

Front-End Web Development

Albert Penticoss
Web Designer, University of Melbourne

Multitasking Damages Your Brain And Career, New Studies Suggest

<http://www.forbes.com/sites/travisbradberry/2014/10/08/multitasking-damages-your-brain-and-career-new-studies-suggest/#2715e4857a0b2c2726312c16>

**Genius is one percent
inspiration, ninety-nine
percent perspiration**

Your'e “aha” moments will come with doing the exercises and experimenting

Team rules

- We are a team, we all need to work together to complete our mission, so lets agree on some team rules:
 - Be on time - Start at 6pm sharp and Finish at 9pm sharp
we have a lot to cover each lesson
 - Phones on silent and put away
 - Laptop lids down during lecture portions
 - Focus on task at hand

Start your engines!

- Connect to wifi
- Open your text editor
- Open GitHub desktop

- If you have already done so, in GitHub desktop commit your lesson one code and sync your repositories.

FEWD - LESSON 2

Image and CSS Basics

What are we going to cover today?

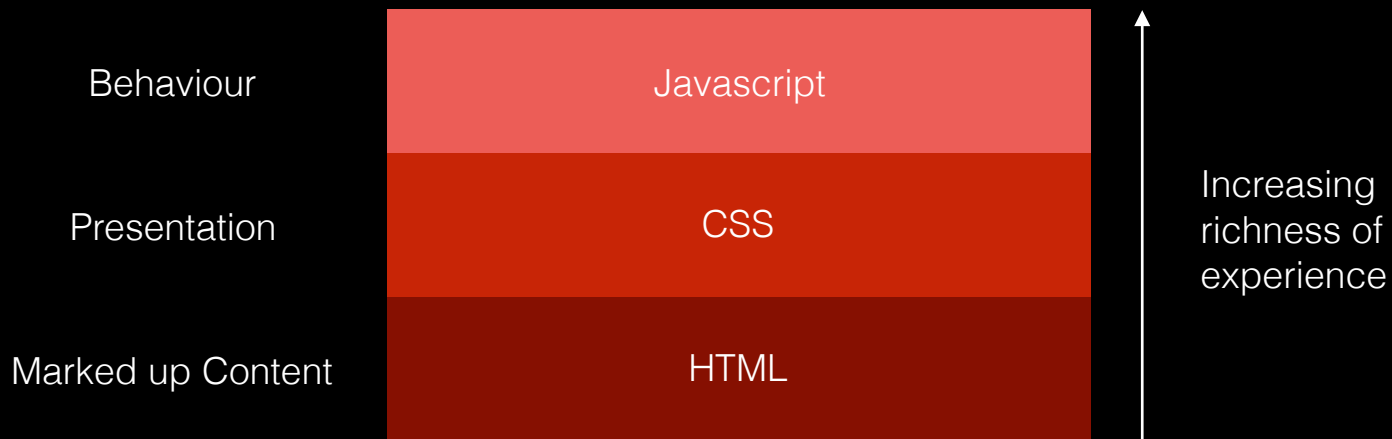
- Lesson 1 Review 20min
- Images (and file paths) 40min
- More CSS
 - CSS breakdown 20min
 - (Break 15min)
 - CSS Colours 30min
- Lab Time 55min

FEWD - LESSON 2

LESSON 1 REVIEW

What is FEWD?

- **Front-end** web development is markup/coding using front-end languages (languages directly interpreted by the browser) to produce the User Interface for a web site or application.
- **Back-end** web development is coding using technologies that run on the web server and send data to the client/browser to be presented by front-end code. This data could be complete HTML pages or data that Javascript can inject into the page.



HTML5 file structure

```
<!doctype html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Title</title>
  </head>
  <body>

  </body>
</html>
```

HTML Syntax

- A HTML element is piece of content on a page defined by markup.

`<h1>I am the main heading</h1>`

`<`

start tag

`>`

end tag

- Some elements are self closing ``, `
`, `<hr/>`
- Elements can have attributes `Google`

`href="http://google.com"`

attribute

HTML Elements

▸ Heading Elements

`<h1>Largest Heading</h1>`

`<h2> ... </h2>`

`<h3> ... </h3>`

`<h4> ...</h4>`

`<h5> ... </h5>`

`<h6>Smallest Heading</h6>`

▸ Text Elements

`<p>This is a paragraph</p>`

`<code>This is some computer code</code>`

▸ Unordered list

` `

▸ Ordered list

` `

▸ List item

`First item Next item`

▸ Hyperlink

`First item`

CSS *Cascading style sheets*

- We use CSS to style our HTML pages.
- CSS can be used to control positioning and visual appearance of HTML elements.
- Cascading refers to how rules are applied, the browser applies its default rules first, then rules from external stylesheets, then rules from styles within the HTML page.

CSS – Syntax

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

A selector selects the elements you want to apply the style to. Property is the name of the CSS property you want to set, value is the value you want to use.

e.g.

h2 { color: red; } will make all your h2's red.

