Lesson 2 - CSS Basics

FEWD

Learning Objective

- Review html semantic tags

- Describe DOM and draw simple DOM Tree

- Predict image paths and apply relative paths to <img> and <a> tags

- Apply and explain CSS 'cascade': Importance, specificity and inheritance.

html tags

<h1></h1>

<h2></h2> …through 6

<p></p>

<a>

 and

<link> or <link />

standalone ->
 <img>

What do tags do?
start and end an html element
add structural meaning to the document

elements can contain other elements
standalone elements cannot

Most elements start at the left create a box that goes all the way to the right of the page.

img, href

Semantic Tags

<form></form>

<table></table>

<article></article>

<aside></aside>

<header></header>

<footer></footer>

<nav></nav>

<section></section>

All of these elements can contain other elements

<nav> - signifies a set of navigation links

<footer> tag defines a footer for a document or section

<header> - denotes a header for an article

<article>- holds independent, self-contained content…blog post, news story…etc

<aside> <aside> content could be placed as a sidebar in an article

<section> tag defines sections in a document

Non-semantic elements

<div></div>

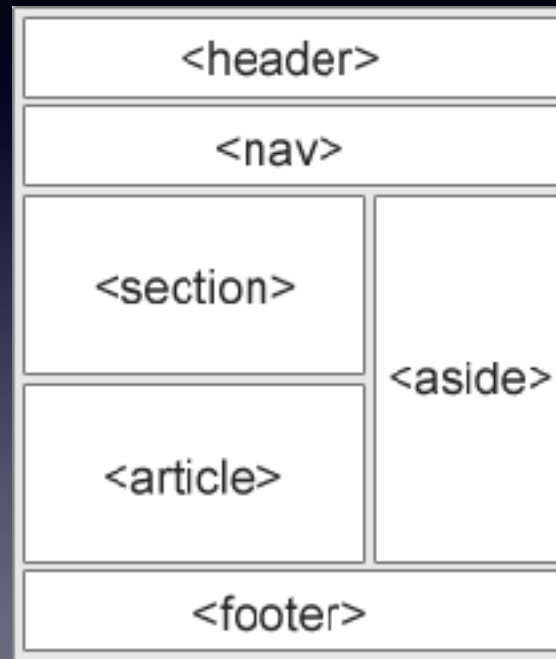
These tags a generic containers.

What types of boxes will these two elements create?

Codealong

- Exercise 01 in starter code

- Let's go to half mast and follow along

- Let's add some semantic structure to our document

- We will be talking about file paths and image paths

25 minutes

HTML semantic structure

html adding some structure to our document based on the semantic meaning.

Codealong

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25 minutes

File paths and images

Can link to images locally or through a url

- locally => file system

- url => http://sserver/pathtoimage

Does anyone use the terminal a lot on a mac?

Let's look at a file on your system and get properties to see how the path works?
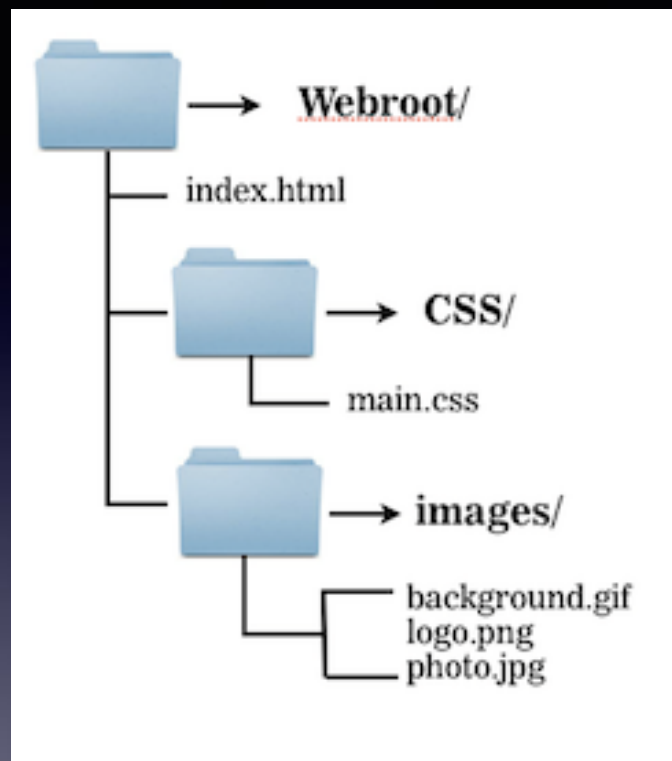
Images

