

Introduction:

Hello everyone! It is the hope of everyone at CanCODE and EUREKA! that, despite recent events necessitating the closure of schools, we can still teach important digital skills to students in the Kamloops area.

This document will outline a detailed introduction to building websites with HTML. It will also be accompanied by an optional video tutorial that will walk through all steps outlined in this document. Before we get started, though, it is important that we make sure we have everything we need:

Supplies Needed:

A Computer
Internet Access
Pen and Paper
Notepad++ - The most recent version (at the top of the list)
Folder titled "HTML 1 Package" - Downloaded from the CanCode Workshops section of the EUREKA! website.

Tags

HTML describes the structure of the data in its file using a tag system.

These tags are a combination of english letters, words, and numbers surrounded by the "greater than" and "less than" symbols (< and >).

Tag usage can be compared to composing sentences in English. In English, sentences begin with a capital letter and end with a period. In HTML, "sentences" begin with an opening tag and end with a closing tag. Some examples are shown below:

<code><p>paragraph</p></code>	Paragraph tags with only the single word "paragraph" included inside the brackets.
<code><h2>heading</h2></code>	Heading tags depicting a size 2 heading with only the single word "heading" included inside the brackets.
<code> list item </code>	List tags for an unordered list which includes a single tagged list item including only the single phrase "list item".

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Note that the only difference between opening and closing tags is the forward slash (/). A `<p>` tag, for example, “opens” with a `<p>` at the start of a sentence, and “closes” with a `</p>` at the end of the sentence. Everything in between is part of the sentence or word that is displayed.

HTML does not care about whitespace (spaces, enter, etc.), nor does it care about capitalization. Meaning that the two examples below are functionally the same:

<pre><html> <body> <p>content</p> </body> </html></pre>	<pre><HTML><BODY><P>content</P></BODY> </HTML></pre>
---	--

In HTML, things are written in the style of the cell on the left instead of the style of the cell on the right for readability. The HTML tags in the left cell are included in a structure called a “tree”. Because of this, it is possible to include tags inside of tags, inside of tags. All websites are built with this structure.

Tags in an HTML “tree” structure are ordered from most to least specific.

As an example, three tags that describe a straw could be `<straw>`, `<tube>`, and `<bendy>`.

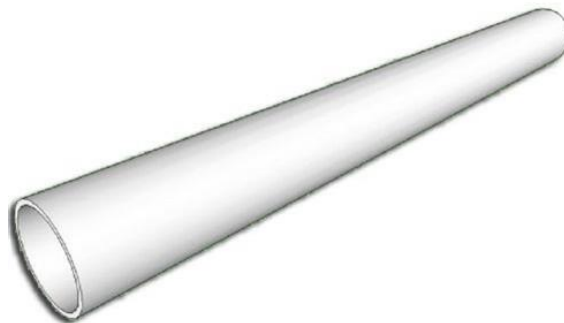
Written in this tree structure, these tags would look like:

```
<tube>
  <bendy>
    <straw>
    </straw>
  </bendy>
</tube>
```

This is because a straw is a more specific version of a bendy tube (i.e. not all bendy tubes are straws, all straws are bendy tubes). A bendy tube is a more specific version of a tube (i.e. not all tubes are bendy tubes). Each indentation marks the next “level” of the tree.

Activity #1 - Tagging Exercise

Consider the object below:



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This object is a PVC pipe. As we can use tags to describe objects, here is a list of tags related to the PVC pipe:

```
<tube>
<PVC pipe>
<white>
<pipe>
```

If these tags were ordered from least to most specific in the “tree” structure we have seen before (for neatness’ sake and to practice writing HTML), it would look like this:

```
<white>
  <tube>
    <pipe>
      <PVC pipe>
      </PVC pipe>
    </pipe>
  </tube>
</white>
```

Procedure:

Now consider the following object:



What tags could you come up with for this object? Write all the tags you can think of down, then order them in the same way as the example above (tree structure). You can find an example of tags that CanCODE has come up with and ordered for this image in

the resources folder when you're done.

Finally, find any object of your choice from your room, write down all the tags you can think of that apply, and finally order them in the tree structure method.

Attributes

HTML uses tags to tell the web browser what should be displayed. It does not, however, describe how the tagged words should look or provide extra details about them. To provide this information to the web browser, we use attributes.

Essentially, tags are **what** something is, attributes are details **about** that something.

