Chapter 3

How to use HTML to structure a web page

Objectives

Applied

1. Code a properly structured HTML web page using the HTML5 semantic elements and any of the other elements that are presented in this chapter.
2. Given the HTML for a web page, code a relative URL that refers to any file in the folder structure for the web site.

Knowledge

1. Describe the use of the title and meta elements in the head section of an HTML document.
2. Distinguish between a block element and an inline element.
3. Describe the use of these block elements: h1, h2, h3, and p.
4. Describe the use of these inline elements: br, i, b, sup, em, q, and strong.

Objectives (cont.)

5. Describe the use of character entities like &nbsp; or &copy;.
6. Describe the use of these core attributes: id, class, and title.
7. Describe the use of the div and span elements in the HTML for a modern web site.
8. Describe the use of these HTML5 semantic elements: header, section, article, nav, aside, footer, and figure.
9. Distinguish between absolute and relative URLs, and distinguish between root-relative and document-relative paths
10. Distinguish between the use of the <a> element and the img element.
11. Describe the accessibility guidelines for <a> elements and img elements.
12. Describe the two types of lists that you can create with HTML.

I.e. You will learn to use basic HTML tags. So, you can add content to your web pages/site.

Lecture Example:

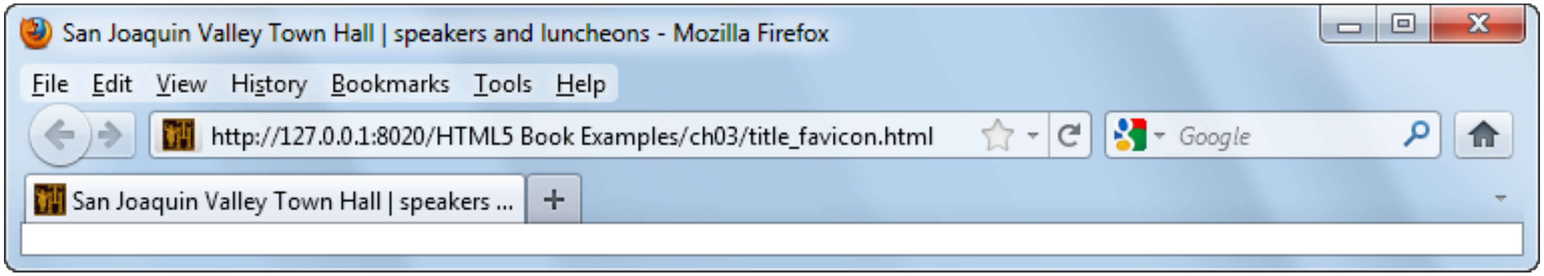
- Create a new folder c3_html
- Place all Chapter 3 D2L files into this folder
  - c3_lecture_examples
    - The selected root folder is c3_html
- Open Notepad++
  - Create a new file, save it as "c3_lecture_examples.html" in the c3_html folder
    - This file should be modified to contain the basic/ minimum html5 tags. (E.g. Chapter 2's lecture)

A head section with a title and a link to a favicon

```
<head>
    <title>San Joaquin Valley Town Hall |
           speakers and luncheons
    </title>
    <link rel="shortcut icon" href="favicon.ico">
</head>
```

16 x 16 ico formatted graphic – name favicon.ico

A browser that shows the title and favicon


San Joaquin Valley Town Hall | speakers and luncheons - Mozilla Firefox
File
Edit
View
History
Bookmarks
Tools
Help
http://127.0.0.1:8020/HTML5 Book Examples/ch03/title_favicon.html
Google
San Joaquin Valley Town Hall | speakers ...
+

Internet Explorer note

- A favicon isn't displayed in older versions of Internet Explorer if the page is served from your local file system. It is only displayed if the page is served from the web server.

