

## Eighth Lesson: The Beginning of HTML



**Welcome back to another lesson!**  
**We're now entering the web development languages, which most commonly consist of HTML, CSS, and JavaScript. We'll be focusing on HTML for now to build the foundation of a website.**

### **An Introduction to HTML**

HTML stands for HyperText Mark-up Language, and is commonly used to create basic framework for web pages. It's usually attributed with containing the content of the website, with more stylistic choices (i.e. color, border) being handled by CSS and interactive components (i.e. buttons, navigation bars) dealt with by Javascript. HTML is a very easy to understand language that won't give you too much trouble—it's really Javascript you'll have to worry about (but that's for later).

### **Setting Up**

For our purposes, we will be using [Atom](#) if you aren't using it already. Atom is a text editor also compatible with some of the languages we've learned so far (namely Python and Java). It's free to download and easy to use, and is also connected to GitHub, a code hosting platform that makes coding a whole lot easier (we might cover GitHub and the intricacies of Git in another lesson). However, you could use any text editor like [Notepad++](#) or [Sublime Text](#).

When you create an HTML file, it's important to remember to add the ".html" at the end to indicate that the file you are creating is to store HTML (and CSS and Javascript). Then, if you

navigate to the saved file and open it (by double-clicking), you'll be able to view your webpage in your browser, track your progress, and watch a framework become a full website!

### The Basics Summary:

An HTML document always has to contain the following declaration at the beginning (because as you'll see, it defines the type of the document): `<!DOCTYPE html>`. Notice that this is one of the rare examples in HTML where there is no end tag.

HTML elements are defined as having a start and end tag sandwiching content in the middle. It is common to embed tags in other tags—this is because an element either has multiple functions (like it is an image and a link) or it is being incorporated into a larger tag (like a link within a paragraph). Below are some of the necessary tags you'll find at the top of a HTML page. They are displayed `<open tag></close tag>` format for your convenience.

- `<html></html>` is the root element of any HTML page and holds all of the content that is within your page besides the `<!DOCTYPE html>` tag, along with any other CSS elements that you include with your HTML.
- `<head></head>` contains the meta information that you need to successfully run your webpage, which includes but is not limited to:
  - Author of the page
  - A brief description of the page
  - Defined charset, or the characters used in the webpage
  - Internal CSS style sheet\*

The stuff in the head tag will not be displayed on the page itself.

- `<title>Title</title>` specifies the title of the page, which you can find as the displayed name in the tab. The text (or string, if you remember what that is) containing the title goes between the opening and closing tag.
- `<body></body>` is the tag that will most likely contain the most stuff besides the `<html>` tag. It holds the visible content of the page, including: headings, paragraphs, images, links, lists, tables, classes, and tags.

*\*to be discussed in greater detail in the CSS unit*

Some tags like the `<title>` are not essential for your program to run, but it's good to include all of them on your code, especially in the beginning to develop good habits. We'll go into more specific parts later, like with inclusion of CSS elements in HTML code, but for now, let's just go

into a little more detail about some of the basic HTML tags that you will need to make your basic, barebone exoskeleton.

## Headings Tag

Headings are exactly what they sound like: they are the large, often bolded text that precedes every section of a section or subsection of your content. There are six “levels” of headings ranging from h1 to h6. Unnecessary? Maybe, but it might come in handy someday.

`<h1></h1>` is the largest heading possible, and will be used for the most important parts of the page—most likely the name of an entire page or even the entire website. If you’ve got anything else to say under your `<h1>`, like subtitles, you’d either use `<h2>` or `<h3>`, the next two levels of headings. `<h4>`, `<h5>`, and `<h6>` can be used for various other lower-importance headings wherever they are needed.

## Paragraph Tag

The paragraph element is where the bulk of your text will be stored. For example, if you’re creating an About Me page, all of that information will be stored inside the paragraph tag. The neat thing about paragraph tags is that they’ll store a whole bunch of other tags inside them—image tags, anchor tags, etc.

The best part about paragraph tags? You can put as much stuff in each paragraph tag as you want without worrying that pressing enter will cause an error (happens in Python with strings). Length isn’t important here.

Here’s an example of a paragraph tag:

```
<p>This is an example paragraph.  
If I press the enter key, it will show up as a space in the web  
page itself. It’s continuous all the way through until you  
create another paragraph or include a break tag, which will be  
discussed below. Don’t forget the closing tag before you go!</p>
```

The paragraph above would be displayed like this in the actual web page:

This is an example paragraph. If I press the enter key, it will show up as a space in the web page itself. It’s continuous all the way through until you create another paragraph or include a break tag, which will be discussed below. Don’t forget the closing tag before you go!

## Break Tags

`<br></br>` are tags that indicate or force a line break in the page and do not have end tags or content. You can incorporate them into paragraph tags, where they will serve as your Enter function.

If we take the paragraph above, here's how you would incorporate a break tag:

```
<p>This is an example paragraph.  
If I press the enter key, it will show up as a space in the web  
page itself. It's continuous all the way through until you  
create another paragraph or include a break tag, which will be  
discussed below. <br> Don't forget the closing tag before you  
go!</p>
```

In the actual webpage, you'd see this:

This is an example paragraph. If I press the enter key, it will show up as a space in the web page itself. It's continuous all the way through until you create another paragraph or include a break tag, which will be discussed below.

Don't forget the closing tag before you go!

## Anchor Tags

`<a></a>` defines hyperlinks, which can be used to link to external pages or other pages within the webpage. To tell the anchor where to go if clicked, there is a `href` attribute that goes in the opening anchor tag like so: `<a href=""></a>`. Your link would go within the quotation marks.

For the link to appear, you have to provide something for the user to click on, whether it's an image or a button or some words. The thing you want to be clicked goes between the start and close tags. If I wanted to create a link that linked to the very first lesson published by Coding Club, including both the link and a line of text for the user to click on, I would write:

```
<a href="https://docs.google.com/document/d/1zy_Ql8Dbv75z3Y5yQ  
-r6UfwyV9n-Qms74sU95Q03Sas/edit">First Lesson: Python  
Essentials</a>
```

On the webpage, the user would only see **First Lesson: Python Essentials**, but, once clicked, the anchor will take them to the document containing our first lesson (or to the “Access Required” page since we send out our lessons in PDFs).

### Example HTML Document

An example document including proper whitespace might look something like this:

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Example</title>
  </head>

  <body>
    <h1>Hello World! This is a heading.</h1>
    <p>The start of my first paragraph. <br>
    <a href="https://www.bishops.com">This is a link to
    the Bishop's website.</a></p>
  </body>
</html>
```

If you plugged this into an HTML file and ran it through Chrome, Microsoft Edge, or your default extension browser, you should be able to see this:



**Hello World! This is a heading.**

The start of my first paragraph.  
[This is a link to the Bishop's website.](https://www.bishops.com)

*Side note: You want to be using "" as your quotation marks--the normal Courier News ones don't work with Atom.*

**This concludes the first HTML lesson! We hope you were able to get the Hello World web page up and running; please email us if it didn't work or if you have any questions. We will be happy to help. Until lesson 9!**

**- Emma and Nicole <3**