There are many kinds of attributes that can be added to tags; some examples of attributes are width, height, title, and style.

There are also two different types of attributes - global and local attributes.

Local attributes are attributes that don't apply to everything. Examples of local attributes are the **href** attribute, which can only be used with **<a>** tags, and the **title** attribute, which can only be used with **<p>** tags. Global attributes are attributes that do apply to everything, such as the **style** attribute.

The HTML learning you will be doing over these two workshops will focus on the style attribute when attributes are involved. This attribute has its own syntax in HTML -- specifically, the HTML style attribute looks like this:

```
<tagname attribute="keyword:value"></tagname>
```

For example, if you wanted to make a paragraph red, the style attribute syntax would look like this:

```
<p attribute="color:red">This is a red paragraph.</p>
```

Adding multiple styles to a paragraph is slightly different - keyword value pairs must be separated by a semicolon (;) in this case. Here is an example:

```
<tagname attribute="keyword:value;other keyword:other value"></tagname>
```

For example, if you wanted to make a paragraph red but have the background of the paragraph be purple, the style attribute syntax would look like this:

```
<p attribute="color:red;background-color:purple">This is a red paragraph with a purple background.</p>
```

Activity #2 - Website Re-style Using Developer Console:

Now that we've covered the basics of tags, we will start our learning by modifying a pre-built website.

Procedure:

1. Open up your web browser and go to the following link: html.am/templates/simple-website-templates. Then select the template called "NightBeach".

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2. In the top right of the web browser click the three vertical dots beneath the "X" in Chrome and select More Tools -> Developer Tools to make the developer console appear.

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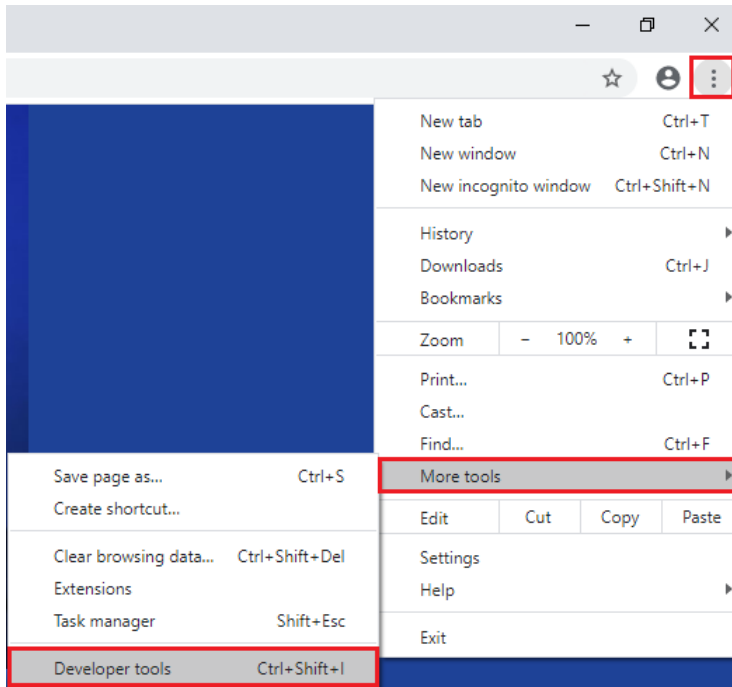
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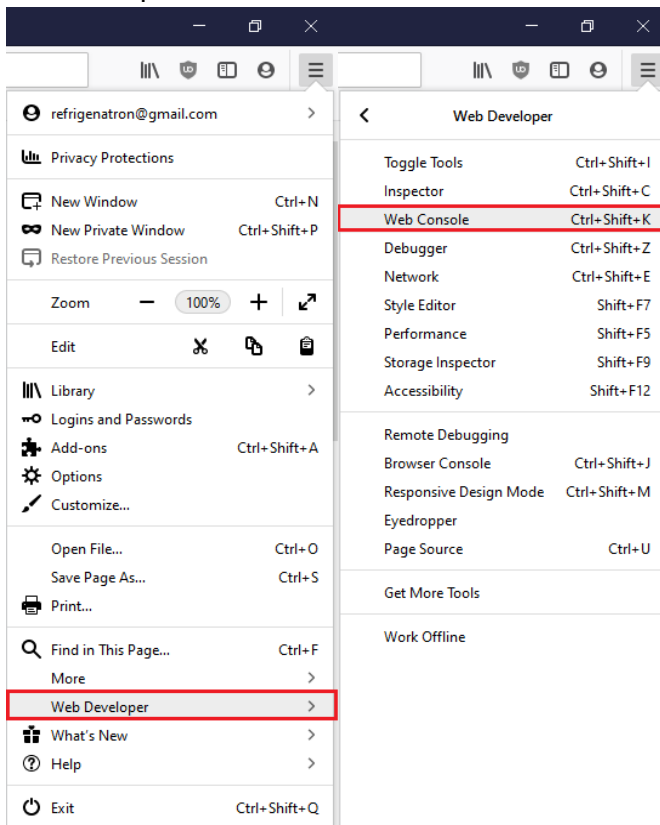
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If you are using firefox, click the three vertical lines beneath the “X” and select “Web Developer”. Next, select “Web Console” and then finally, in the menu that appears, select “Inspector”.