~Apply the "favicon.ico"

Note: It may only display from the www, not locally. 83

SEO guidelines for the title tag

I.e. Search Engine Optimization

- Always code a title tag in the head section.
- The title should accurately describe the page’s content.
- The title should include the one or two keywords that you want the page ranked for.
- The title should be interesting enough to entice the reader to click on it when it’s shown in the search results for a search engine.
- The title should be unique for each page in your web site.
- Limit the length of your titles to around 65 characters because most search engines don’t display more than that in their results.
- The title will sometimes display in the search engine but may not help with ranking much anymore... maybe

~Review the above descriptions on page 83.

A head section that includes metadata

```
<head>
    <title>San Joaquin Valley Town Hall |
        speakers and luncheons
    </title>
    <meta charset=utf-8">
    <meta name="description" content="A yearly lecture
        series with speakers that present new
        information on a wide range of subjects">
    <meta name="keywords" content="san joaquin,
        town hall, speakers, lectures, luncheons">
</head>
```

Missing “

Two tags:

Let’s review the information on page 84.

SEO guidelines

- Code the description metadata for each page of your web site.
- The description metadata should summarize the contents of the page and be unique for each page.
- The description metadata can also be longer than the title tag.
- When the description is displayed in the search-engine results, it should encourage users to click on your link.
- Code the keywords metadata for each page of your web site.
- The keywords metadata should consist of no more than 10 keywords or phrases, and it should be unique for each page.
- Like the title, search engines may or may not use meta in ranking
- Sites like Google tend to lean towards actual content, the stuff within the html tags to determine what the page is about and how important/relevant it is

~Add both new meta tags to our code. (85)

Block elements for headings and paragraphs

- h1
- h2
- h3
- h4
- h5
- h6
- p

SEO guidelines

- Use the heading tags to show the structure and importance of the content on a page.
- Always start with an h1 tag and decrease one level at a time to show subsequent levels of importance.

Review page 86.

HTML that uses the block elements

```
<h1>San Joaquin Valley Town Hall Programs</h1>
<h2>Pre-lecture coffee at the Saroyan</h2>
<p>Join us for a complimentary coffee hour, 9:15 to 10:15
   a.m. on the day of each lecture. The speakers usually
   attend this very special event.</p>

<h2>Post-lecture luncheon at the Saroyan</h2>
<p>Extend the excitement of Town Hall by purchasing
   tickets to the luncheons</p>
```

~Let’s add some headings and paragraphs to our code. 87

Block elements for special types of text

- pre
- blockquote
- address

Review page 88

Important: Normally, do not use these elements to format block’s of text. They should be used to identify a specific block of text content.

HTML that uses the special block elements

```
<p>How to use <i>JavaScript</i> to display the year:</p>
<pre>
        var today = new Date();
        document.writeln( today.getFullYear() );
</pre>

<p>Ernest Hemingway wrote:</p>
<blockquote>Cowardice, as distinguished from panic, is
    almost always simply a lack of ability to suspend the
    functioning of the imagination.
</blockquote>

<p>How to contact Mike Murach &amp; Associates:</p>
<address>1-800-221-5528<br>
    <a href="emailto:murachbooks@murach.com">
       murachbooks@murach.com</a>
</address>
```

~Let’s add one of each to our code example. 89

Inline elements for formatting text

- i
- b
- sub
- sup
- br

Normally, inline elements are used to identify and format text contained within a block level element.

~Let’s add an example to our code. 91 part 1

Inline elements for identifying content

- abbr
- cite
- code
- dfn
- em
- kbd
- q
- samp
- strong
- var

Use these tags/elements to identify special formatting that will be applied to specific content. Then, you may use CSS rules to format the identified content.

Use elements on the previous slide to format inline content. Use these elements to identify content then; modify the content with CSS

Review the tag descriptions on page 91.