`<img src="img/imageName.jpg" alt="alternative text">`

- The img tag requires a src attribute, which tells the browser where to find the image
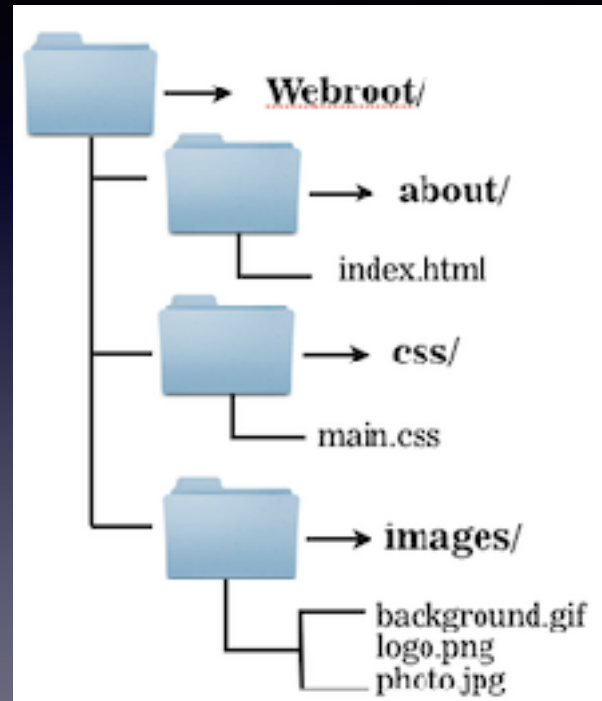
This is a relative file path. The file is relative to the current file accessing it.

How would you write the img src from the index.html file?

logo.jpg is located in the same folder as the current page

<img src="images/logo.png">

Relative Path

nested further
from index.html how do we access the logo.png

<img src="../images/logo.png">

Alternative is using the full url

- <img src="https://ga-core.s3.amazonaws.com/production/uploads/program/default_image/397/thumb_User-Experience-Sketching.jpg">

Used when assets are stored on an asset server

Note: For linking to images, make sure that you have permission to use the image in this way. Even then, it is often better to host a copy of the same image, rather than link to another server, because it reduces dependency.

Usually companies will own an asset server and cache them so that it loads really quickly.

Image alt attribute

- `<img src="puppy.jpg" alt="My cute puppy">`

using example 1 -> A piece of text to be used in lieu of the image when the image is unavailable

Using alt attributes has the added benefit of giving search engines more linguistic context about the image as it is used on your page.

Reasons an image may not load:

There was a connection error, the browser didn't download the image.

The file was not found, perhaps because the image got moved elsewhere and the page wasn't updated yet to reflect the change.

The user is running a text-based browser such as an older phone with a WAP-style browser, or a non-graphical browser like lynx.

The user is using a screen reader because she has low vision, which will read the alt text aloud or present it through a braille reader.

Image Formats

- png - supports transparency and semi-transparency, great for logos, icons, and repeating background tiles. almost always preferable to a gif

- gif - typically a png is used instead. smaller file

- jpg - typically used for photos

- svg - scalable vector graphics

Note: supports transparency and semi-transparency, great for logos, icons, and repeating background tiles. almost always preferable to a gif, unless semi-transparency is not needed, and the gif format is significantly smaller.

Let's add some **a** tags

Href links

- Follows the same rules as image paths

- If we want to link to google how would we write an href?

- If we want to link to another file on our site, how do we do that?

Let's add links to our exercise 01

Href Links

- links

- \First item\

- \Link Text\

- What does the target blank do?