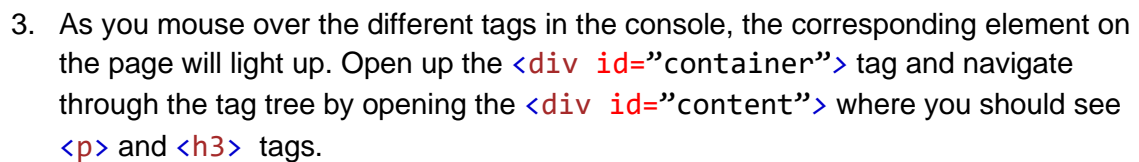
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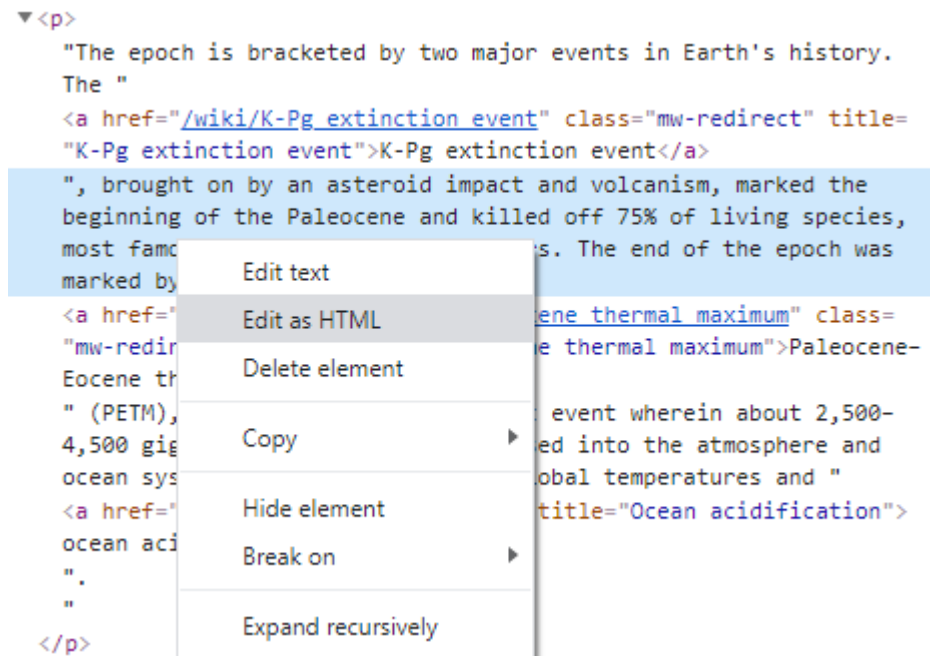
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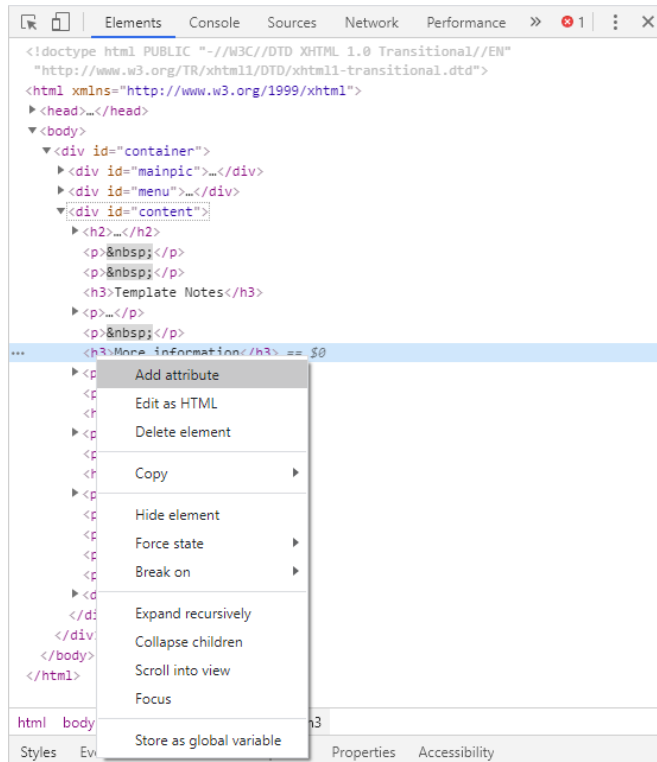
4. Clicking on one of the purple tags and hitting Backspace will delete it. Double clicking on any black text will allow you to change what it says. Go ahead and play around with this - at the very least, remove one of the `<p>` tags and change one of the headings.
5. To add tags to text content in the console, you must right click the text and select "Edit as HTML" or the tags won't be recognized.