~Let’s add couple to our code. 91 part 2

Common HTML character entities

Entity	Character
&amp;	&
&lt;	<
&gt;	>
&copy;	©
&reg;	®
&trade;	™
&cent;	¢
&deg;	o
&plusmn;	±
&lsquo;	‘ (opening single quote).
&rsquo;	’ (closing single quote or apostrophe).
&ldquo;	“ (opening double quote).

The user viewed character.

The html code characters.

>

Common HTML character entities (continued)

Entity	Character
&rdquo;	” (closing double quote).
&nbsp;	A non-breaking space. It will always be displayed.

A character entity starts with an & and ends with a ;

A Google search will produce a list of entities.

Entities can be used for characters that are not available on your keyboard.

Entities are also used to add content that could be inadvertently interpreted as html syntax: E.g. < as &gt; and & as &amp;

Note: you can use the &nbsp; to inject extra vertical spaces between content.

~Let’s add a copyright symbol in our code 93

Core HTML attributes

- id
- class
- title
- lang

Note: The id and class attributes are extremely important. They're frequently used to connect both CSS and JavaScript to HTML.

Accessibility guideline

- Always code the lang attribute on the html element to identify the language for the page.

The id is meant to identify page-unique content and thus it is only valid to have it appear one time on a given page. An id has one value. id="myid"

The class attribute enables CSS styles to be applied to common elements that all share the same class name. Classes can have multiple values separated by spaces.

Single: class="myclass"

Multiple: class="myfirstclass anotherclass"

Review page 94, especially the last paragraph.

HTML that uses these attributes

```
<html lang="en">
<body>
    <h1>San Joaquin Valley Town Hall</h1>
    <p class="first">Welcome to San Joaquin Valley Town
       Hall.</p>
    <form action="subscribe.php" method="post">
        <p>Please enter your e-mail address to subscribe
           to our newsletter.</p>
        <p class="first field">E-Mail:
        <input type="text" name="email" id="email"
               title="Enter e-mail here."></p>
        <p><input type="submit" value="Subscribe"></p>
    </form>
</body>
</html>
```

All id and class attribute values are case sensitive.

~Let’s add some examples to our code. 95

A block element for structuring a web page

- div

An inline element for formatting text

- span

Accessibility and SEO guidelines

- Use div tags only when the HTML5 semantic elements don’t apply.
- Use span tags only when the tags for identifying content don’t apply.

A page structured with div and span elements

```
<body>
    <div id="header">
        <h1>San Joaquin Valley Town Hall</h1>
    </div>
    <div id="main">
        <p><span id="welcome">Welcome to San Joaquin
           Valley Town Hall.</span>
           We have some fascinating speakers for you
           this season!</p>
    </div>
    <div id="footer">
        <p>&copy; Copyright 2012 San Joaquin Valley Town
           Hall.</p>
    </div>
</body>
```

~Let’s add both to our code. 97

Notice how multiple block level elements are contained within the <div> element.

Professor’s Note:

- The following concepts are new and extremely important.
- Even if you had HTML before. You may not have worked with the following items.

New HTML Example

- Please close the current lecture example
- Open a new HTML file
  - Save it as "c3_lecture_html5_semantic_elements.html"
  - ~Modify it to be a basic HTML5 web page.

- Add code found on the following slides accordingly

The primary HTML5 semantic elements

- header
- section
- article
- nav
- aside
- footer

Accessibility and SEO guideline

- Use the HTML5 semantic elements to indicate the structure of your pages.

- Normal Stacking order:
  - The header element is child of the <body>
  - The <nav> element can be a child of any element. Mostly a child of the <body>
  - The section element is normally a child of the <body>
  - The article element is normally a child of a <section> element.
  - The aside element can (should) be placed inside or outside of section or article elements.
  - The footer is a child of the <body>

- Normal Occurrences:
  - You can have multiple article elements within a section.
    - Section and article elements can be uniquely identified by applying id or class attributes to them.
  - You can have multiple sections with a <body> or <aside> elements

- The placement combinations are endless.

Basically, element locations are dependent upon the web pages desired overall layout structure and content.

