HTML LEARNING PATH

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2.0 Understanding Why We Use HTML

WHY
HTML, HyperText Markup Language, is key to any website because it gives structure to content on a webpage using **tags**. HTML tags are a set of instructions for web browsers to display the webpage. Well structured HTML, allows content to be easily readable by browsers. Thinking carefully about how we write HTML helps us structure the order and presentation of our content to our users, rather than having it run together on the screen.

HOW
Browsers, such as Google Chrome, **render** HTML to present content elements such as text, links, images and other elements for any website in the world. HTML elements consist of two tags, one opening and one closing. In the code example, <html> is an opening tag and </html> with the slash is a closing tag. The text between the opening and the closing tag is the content of the HTML element.

CODE/IMAGE:
<html>
</html>

GLOSSARY
HTML stands for Hypertext Markup Language.
Tags are angle brackets used for marking up text elements in a document.
Render is how content is displayed on the page.
Web browser (Chrome, IE, Firefox, Safari) is an application for displaying HTML over the internet.

TIPS AND RESOURCES
HTML Tip Sheet

PRACTICE
How do browsers read HTML?

- For any website, choose “View Page Source” from the View dropdown menu. Here, you can find the <html></html> tags for any website.
- When you refresh the browser, only the content is displayed on screen, not the HTML tags.

2.1 Creating a Web page

WHY
HTML is used to display content in websites across any browser on the internet. The <html> open and close tag tells the browser about the beginning and end of a web page. The second tag in the code example is the <body> tag. Content between the opening and the closing body tags are shown in the main area of the web browser.

HOW
To create a webpage using HTML, you only need a text editor and a browser to view and test your web page. Use any free text editor you prefer. Notepad++ is a free text editor for Windows you can download and install. Text Wrangler is a free MAC compatible browser. To test a web page you’ve created, click the refresh icon on the top of your browser. Whenever you make changes, you need to save the document and refresh to see the updated.

GLOSSARY
text editor is a software application for editing code.
Notepad++ is a free text editor for Windows.
Text Wrangler is a free MAC compatible browser.

TIPS AND RESOURCES
HTML Tip Sheet

PRACTICE
How to use HTML to create a webpage.
Begin by creating a folder on your computer for your project. Name the folder MyWebsite (or anything you want). Open **Text Wrangler** (or your code editor of choice). Choose Save As. Name the file “index.html”. Now you have successfully created a blank text file named index.html that will be your first web page.

Type the following lines of HTML:
<html>

```
<head>
  <title>My First Website!</title>
 <meta charset="UTF-8">
</head>
<body>
</body>
</html>
```
Save the file.

Web pages with names like index.html have special meaning. If a website address is called, for example http://mywebsite.com, the index.html file is automatically displayed first, which in this case is http://mywebsite.com/index.html. For our website, index.html will become our home page.

2.2 Identify HTML Elements

WHY
Without HTML elements, the web browser cannot display and tell the difference between content like text, navigation, links, images, and other structural elements.
An **element** in HTML represents a structural item in a web page. We have already seen the two elements <html> and <body> but web pages usually contain a few more. Think about how you want people to read your content online. Identify the elements of your content you are likely to share, like text, links, images, and other structural elements?

HOW
Let's say, you visit a website and see a headline or paragraph.
The **headline** element<h1> and **paragraph** element <p> are rendered differently in the browser with their own structural meaning.

Code sample:

```
<!DOCTYPE html>
<html>
  <head>
  <title>My First Website!</title>
 <meta charset="UTF-8">
</head>
  <body>
    <h1>This is the heading</h1>
    <p>This is the paragraph content</p>
  </body>
</html>
```

GLOSSARY
Elements in HTML can consists of a tag or attribute that describe the content.
Heading defined as <h1> is the main heading. Sub headings can be created with <h2>, <h3>, <h4>, <h5>, and <h6>.
Paragraph contains the text between and .
Declare the **document type <!DOCTYPE html>** on the first line to tell the browser this is a HTML document.
The Head <head> element contains additional information about the page.
The Title <title> element is displayed in the title bar at the top of your browser window.

TIPS AND RESOURCES
HTML Tip Sheet

PRACTICE
Edit your webpage to the following code.

```
<!DOCTYPE html>
<html>
  <head>
  <title>My First Website!</title>
 <meta charset="UTF-8">
</head>
  <body>
    <h1>This is the heading</h1>
    <p>This is the paragraph content</p>
  </body>
</html>
```

Save the index.html file you just edited. Refresh the web browser. You should see the heading “This is a Heading” and the paragraph text “This is the content of the paragraph element.” The headline element<h1> and paragraph element are rendered differently in the browser with their own structural meaning.