The screenshot shows a web editor interface. On the left, a vertical pane displays HTML code. The code includes a paragraph tag `<p>` followed by text about Earth's history, a link tag `K-Pg extinction event`, and another paragraph tag `<p>` followed by text about the Paleocene and the Paleocene-Eocene Thermal Maximum (PETM). A right-click context menu is open over the text "The end of the epoch was", showing options: "Edit text", "Edit as HTML" (highlighted), "Delete element", "Copy", "Hide element", "Break on", and "Expand recursively". The main editor area on the right shows the rendered HTML content, including the link and the text about the PETM.

Go ahead and try adding more tags to in the developer console!

6. As discussed before, you can change the look of a tagged element using the “style” attribute. To do this, right click on a tag (an `<h3>` or `<h2>` is a good choice to start), and selecting “add new attribute”.



Then, follow the syntax below:

```
<h3 style="color:red">More information</h3>
```

This will make your heading coloured red - go ahead and try changing other tags to be different colours!

To add multiple keywords, try following the syntax below with a paragraph:

```
<p style="color:red ; font-size:75px">This is a paragraph.</p>
```

This will make your paragraph coloured red and sized at 75 pixels.

Remember, style is a global attribute, and therefore can be used on any tag.

7. In the HTML Part #1 Resources folder, you can find a file titled “Tag + Style Cheat Sheet”. This file contains a ton of relevant tags and style, as well as examples on how to write HTML code. Try some of the tags and styles on this sheet out in the developer console! The sheets have examples on how to write the code.

NOTE: Spelling and using the right symbols are both very important!

8. Once you are comfortable with how the styles work, there are some “HTML Challenges” below. An answer key can be found in the HTML Part #1 Resources folder when you are done.

Challenges:

Some of these have multiple solutions. As long as the end result looks the same, it is correct
(**NOTE:** Your sizes do not have to be the same as the sizes chosen in the answer key).

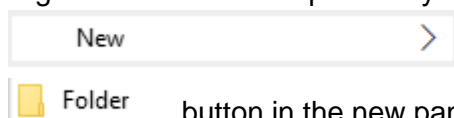
1. Pick any paragraph, have its background be black and its text be white
2. Pick any header, highlight it, and make it small.
3. Pick any paragraph, have its text appear vertically, and have the text start from the bottom.
4. Pick any paragraph, change the font size, strikethrough one word, and emphasize another word.
5. Pick any tag, and increase the spacing on all sides of the tag.
6. Change the cursor into a crosshair when it hovers over ANY part of the page.
7. Pick a word, make it bold, and give it a shadow.
8. Pick a paragraph, increase the space between the words, make the letters larger, and give it a border of any colour.
9. Pick any <div> and give it a shadow.

Activity #3: How to Create Your Own Webpage

Now that you are more familiar with how HTML works, you are going to try creating your own webpage.