A page with header, section, and footer elements

```
<body>
    <header>
        <h1>San Joaquin Valley Town Hall</h1>
    </header>
    <section>
        <p>Welcome to San Joaquin Valley Town Hall. We
           have some fascinating speakers for you this
           season!</p>
    </section>
    <footer>
        <p>&copy; Copyright 2012 San Joaquin Valley Town
           Hall.</p>
    </footer>
</body>
```

~Let's add the new HTML5 semantic elements to our new web page. Then, we will add some tags and content. 99

Professor’s Note:

From **now on (i.e. for assignments),** we will typically use the HTML5 semantic elements, as needed, unless there is a specific reason not to do so.

Other HTML5 semantic elements

- time
- figure
- figcaption

These elements would only be used if the layout/structure of the web page requires them.

Accessibility and SEO guideline

- Use the HTML5 semantic elements to indicate the structure of your pages.

The hgroup element - No Longer Used!

```
~~<hgroup>~~
    <h1>San Joaquin Valley Town Hall</h1>
    <h2>Bringing cutting-edge speakers to the valley</h2>
~~</hgroup>~~
```

The attributes of the time element

- datetime
- pubdate

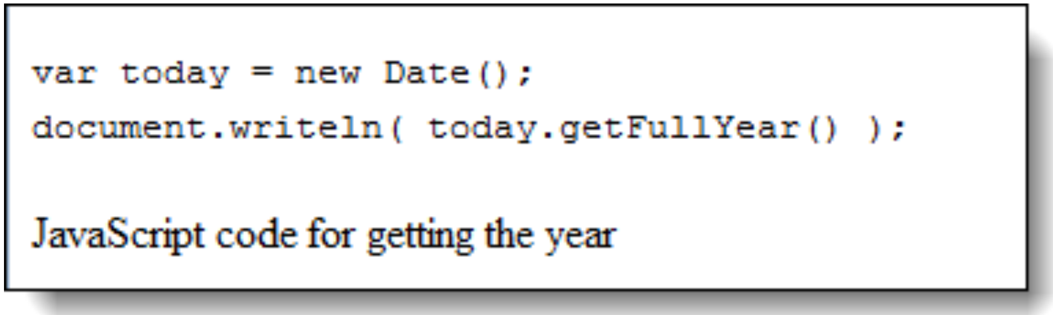
A time element

```
<p>Next year's conference will be on
    <time datetime="2012-05-31">May 31st</time>.</p>
```

The figure and figcaption elements

```
<figure>
    <code>
        var today = new Date();<br>
        document.writeln( today.getFullYear() );<br><br>
    </code>
    <figcaption>
        JavaScript code for getting the year
    </figcaption>
</figure>
```