2.3 Why Do We Use Structural Elements

WHY
Most websites need a common structural pattern consisting of a header, navigation, main content and footer. This structural pattern of elements have meaningful tags known as **semantic** tags. Semantic tags do not inherently have any visual influence on the content on the page but rather the order on the webpage.

HOW
Semantic elements such as the <section> tag, clearly defines sections in a document, such as headers, footers, or any other sections of the document. Most browsers will display semantic tags with default meaning. Similarly, the <header> element is used to define the header content of a site. The <nav> defines the navigation menu. The footer <footer> tag contains the content for the footer section at the bottom of a webpage. In addition, semantic attributes can be added to other HTML tags such as the DIV tag to give the content specific meaning. HTML code like:
to indicate navigation, header, and footer.

CODE/IMAGE:

```
<!DOCTYPE html>
<html>
  <head>
    <head>
  <title>My First Website!</title>
 <meta charset="UTF-8">
</head>
    <section>
    <h1>This is the heading</h1>
    <p>This is the paragraph content</p>
    </section>
  </body>
</html>
```

GLOSSARY
Semantic html defines the meaningful order of elements in a web page.

TIPS AND RESOURCES
HTML Tip Sheet

PRACTICE
Edit your webpage and add the following <section> code to the following.

```
<!DOCTYPE html>
<html>
  <head>
  <title>My First Website!</title>
 <meta charset="UTF-8">
</head>
  <body>
   <section>
    <h1>This is the heading</h1>
    <p>This is the paragraph content</p>
```

```
   </section>
  </body>
</html>
```

2.4 Editing Your Web page

WHY
As a content creator, you can manage your own online content that you want Search to display by editing your metadata markup. For this purpose, you define **Metadata** such as document title <title>, styles <style>, links <link>, scripts <script> and other meta information about your web page.

HOW
Metadata is data that describes other data. The <head> element is a container for meta elements <meta>, which are typically used to specify page description, keywords, author of the document, and other information about your content. Google uses content metadata and other relevant data to to describe your content in search. Editing the html markup with your metadata and other semantic elements helps search engines display high quality, organic content for your web page.

Code sample:

```
<html>
<head>
<title>My First Website!</title>
<meta name="description" content="Describe the content of your web page here">
<meta name="keywords" content="HTML,CSS,JavaScript">
<meta name="author" content="Your Name">
<meta charset="UTF-8">
</head>
```

GLOSSARY
<title>...</title>: Contains the site's title, which is one way Google can find your site.
<meta charset="utf-8"/>: Tells the web browser which character set to use.
<base> Defines a default address or a default target for all links on a page
<link> Defines the relationship between a document and an external resource
<meta> Defines metadata about an HTML document
<script> Defines a client-side script
<style> Defines style information for a document

TIPS AND RESOURCES
HTML Tip Sheet

PRACTICE
Edit the metadata of your website in a web page and save your file.
<html>
<head>
<title>My First Website!</title>
<meta name="description" content="Describe the content of your web page here">
<meta name="keywords" content="HTML,CSS,JavaScript">
<meta name="author" content="Your Name">
<meta charset="UTF-8">
</head>
Edit the metadata of your website in a web page and save your file.

Now try adding a few more.

2.5 Fun with Images

WHY
The **<img>** element only has one opening but no closing tag. It contains a **src**, **alt** and size attribute. The src attribute specifies the location path and filename of the image. The alt attribute is an "alternative text", which describes the content of the image. This alternative text is used by search engines when the image can not be displayed, for example on a screen reader for the blind.

HOW
Images are defined using an <img> tag. The source file (src), alternative text (alt), and size (width and height) are attributes for the image.

Code sample:
<img src="url" alt="some_text">

GLOSSARY
<**img**> is the image tag.
(**src**) is the location source attribute for the image file.
(**alt**) is the alternative text for an image tag.
(**width and height**) is the size attributes for the image.

TIPS AND RESOURCES
HTML Tip Sheet

PRACTICE
Copy an image to your MyWebsite folder on your computer. Edit your web page and add an image tag to a new paragraph container. Make sure that you specify the exact file name, including the file extension in the src attribute.

```
<!DOCTYPE html>
<html>
  <head>
<title>My First Website!</title>
<meta name="description" content="Describe the content of your web page here">
<meta name="keywords" content="HTML,CSS,JavaScript">
<meta name="author" content="Your Name">
<meta charset="UTF-8">
</head>
  <body>
   <section>
    <h1>This is the heading</h1>
    <p><img src="url" alt="some_text"></p>
    <p>This is the paragraph content</p>
   </section>
  </body>
</html>
```

Save your file.