Procedure:

1. Right click on a blank space on your desktop, then hover over the 'new'

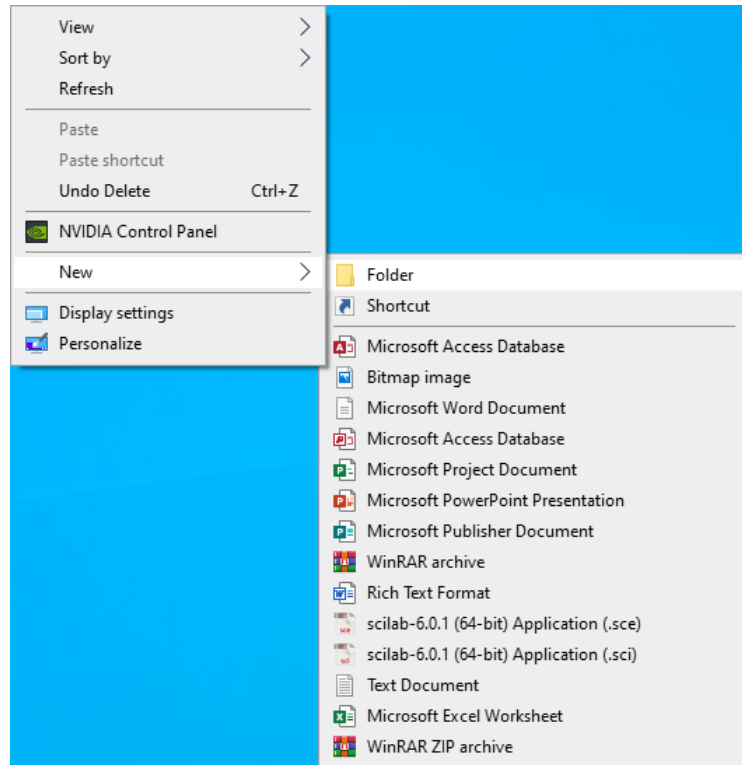


button, and click on the 'folder'

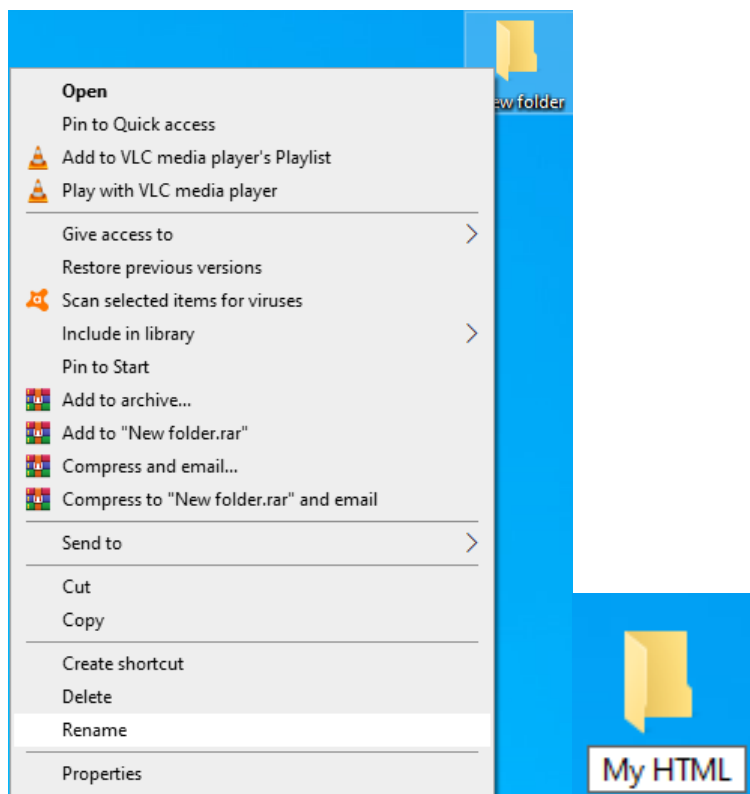
button in the new panel that has opened up.

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2. Once you have your new folder on your desktop (it should be named "New folder"), right click it and go to rename, then enter "My HTML" as the file name.

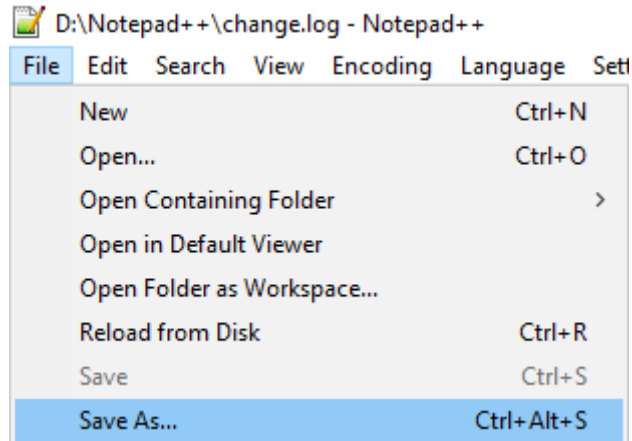


3. Once you have your folder set up on your desktop, open up Notepad++. Then go File (in the top left) -> Save As, name the file yourname.html (i.e, John.html), and save it

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into the folder you just made. You **need** to include the .html at the end or this will not work.