The code displayed in a browser

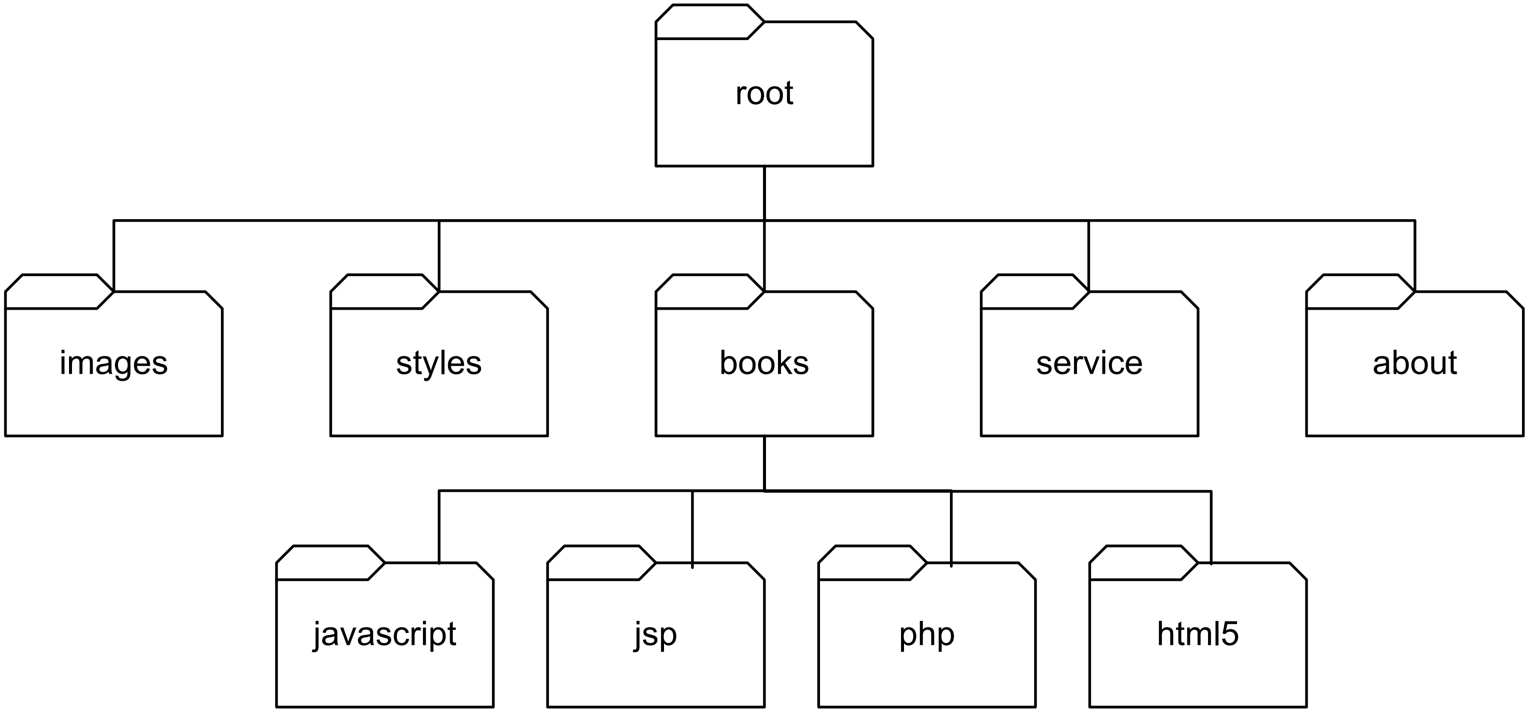


```
var today = new Date();
document.writeln( today.getFullYear() );
```

JavaScript code for getting the year

~We will NOT add these examples now. We will add them as necessary. Later.

A simple web site folder structure



Relative referencing means: Where you are currently located within the folder structure.

Absolute URLs

```
http://www.murach.com/index.html
http://www.murach.com/books/php/toc.html
```

Root-relative paths

```
/login.html                (refers to root/login.html)
/images/logo.gif           (refers to root/images/logo.gif)
```

Document-relative paths that navigate down from the root folder

```
images/logo.gif            (refers to root/images/logo.gif)
books/php/overview.html    (refers to
                            root/books/php/overview.html)
```

Document-relative paths that navigate up from the root/books folder

```
../index.html              (refers to root/index.html)
../images/logo.gif         (refers to root/images/logo.gif)
```

Basic attribute of the <a> element

- href

Based on relative referencing rules: Where is each file located?

A link to a page in the same folder

```
<p>Go view our <a href="products.html">
   product list</a>.</p>
```

A link to a page in a subfolder of the parent folder

```
<p>Read about the <a href="../company/services.html">
   services we provide</a>.</p>
```

A link to a page based on the root folder

```
<p>View your <a href="/orders/cart.html">
   shopping cart</a>.</p>
```

A link to a page at another web site

```
<p>To learn more about JavaScript, visit the
<a href="http://www.javascript.com/">
   official JavaScript web site</a>.</p>
```

New HTML Example:

- Create another new html file in the c3_html folder “c3_links_lists_images.html”
- Add all the HTML5 basic elements:
- Add an h1 heading

Elements that create ordered and unordered lists

- <ul>
- <ol>
- <li>

There are three types of lists: Ordered, unordered, and description.