2.6 Connect Web Pages Using Links

WHY
The HTML anchor element makes it possible to link your content to other web pages. Whether you're building out your navigational menu or adding links within your content, the anchor element provides the location web address, known as a **URL**, such as http://google.com.

HOW
In HTML, **links** or sometimes called hyperlink is defined with the **<a>** tag called an **anchor** element and href attribute. Links makes it possible to link your text or image content to other web pages.
The href attribute specifies the URL or destination address (http://google.com) The link text is the visible part (Search Google.com). Clicking on the link text, will send you to the destination address.

Code sample:

link text

GLOSSARY
Anchor tag <a> describes a link's destination and the href attribute for the address.
URL, stands for Uniform Resource Locator, is the location address.

TIPS AND RESOURCES
HTML Tip Sheet

PRACTICE
Add a link to the paragraph tag.

```
<!DOCTYPE html>
<html>
  <head>
<title>My First Website!</title>
<meta name="description" content="Describe the content of your web page here">
<meta name="keywords" content="HTML,CSS,JavaScript">
<meta name="author" content="Your Name">
<meta charset="UTF-8">
</head>
  <body>
   <section>
    <h1>This is the heading</h1>
    <p><img src="url" alt="some_text"></p>
    <p>This is the paragraph content. <a href="http://www.google.com">Search Google.com</a>
</p>
   </section>
  </body>
</html>
```

Save your file.

2.7 Add Lists to Your Content

WHY
List elements can be used to organize content on a webpage in a number of ways, such as organizing a website's navigation menu.

HOW

An **unordered list ** tag contains nested **list <li> tags** inside the <ul> tag. The list items will be marked with bullets (small black circles), however a style attribute can be added to an list tag to define the style of the bullet. An **ordered list** starts with the **<ol>** tag. Each list item within the <ol> tag starts with the <li> tag. A description list is a list of terms, with a description of each term. The **<dl>** tag defines the description list, the **<dt>** tag defines the term (name), and the **<dd>** tag describes each term.

Code sample:

```
<ul>
<li>A list item</li>
<li>A second list item</li>
<li>A third list item</li>
</ul>
```

GLOSSARY

<ul> element to define an unordered list
<ol> element to define an ordered list
<li> element to define a list item
<dl> element to define a description list
<dt> element to define the description term
<dd> element to define the description data
Lists can be nested inside lists
List items can contain other HTML elements

TIPS AND RESOURCES

HTML Tip Sheet

PRACTICE

Add an unordered list that we will style for a navigational menu in another chapter.

```
<!DOCTYPE html>
<html>
  <head>
<title>My First Website!</title>
<meta name="description" content="Describe the content of your web page here">
<meta name="keywords" content="HTML,CSS,JavaScript">
<meta name="author" content="Your Name">
<meta charset="UTF-8">
</head>
  <body>
        <ul>
        <li>A list item</li>
        <li>A second list item</li>
```

```
        <li>A third list item</li>
        </ul>
  <section>
   <h1>This is the heading</h1>
   <p><img src="url" alt="some_text"></p>
   <p>This is the paragraph content. <a href="http://www.google.com">Search Google.com</a>
</p>
  </section>
 </body>
</html>
```

Save your file.

2.8 Parent and Child Elements

WHY
You may have noticed that the list elements we added had elements nested inside each other. For example, in unordered lists, the <li> elements are nested inside the ul. **Nested tags** are also called **parent / child** elements. A element (Document Division Element) is the generic container used for nesting content, which does not inherently represent anything. Nested **child elements** within one another have a parent block-level order that is relatively positioned to the parent in the document.

HOW
A ** element** (Document Division Element) is the generic container used for nesting content, which does not inherently represent anything. It can be used to group elements for styling purposes using the class or id attributes, or because they share attribute values. Divs should only be used when no other semantic element, such as <article> or <nav>, is appropriate. It's important to consider the position of a child div element within a parent div container, relative to the parent.

Code sample:
```
<div class="parent">
  <div class="child"></div>
</div>
```

GLOSSARY
Nested tags
 element

TIPS AND RESOURCES

HTML Tip Sheet

PRACTICE
Add nested parent/child div elements to your web page.

```
<!DOCTYPE html>
<html>
  <head>
<title>My First Website!</title>
<meta name="description" content="Describe the content of your web page here">
<meta name="keywords" content="HTML,CSS,JavaScript">
<meta name="author" content="Your Name">
<meta charset="UTF-8">
</head>
  <body>
          <ul>
          <li>A list item</li>
          <li>A second list item</li>
          <li>A third list item</li>
          </ul>
<div class="parent">
   <div class="child"></div>
</div>
   <section>
    <h1>This is the heading</h1>
    <p><img src="url" alt="some_text"></p>
    <p>This is the paragraph content. <a href="http://www.google.com">Search
Google.com</a></p>
   </section>
<section>
<div class="parent">
   <div class="child"></div>
</div>
</section>
  </body>
</html>
```

Save your file.