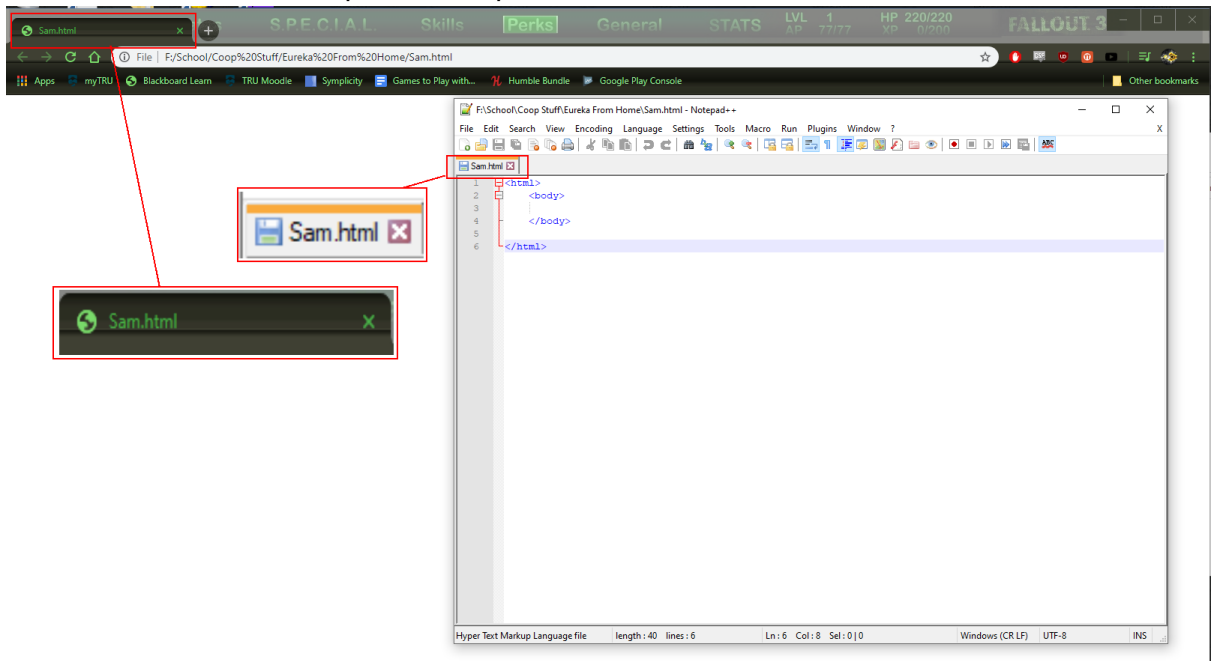


4. Add the following structure text to the file and then go to File (in the top left) -> Save:

```
1 <html>
2   <body>
3   .....
4   </body>
5
6 </html>
```

NOTE: If your text is not blue, that means you didn't save it as a .html file, or you misspelled something.

5. While keeping your Notepad++ file open, go into File Explorer or your desktop, find the "My HTML" file that you've made and double click on the yourname.html file. You should now have the file open in Notepad++ AND in the web browser, as below:



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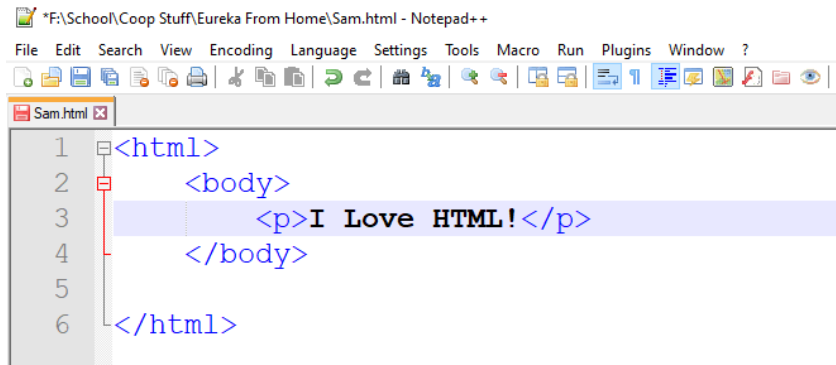
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6. Now it's time to write your own HTML code! To do so, add a `<p>` tag in between the two `<body>` tags with some text in it.