In an ordered list each item is preceded by a number incrementally.

You must sort the list manually.

In an unordered list, each element is preceded by a bullet

By applying CSS rules, you can change the list’s preceded figure (bullet or number) or place it inside our outside of “the box.”

An li element is required for each item in the list. (I.e. list item)

HTML that creates two lists

```
<p>We have books on a variety of languages, including</p>
<ul>
    <li>JavaScript</li>
    <li>PHP and MySQL</li>
    <li>Servlets and JSP</li>
    <li>ASP.NET</li>
</ul>

<p>You will need to complete the following steps:</p>
<ol>
    <li>Enter your billing information.</li>
    <li>Enter your shipping information.</li>
    <li>Confirm your order.</li>
</ol>
```

~Again, let’s add some code to our example. We’ll incorporate some links, too. 105 & 107

Add Images:

- Create a new folder in your chapter 3 site root folder (c3_html)
  - “images”
- Move the three .png images and .jpg to this new folder.

Attributes of the <img> element

- src
- alt
- height
- width

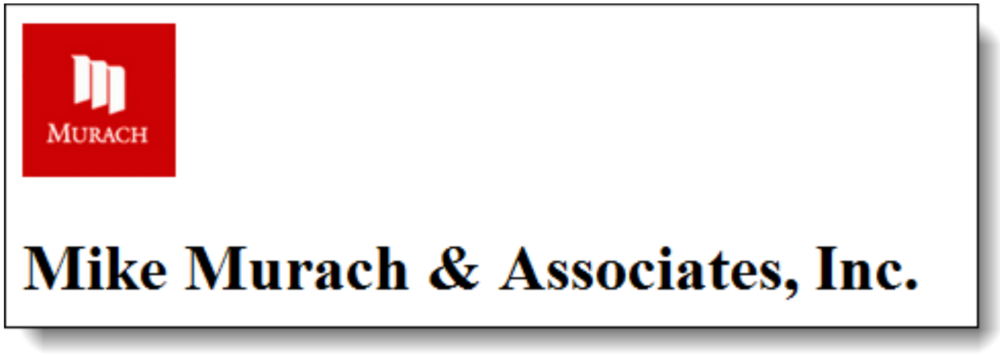
Accessibility guidelines

- For images with useful content, always code an alt attribute that describes the image.
- For images that are used for decoration, code the alt attribute with no value ("").

An img element

```
<img src="images/murachlogo.gif"
     alt="Murach Logo" height="75">
<h1>Mike Murach &amp; Associates, Inc.</h1>
```

The image in a web browser



Mike Murach & Associates, Inc.