CSS – Linking external Style sheet

In most cases we want to put all our styles in a separate file to our html and link it like so:

```
<!doctype html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Title</title>
    <link href="my.css" type="text/css" rel="stylesheet"/>
  </head>
  <body>

  </body>
</html>
```


Exercise 3 – Cookie Recipe

Let's take a look at the solution for exercise 3

IMAGES (AND FILE PATHS)

The tag



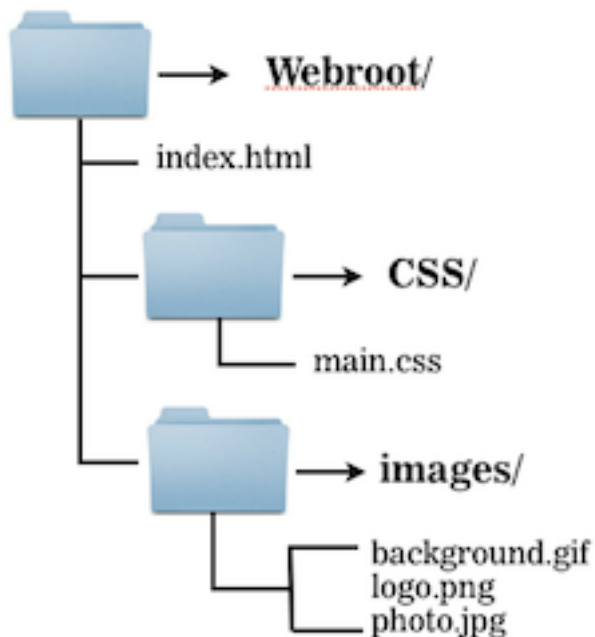
- Images are placed using the tag.

```

```

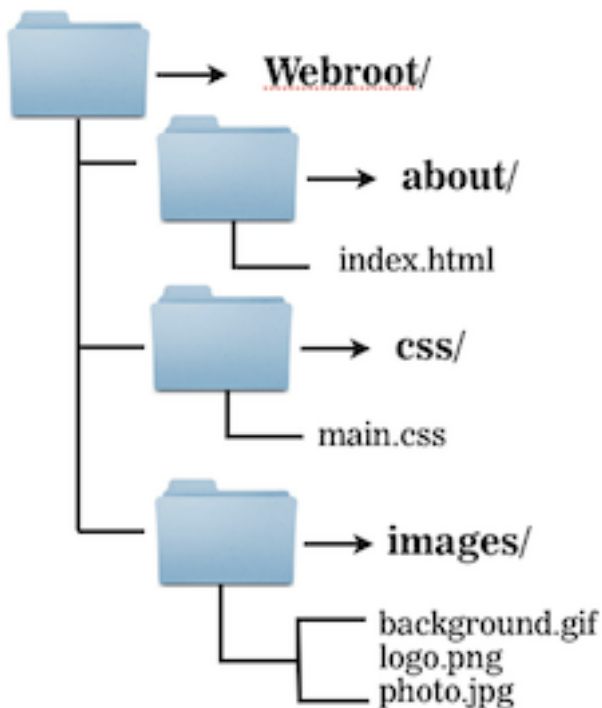
- The img tag requires a **src** attribute, which tells the browser where to find the image, and
- an **alt** attribute which provides a text description of the image

How would you write the src?



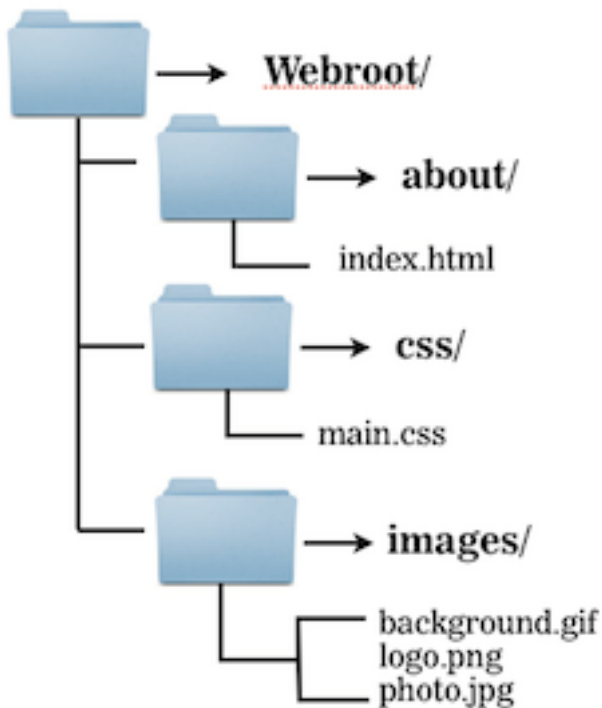
- There are different approaches to specifying an image location:
 - Relative path
 - Absolute path
 - Fully qualified URL

Relative Path



- A relative path is a file path that starts at your html files location
- For this folder structure an `` tag within the `about/index.html` file using a relative path would be:
``
- `..` means to go up one directory, and can be used repeatedly: `../..` would go up two directories.