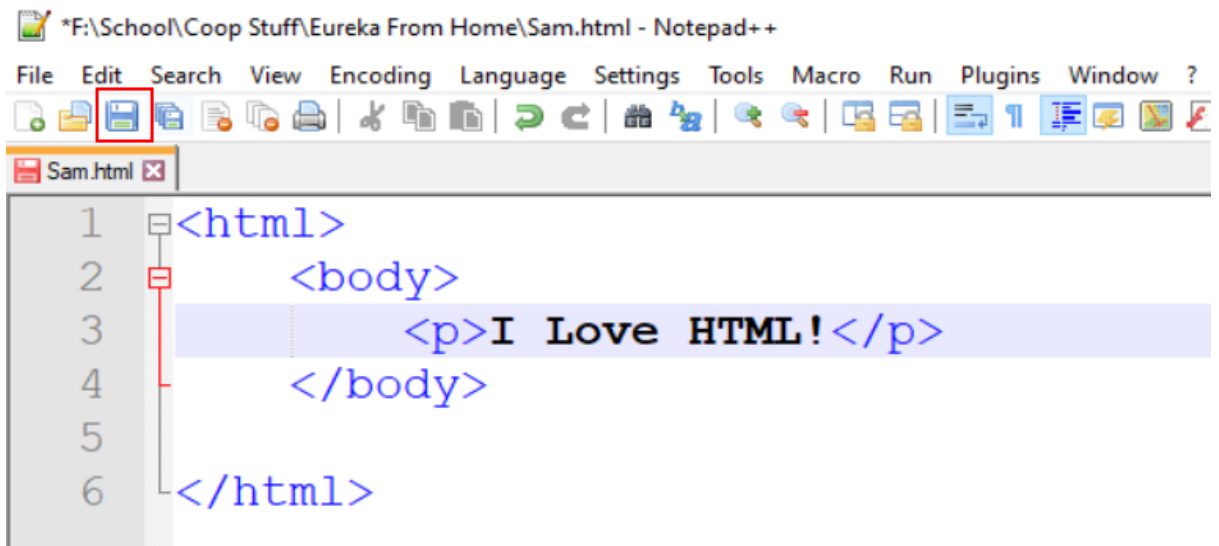
i.e. `<p>I Love HTML!</p>`

Then click "Save".

Then go to the web browser and refresh the page to see the changes you've made.



