HTML INTRODUCTION

INTRODUCTION

HTML is the markup language that is used by your browser to know what content needs to be displayed on the page.

It does this by reading in the HTML tags from your source code file and constructing them into a visual representation you are used to seeing in the browser.

One interesting thing about HTML is that your browser actually tries really hard to not let one or two errors ruin the entire page. You can technically write HTML code that is invalid, but your browser will try to fix it up for you. This is (in my opinion) actually a bad thing.

THE ANATOMY OF AN HTML TAG

This is an example of a valid HTML tag:

<h1>Hello World!</h1>

As we will learn, an HTML tag is made up of 3 sections (most of the time):

1. The opening tag
2. The content
3. The closing tag

OPENING HTML TAGS

The opening tag is how you start any HTML tag.

The construction of an opening tag is very simple:

1. Open angled bracket: <
2. Name of tag: a
3. Any **optional attributes** you might have
4. Closing angled bracket: >

Together these make an opening tag:

<a href=“#”>

<p>

<h1>

HTML TAG CONTENT

The content of a tag is usually what is displayed to your browser

The content doesn’t have any particular structure, as you can simply type what you want in between the opening and closing tags.

<a href=“#”>**THIS IS CONTENT**</a>

<p>**I am the content**</p>

CLOSING HTML TAGS

The closing tag is how you end any HTML tag.

The construction of an opening tag is very simple:

1. Open angled bracket: <
2. Forward slash: /
3. Name of the tag: a
4. Closing angled bracket: >

Together these make a closing tag:

</a>

</p>

</h1>

SELF ENDING TAGS

There are tags that exist in HTML that don’t have **content** or a **closing tag.** For example, the img tag which is used to show an image in the browser doesn’t use content but instead **attributes.**

This means an img tags looks like:

<img src=“images/dog.png” />

Notice that there is no closing tag or content, simply one tag. There are a few different tags that do this, but in general this simply means that the tag has no use for content.

TAG ATTRIBUTES

As you saw in the tag before, opening HTML tags can contain attributes.

These attributes contain data about the tag that the browser will read in and use to apply rules with. They can be used to identify the tag in CSS, to call a JS function when the tag is clicked, and much more.

There are tons of different attributes, but the general form of an attribute is:

<tagName **attribute="value"**>Tag Content</tagName>

Here the general form is attribute="value". You can have multiple attributes on one tag.

TAG ATTRIBUTES CONT.

Let’s take a look at some common uses of attributes with tags. Don’t worry, we will cover *what* these attributes do later (although I’m sure you can guess on a couple). Let’s just look at their syntax for now and understand *how* to write them.

```
<img src="images/profile.jpg" alt="A generic grey profile picture">
```

- Here we have two attributes, src and alt

```
<a href="https://google.ca">Google</a>
```

- Here we have one attribute, href

```
<input type="button" value="Click me” />
```

- Here we have two attributes, type and value

NESTING HTML ELEMENTS

As you might remember from the first week (or bugs from your first week), HTML tags can contain other HTML tags.

This is called nesting tags. As your browser reads the HTML file, it knows that the **content section** of a tag can contain **other HTML tags.**

For example you can have an **a** tag inside of a **p** tag to make one section of a text a link:

```
<p>This is a
    <a href=“#”>Link!</a>
</p>
```

NESTING HTML ELEMENTS CONT.

```
<p>This is a
    <a href=“#”>Link!</a>
</p>
```

Notice that this is also very much the parent-child relationship mentioned before. Where the p tag is the parent, and the a tag is the child.

There is a strict rule you must adhere to when nesting tags:

1. A child tag must close before the parent tag closes.

If you notice above, the a tag is opened and closed entirely within the p tag. Nesting can also continue on deeper, nesting tags within tags within tags. You only have to follow the one rule.

NESTING HTML ELEMENTS CONT.

```
<p>This is a
    <a href=“#”>Link!</a>
</p>
```

If the above is a good example, let’s see a bad example:

```
<p>This is a
    <a href=“#”>Link!
</p>
</a>
```

Here we can see the a tag starts inside the p tag, but closes after. This is not allowed and will break your site.

Now that we know the basic construction process of an HTML tag, we can move on to the basic construction of an HTML page.

THE HTML PAGE FORMAT

Every HTML page starts off with the:

<!DOCTYPE html> tag followed by the:

<html></html> tag.

All website content is nested within the html tag.

THE HTML PAGE FORMAT CONT.

Nested within the “html” tags there needs to be two other tags, namely the “head” and the “body” tags.

```
<html>
    <head>
    </head>
    <body>
    </body>
</html>
```

The head tag is read by your browser and is usually filled with “**metadata**” tags while the body is filled with tags that will display content to your users.

THE HTML PAGE FORMAT CONT.

Nested within the head tag you can put things like your pages title. This is displayed on the tab in the browser

```
<html>
    <head>
        <title>This is my page</title>
    </head>
    <body>
    </body>
</html>
```

You will also have things character encoding and site description in the head tag.

THE HTML PAGE FORMAT CONT.

Nested within your body tag are all of your HTML tags that will show things to the user.

```
<html>
    <head>
        <title>This is my page</title>
    </head>
    <body>
        <p>This is my page content!</p>
    </body>
</html>
```

HEAD VS BODY

The main rule of thumb when working with HTML documents to start is remember, content that actually shows up on the page belongs in the **body** tag.

Tags that we will learn about later that act as information tags for the browser will show up in the **head**.

INDEX.HTML

When you type in an address into your browser, your computer will make a connection to the server, but we are supposed to be asking for some files.

The index.html file is the default file that will be served to a client if there is no specific file asked for.

This is why in your assignments we have been making index.html files

COMMON HTML TAGS

Here is a very non-exhaustive list of HTML tags:

- <h1> all the way to <h6> : Heading tags
- <p> : Paragraph tag
- <br> : New line tag (no closing tag required)
- <img> : Image tag (no closing tag required)
- <div> : A block container used for structure
- <span> : An inline container used for structure

HTML

When it comes to learning a markup language, the actual syntax of the tags is not the hard part. What gives this process a learning curve is being able to figure out all of the little interactions different tags have with each other.

We really just need to build up our knowledge of which tags exist and for what purpose. You will slowly build up a repertoire of tags that you will be able to deploy in certain situations over time.

This only gets more complicated when we add the idea of CSS to the mix that can change how the tags lay themselves out on the page!