Absolute Path



- An absolute path is a file path that starts at the webfoot
- For this folder structure an `` tag within the `about/index.html` file using an absolute path would be:
``
- `..` means to go up one directory, and can be used repeatedly: `../..` would go up two directories.

Absolute Path

- The benefit of an absolute path is that this same src path works on any html page, no matter what its location, so the same img tag can be used on both the webroot/index.html page and the webroot/about/index.html page.
- The downside is that the path only works if the project is stored to a proper location for serving.
 - Note: Use <http://anvilformac.com/> or <https://www.apachefriends.org/index.html> for a local development server

Fully qualified URL

```

```

- A fully qualified URL is a complete URL just as you would type into your browser.
- Use these for externally hosted images (don't forget to check license before using someone else's image)

Protocol relative URL

- An alternative to a fully qualified URL is the protocol relative url, same syntax but drop the http:

```

```

- This way you don't have to worry if your page is being served by http or https. See this page for details.

Guess what

- These rules for web paths apply to all other tags that need a path
 - e.g. hyperlink (anchor) tag
- `Link to another page in your site`

alt attribute

``

- A text description of the image or alternative text to be shown if 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.
- alt attributes give screen readers the ability to provide the image content as spoken word or via a braille reader.
- alt attributes are also very important in HTML email because most email programs won't display images unless user chooses to do so.

Image File Formats

There are three main image file formats:

- **.png** - 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.
- **.gif** - Can have basic transparency, typically a png is used instead.
- **.jpeg** - No transparency, can be stored at different compression levels with varying amounts of "lossy-ness", typically the best format for photos. (Try to balance between photo quality and file size.)

EXERCISE - Adding Images

29

KEY OBJECTIVES

Practice image paths

AGENDA

15 mins

1. Download starter code .zip from schoology
2. Extract zip into your Exercises directory
3. Find the images and add them to the index.html file in the webpage directory (without moving the images!)

DELIVERABLE

Page with three images

RESOURCES

Code editor
Starter code

FEWD - LESSON 2

CSS

CSS rules

A CSS rule-set consists of a selector and a declaration block:

The diagram illustrates the components of a CSS rule set. It shows the selector 'p' followed by a declaration block '{ color : black; }'. Brackets are used to label the parts: a bracket above 'p' is labeled 'selector'; a bracket above 'color' is labeled 'property'; a bracket above 'black' is labeled 'value'; and a large bracket below the entire '{ color : black; }' block is labeled 'declaration'.

```
selector      property      value
  └──┬────────┬────────┬────────┘
    { color : black; }
```

declaration

CSS Break Down

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

This whole thing is called a rule-set.

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 Break Down

The declaration block here is:

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

Declarations go inside curly braces.

CSS Break Down

Declarations

This example has two declarations. Here's the first:

```
color: red;
```

- › Every declaration is a property followed by a value, separated by a colon, ending in a semicolon.
- › In this declaration, we are setting the color property to the value red.

CSS Break Down

Declarations

Let's look at the second declaration:

```
font-weight: bold;
```

- › What style property are we specifying here?
- › What value are we setting that property to?
- › Try writing a new set of styles for another element, like an h1.

Where does CSS go?

CSS can be added three different ways:

- Inline

```
<p style="color: red;">...</p>
```

- In the <head>

```
<style>p {color: red;}</style>
```

- In a separate file

Where does CSS go?

Using a separate CSS file

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

Colours

- › Colours can be specified in CSS in a variety of ways:
 - › keyword
 - › hex codes
 - › rgb
 - › hsl
 - › rgba
 - › hsla

Colour Keywords

- We used some of these in Lesson one:

color: BurlyWood;

- They are used less frequently, but are handy for basic colours like black and white.
- There are several:
 - <https://msdn.microsoft.com/library/aa358802.aspx>

Hex Codes (RGB)



#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 digit 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.
- › Note: 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, except 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,
- › Note: 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.

HSL Colors

- › HSL
 - › Similar notation to RGB values, but specify colors using hue, saturation, and lightness.
- › HSLa
 - › As with RGBa, HSLa is exactly like HSL for the first 3 values, but takes a 4th alpha-channel value.
 - › Note: Hue is expressed as a degree angle measure, with red being at 0, green at 120, and blue at 240. Note that the degree unit is implied, and that the angle wraps around, so 360 also refers to red, and -120 is the same as 240 (blue).

FEWD - LESSON 2

LAB TIME

EXERCISE - Assignment 1

45

KEY OBJECTIVES

Practice HTML and CSS
Practice use of web
development tools
Demonstrate ability to create
and style a simple web page

DELIVERABLE

Two linked pages

AGENDA

55 mins

1. Download assignment from schoology
2. Follow instructions to make start on your week 1 assignment

RESOURCES

Code editor
Starter code and images
Example layouts