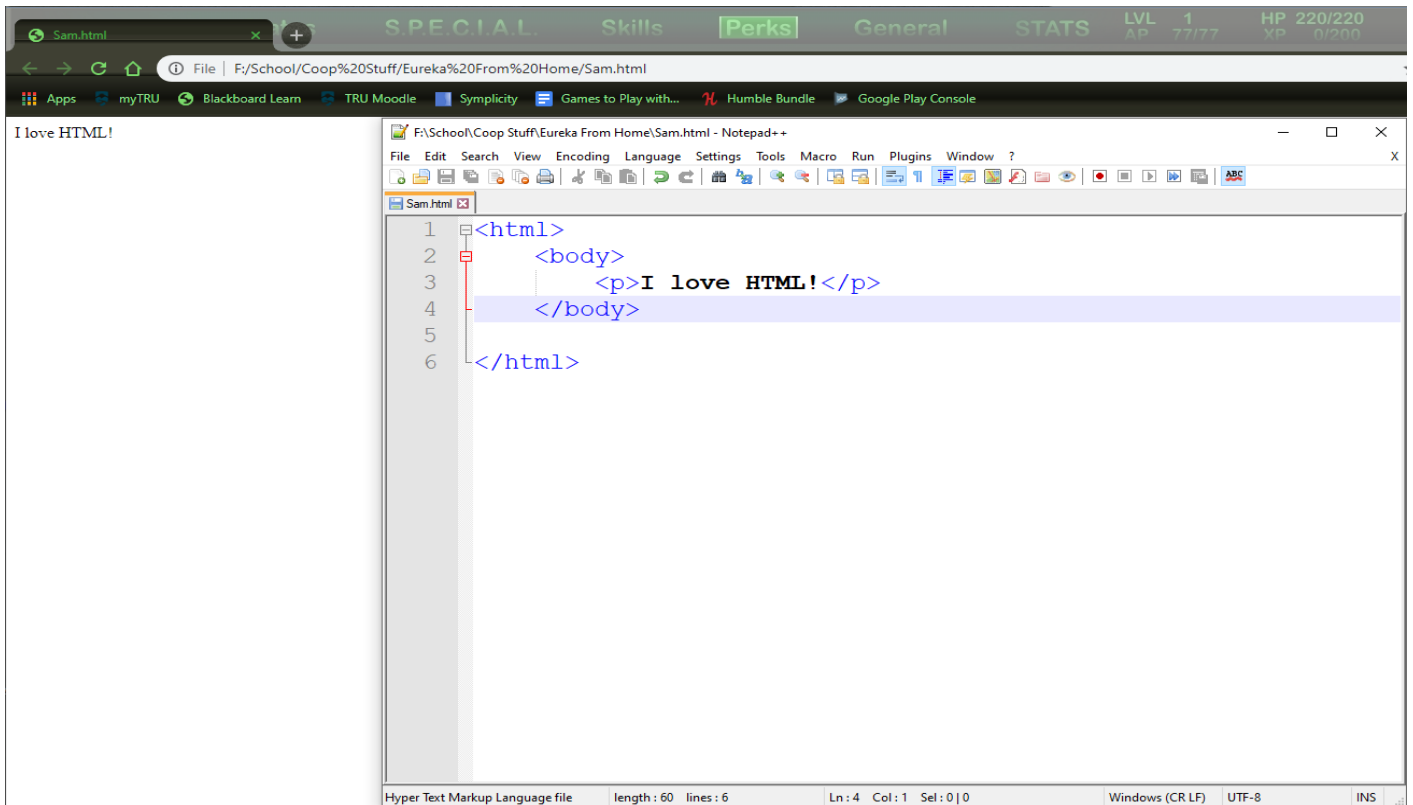
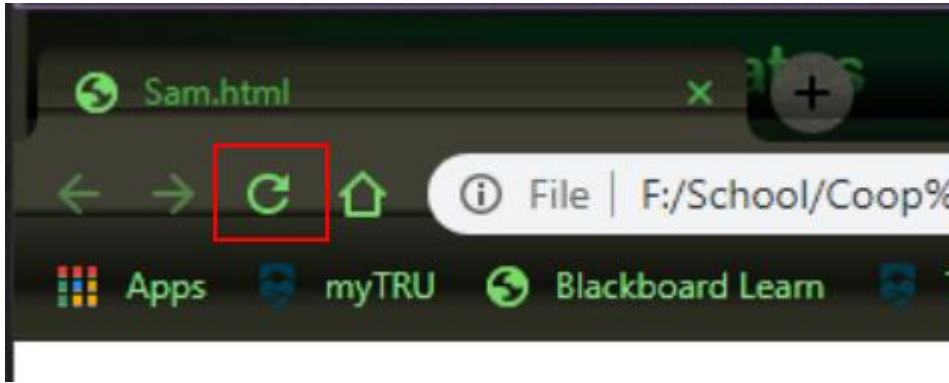
```
1 <html>
2   <body>
3     <p>I Love HTML!</p>
4   </body>
5
6 </html>
```



```
1 <html>
2   <body>
3     <p>I Love HTML!</p>
4   </body>
5
6 </html>
```

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Remember:

- a. Make a change in Notepad++
 - b. Click Save (NOT Save as, Save)
 - c. Refresh the webpage to see the change
7. You are going to start making your very own website now! This file we just made is going to be the main page of our website, so we need to add at least:
- a. A heading of your name using the appropriate tag (check the tags + styles cheat sheet). Change the font size to 100px.
 - b. An introductory paragraph describing yourself. We can replace the `<p>` tag we just made with this.
 - c. Some style! No one wants to look at a default style web page. Change the colours and font sizes of your first heading and paragraph.

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- d. An ordered list of your favourite foods with at least 3 items, using the `` and `` tags.
-
8. After you've done that, this is now your web page, meaning you can add whatever you want to it. You can always refer to the cheat sheets if you need a reminder on what tags and styles we know.



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