VIDEO LINK

HTML: OPEN ATOM!

OPEN ATOM!

Fun Facts:

- Released in 2014
- Free and Open Source
- Supports
  - Plugins
  - Themes
- Supports most major languages
- Very Extensible and hacker friendly
  - Uses a lot of the same technology used in building modern applications like HTML, CSS, and JavaScript

HTML: Why does my Atom look different?

Answer: I use a lot of Plugins and Themes

Helpful Atom Packages/Themes can be found in the GitHub Repo

HTML: Atom Themes & Plugins

VIDEO LINK

Create our first HTML Page

HTML: Document

HTML documents have a few HTML tags that are required

- <!DOCTYPE>
- <html>
- <head>
- <body>

Basic HTML document

```
<!DOCTYPE html>
<html lang="en">
 <head>
 ...
 </head>
 <body>
 ...
 </body>
</html>
```

The DOCTYPE declaration defines the document type to be HTML

Defines the HTML document, language of document is English

Provides information about the document

Title of document, Styles, Meta Information, etc.

Visible user content

HTML: Hello World

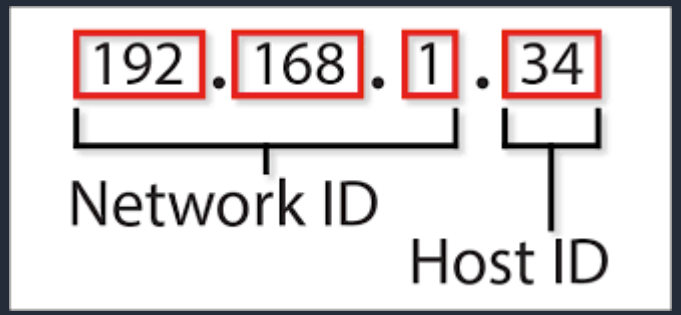
1. Open Atom in New Window
2. Type out an HTML document
3. Save as index.html
4. Open the index.html file by double clicking
5. Notice the URL when you double click the file “file:///Users/name/location/index.html”
    a. This means your file is being served on the local file system
6. Make an edit to your file
7. Save your file
8. Reload your browser

What we’ve done is create our first HTML file. Opened it in the browser, made a change and got to see that change take place.

HTML: Hello World using a Server

The way the internet works is that a Client will make REQUESTS to a Server and the Server will send back RESPONSES.

Servers don't have to be somewhere else we can actually do it on our own computer for a better development experience.



1. Click Atom > Preferences,
2. Click Install in Settings tab
    a. Make sure "Packages" is highlighted
3. Search for "atom-live-server"
4. Click + INSTALL
5. Go back to your index.html tab
6. Click Packages > atom-live-server
7. This will start a server on 127.0.0.1:3000
8. Make an edit to your index.html & save
9. Your browser should autoreload your changes


Dr.
Phil

HTML: Hello World using a Server Breakdown

Ok so you may be asking yourself, what is going on? Simply put the package we are using is running some JavaScript behind the scenes that when we make changes to the file it will tell the browser to refresh itself.

This is one of the many time saving tools available while developing. The other added benefit is that we are able to test our code in a real browser.

For fun copy the URL or type in 127.0.0.1:3000 into FireFox and or Safari and you should see the same page. Now you can test your code in different browser all in real time if you wanted.

Fun fact 127.0.0.1:3000 is the same as typing localhost:3000

HTML: Help Resources

- StackOverflow - HTML
- W3Schools
- HTML Cheatsheet

HTML: What is a tag?

An HTML tag is anything that resembles <tag>...</tag>

<h1>Hello World</h1>

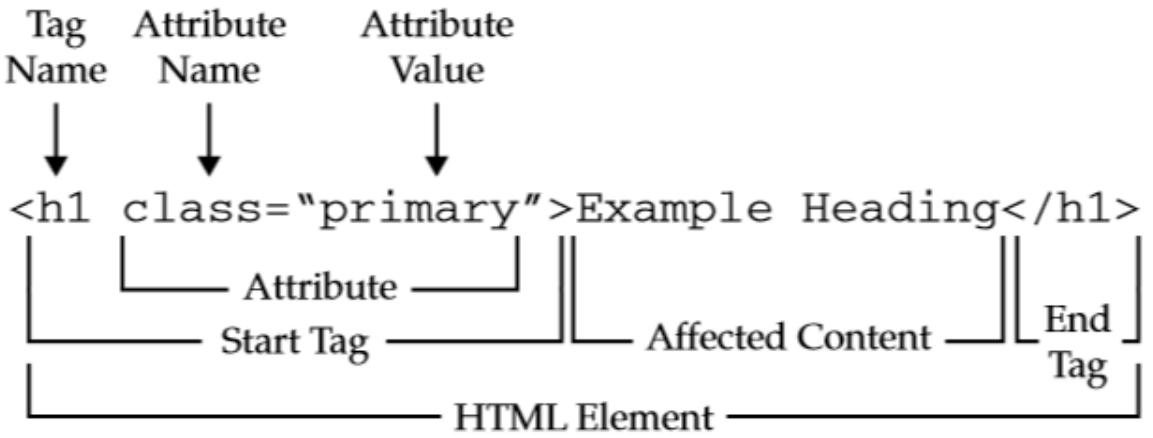
What opens must close unless it is a special **Self Closing Tag:**

 or

- Tags are surrounded by angle brackets
- Come in pairs, what you open you must close
- Some tags are self closing

HTML: Tag / Element Breakdown

A graphical overview of the HTML markup syntax shown so far is presented here:



HTML: Experiment with Tags

Let's together start writing some tags and watch what happens in the browser

- Headers: h1 - h6
- Paragraph: p
- Span: span
- Anchor: a
- Image: img
- Unordered Lists: ul
- Ordered Lists: ol

Full list of Inline and Block Elements

You will notice that some elements render on new lines and other elements render inline. This concept is **Inline vs Block Level Elements**

Inline Elements:

- Do not start on a new line
- Only as wide as needed

Block Elements

- Start on new line
- Full width

HTML: Tag Attributes

<tag attributename=”attributevalue”>...</tag>

Link to Google

- Tags can have one or more attributes attached to them
- Some tags have specific attributes
- Attributes are always used with the start of a tag
- Are show in Key Value pairs key=”value”

HTML: Week 2 Homework

- Homework
  - Read: Ch 3,4, & 5
  - Wireframes
    - Media
    - Merch
    - Tour Dates
  - Practice Coding
    - Make an index.html file
    - Practice tags
    - Use attributes on your tags
    - Lists, Paragraphs, Headers
    - Test out Atom Plugins and Themes