~Let’s add an image to our page. 109

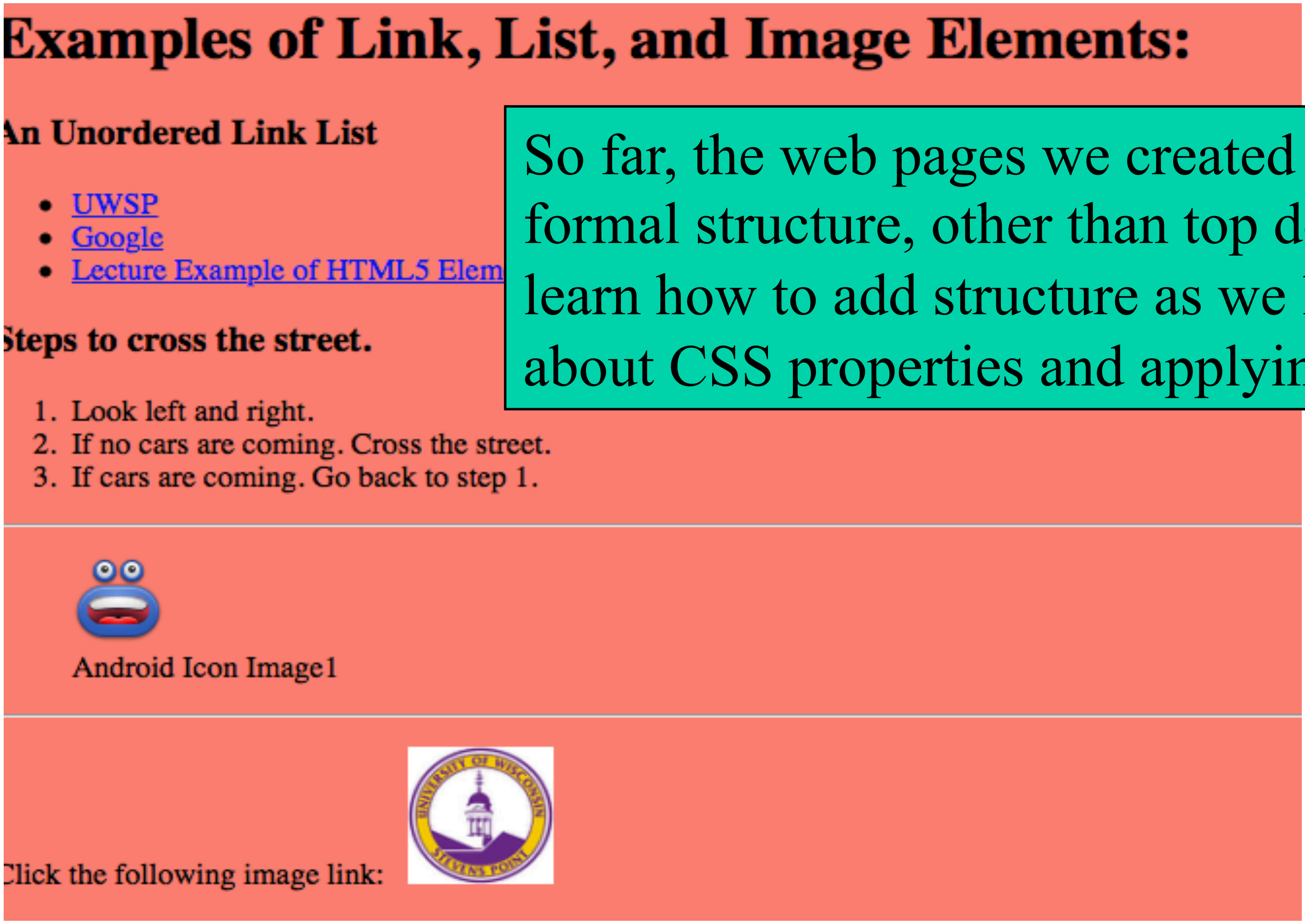
~Let’s Add Two More Links

- Add two more image links to the UnorderedLinkList article
  - Use images 2 and 3 for the graphic
  - Link to:
    - UW Green Bay
    - UW Eau Claire

Image formats supported by most browsers

- JPEG (Joint Photographic Experts Group)
- GIF (Graphic Interchange Format)
- PNG (Portable Network Graphics)

A structured web page



Examples of Link, List, and Image Elements:

An Unordered Link List

- UWSP
- Google
- Lecture Example of HTML5 Elem

Steps to cross the street.

1. Look left and right.
2. If no cars are coming. Cross the street.
3. If cars are coming. Go back to step 1.

Android Icon Image1

Click the following image link:

So far, the web pages we created have little formal structure, other than top down. We will learn how to add structure as we learn more about CSS properties and applying them.

- End of Chapter 3 Lecture
- Review the chapter 3 assignment.
- Read chapter 4 for Thursday
- Questions?