Tag: \<a>\
Href attribute: "http://link.com"
Title attribute: "link"
Text that becomes the link

Links can have attributes that tell the link to do different actions like open in a new tab, or launch your e-mail program.

Let's add some style

- Let's add some style to our page

Css Location possibilities

- inline

- in the head

- in a separate file (best)

Css best practice

Its **best practice to put CSS in its own file and link** to it from the <head>.

 <link rel="stylesheet" href="style.css">

The link tag needs two attributes: rel="stylesheet" and an href attribute.

The href attribute value works very similarly to linking to an image, or to another page.

Why might we want to link to a separate CSS file?

Discuss as a class

CSS applies to html in classes

Email is the exception where style is embedded

Css Breakdown

```css
p {
    color: red;
    font-weight: bold;
}

selector{
    property: value;
    property: value;
    property: value;
}
```

The whole thing is called a rule.

What is this one doing?
The p is called a selector, and it's followed by a set of declarations in a declaration block.

The selector, p in this case, specifies what parts of the HTML document should be styled by the declaration. This selector will style **all p** elements on the page.

```css
.warning {
  color: red;
}
```
```html
<p class="warning">Run away!</p>
```

Every declaration is a property followed by a value, separated by a colon, ending in a semicolon.

Select all elements for style

html…

<p>lorem ipsum pizza</p>

<p>lorem star trek 2</p>

css…

p{

  property: value;

}

Select all paragraph elements in our html document(s)

Select all paragraph elements in our document(s)

Select elements single or similar elements

html…

<h1 id="pizza_info">lorem ipsum pizza</h1>

<p class="sci-fi">lorem star trek 2</p>

css…

```
#pizza_info{
  property: value;
}
.sci-fi{
  property: value;
}
```

Let's practice this in exercise 1.

Id's and Classes

ID -- Should only apply to one element on a webpage. I.E. A webpage only has one footer.

The "#" is how you tell CSS "this is an id."

Class -- Lots of elements can have the same class. I.E. There can be many warning on one webpage.

The "." is how you tell CSS "this is a class name."
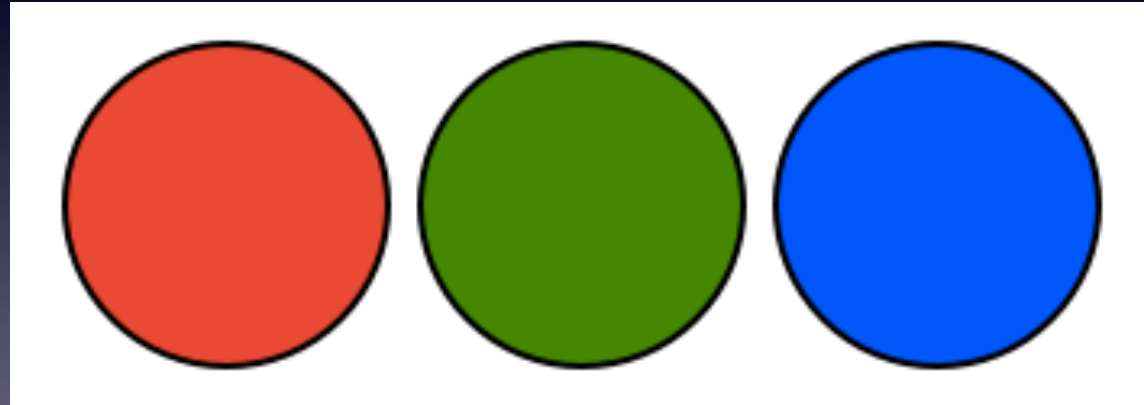
Example in codepen

class and id selector practice

When to use.

Naming.

descriptive flag that is used to style….like ".warning"

if the element is a generic element like a div and it's used in a specific way.

Let's add some colors

Colors can be specified in CSS in a variety of ways:
keyword (black, blue, orange, red)
hex codes
rgb
hsl
rgba
hsla

Hex codes

#FF0000 (full red, no green, no blue)

#00FF00 (no red, full green, no blue)

#0000FF (no red, no green, full blue)

"Hex" values are so-called because they use hexadecimal, or base-16, to describe the color values for red, green, and blue. Each of the 3 color values is expressed by two hexadecimal digits, from 00 (no color) to FF (full color), and are written in the order red, green, then blue, after an initial # sign.