2.9 Use Tags to Format Text

WHY
Formatting elements were designed to display special types of text with added semantic meaning. HTML uses elements like <b> and <i> for formatting output, like bold or italic text. Browsers display as <b>, and as <i>. However, there is a difference in the meaning of these tags: <b> and <i> defines bold and italic text, but and means that the text is "important".

HOW
The HTML element defines emphasized text, with added semantic importance. The HTML <b> element defines bold text, without any extra importance. The HTML element defines strong text, with added semantic "strong" importance. The and tags are "logical" tags. Use these tags when the content of your page requires that certain words or phrases be stressed, and if you want highlighting words only for visual effect, use the <b> and <i> tags.

Code sample:
This is the paragraph content.

GLOSSARY
<b> - Bold text
 - Important text
<i> - Italic text
 - Emphasized text
<mark> - Marked text
<small> - Small text
<del> - Deleted text
<ins> - Inserted text
<sub> - Subscript text
<sup> - Superscript text

TIPS AND RESOURCES
HTML Tip Sheet

PRACTICE
Add tag to paragraph text in your web page.

<!DOCTYPE html>
<html>
  <head>
<title>My First Website!</title>
<meta name="description" content="Describe the content of your web page here">
<meta name="keywords" content="HTML,CSS,JavaScript">
<meta name="author" content="Your Name">

```
<meta charset="UTF-8">
</head>
  <body>
          <ul>
          <li>A list item</li>
          <li>A second list item</li>
          <li>A third list item</li>
          </ul>
<div class="parent">
   <div class="child"></div>
</div>
   <section>
    <h1>This is the heading</h1>
    <p><img src="url" alt="some_text"></p>
    <p><em>This is the paragraph content. <a href="http://www.google.com">Search
Google.com</a></em></p>
   </section>
<section>
<div class="parent">
   <div class="child"></div>
</div>
</section>
  </body>
</html>
```

Save your file.

2.10 Use Media in HTML

WHY

The video and audio element in HTML specify a standard way to **embed** media into a web page. A media file typically contains multiple tracks — a video track or audio tracks that can have metadata, such as the aspect ratio of a video track or the language of an audio track, or a variety of container formats. A browser will choose the first video file it can actually play based on the container information. It is up to you to know which browsers support which media files.

HOW

Use the HTML <video> or audio element to embed video content in a web page. The video element contains one or more media sources. To specify a video source, use either the src attribute or the <source> element; the browser will choose the first compatible reference. The

controls attribute adds video controls, like play, pause, and volume. Include width and height attributes for video to set the size for the browser.

CODE/IMAGE:

```
<video width="" height="" controls>
  <source src="movie.mp4" type="video/mp4">
Your movie here.
</video>
```

GLOSSARY

Video tag <video> is the element for embedding video in a web page.
Audio tag <audio> is the element for embedding audio in a web page.
Embedding media into a web page means the media file plays within the web page without the user having to leave the screen.

TIPS AND RESOURCES

HTML Tip Sheet

PRACTICE

Copy a video to your MyWebsite folder on your computer. Edit your web page and add an video tag to a new paragraph container. Make sure that you specify the exact size and video type for your movie.

```
<!DOCTYPE html>
<html>
  <head>
<title>My First Website!</title>
<meta name="description" content="Describe the content of your web page here">
<meta name="keywords" content="HTML,CSS,JavaScript">
<meta name="author" content="Your Name">
<meta charset="UTF-8">
</head>
  <body>
<ul>
<li>A list item</li>
<li>A second list item</li>
<li>A third list item</li>
</ul>
<div class="parent">
   <div class="child"></div>
</div>
   <section>
    <h1>This is the heading</h1>
```

```
    <p><img src="url" alt="some_text"></p>
    <p><em>This is the paragraph content. <a href="http://www.google.com">Search
Google.com</a></em></p>
   </section>
<section>
<div class="parent">
   <div class="child"></div>
</div>
</section>
<section>
<p>
<video width="" height="" controls>
  <source src="movie.mp4" type="video/mp4">
Your movie here.
</video>
</p>
</section>
  </body>
</html>
```

Save your file.