Hex values can be abbreviated to only 3 digits if each digits is doubled. So #FFFFFF (white) can be expressed more succinctly as #FFF, and #000000 (black) can be expressed as #000. #FA6198, however, cannot be abbreviated without altering the color.

RGB color values

rgb(0,0,0)

The first value is red, the second green, the third blue.

Each value can range from 0 to 255, which expresses the same number of color steps as 00 to FF in base-16.

FF in base-16 is equivalent to 255 in base-10.

In RGB, rgb(0,0,0) is black, rgb(255,255,255) is white, rgb(255,0,0) is red, etc.

White-space is allowed inside the parentheses, so rgb(255, 0, 0) will do just as well.

Rgba Colors

RGBa works identically to RGB, expect that it takes a 4th value called the "alpha".

This is a value between 0 and 1 which will be used to determine a color's opacity on the page,

0 is completely transparent, and 1 being solid. 0.5 or .5 is 50% opacity.

Thus, rgba(0,0,0,.25) is black at 25% opacity and rgba(255, 255, 255, 0.8) is white at 80% opacity.

The alpha value can be in decimal form but cannot use a percentage. When a decimal is used, the leading zero is optional.

Most properties are fairly self-explanatory

background-color
font-family
font-size
color
width
height

Dom again

draw out the dom in relation to css…to show the cascade

Cascade

- How do you know what styles a browser will apply to HTML elements,

- default(browser)(least weight), user, author(most weight)

- When several rules apply, the one with the greatest weight takes precedence.

- By default, rules in **author** style sheets have more weight than rules in user style sheets. Precedence is reversed, however, for "!important" rules. All user and author rules have more weight than rules in the UA's default style sheet.

Styles can from multiple sources

Author. The author specifies style sheets for a source document according to the conventions of the document language. For instance, in HTML, style sheets may be included in the document or linked externally.

User: The user may be able to specify style information for a particular document. For example, the user may specify a file that contains a style sheet or the user agent may provide an interface that generates a user style sheet (or behaves as if it did).
User agent: Conforming user agents must apply a default style sheet (or behave as if they did). A user agent's default style sheet should present the elements of the document language in ways that satisfy general presentation expectations for the document language (e.g., for visual browsers, the EM element in HTML is presented using an italic font). See A sample style sheet for HTML for a recommended default style sheet for HTML documents.

default(user agent styles) - default colors and font to use if no rules are in

What default styles have we already seen?

Inheritance

- Properties of an elements will be inherited from a parent object

- <body><p></p><div><p></p></div></body>

If you don't style your branches, they will inherit parent styles from structural elements.

Specificity

Example:

body > p { background-color: red; }

p { background-color: black;}

*{ background-color: green}

What color will a p be?
Red.

Each style rule gets a specificity rating. The higher the number, the more important.

Specificity

A, B, C

C - Count of type selectors

B - Count of class and attribute selectors

A - Count of id selectors

* /* a=0 b=0 c=0 -> specificity = 0 */

li /* a=0, b=0, c=1 -> specificity -> 1 */

ul li /* a=0, b=0 c=2 -> specificity -> 2 */

li.red /* a=0, b=1, c=1 -> specificity -> 11 */

#content /* a=1, b=0, c=0 -> specificity -> 100 */

Lab Time

60min

Let's get the project started in **github** and the first pages all set

Students create an "About" and a "Portfolio" page

Time for students to apply what they learned. Setup lab time by letting students know how to start the exercise and what is expected of them. Point out: The portfolio page they will continue building should be personalized and will reflect just a portion of the projects they will build throughout the course. Look at this as a time to set goals and get students excited about what they will be building.

Border

- Each element has a border

The borders are generally invisible around each element. Each element looks like a box.

DEMO

Margin

- Space between the box and any adjacent element

DEMO

Padding

- padding pushed the element inward away from the border