**Coding exploration**

**Singleton & non-Singleton tags**

**Singleton:**

Singleton tags, also known as self closing tags, do not require any closing tag. This means they stand alone and don’t contain any content. So in short, they are used for elements that don’t need a closing tag or don’t have any content in them. For example:

**<img src="image.jpg" alt="Image" />**

**<br />**

**<input type="text" />**

In the above example you see a few Singleton tags. Instead of <img- </img> you can simply use <img> or <img/> to indicate that it is a self closing tag.

**Non-Singleton tags:**

Non-Singleton tags consist of an opening and closing tag. The content between these tags defines the elements structure or content. For example:

**<div>**

**<p>This is a paragraph.</p>**

**</div>**

In the above example you can see that div has an opening tag (<div>) and a closing tag </div>. The p inside the div is also known as a Non–Singleton tag.

**Named character entities**

Some characters in HTML are reserved, like < and >. This means when you try to type </> in your text, the browser might mix them up with tags. Character entities are used to display the reserved characters. If you want to display < for example, you need to write &It or &#60.

**Named character entities:**

| non-breaking space | &nbsp; | &#160; |  |  |
| --- | --- | --- | --- | --- |
| < | less than | &lt; | &#60; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_ent_lt) |
| > | greater than | &gt; | &#62; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_ent_gt) |
| & | ampersand | &amp; | &#38; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_ent_amp) |
| " | double quotation mark | &quot; | &#34; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_ent_quot) |
| ' | single quotation mark (apostrophe) | &apos; | &#39; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_ent_apos) |
| ¢ | cent | &cent; | &#162; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_ent_cent) |
| £ | pound | &pound; | &#163; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_ent_pound) |
| ¥ | yen | &yen; | &#165; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_ent_yen) |
| € | euro | &euro; | &#8364; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_ent_euro) |
| © | copyright | &copy; | &#169; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_ent_copy) |
| ® | registered trademark | &reg; | &#174; |  |

**Semantic elements in html 5**

Semantic HTML elements are specific HTML tags that provide meaning and structure to the content within the web page. These elements describe the purpose or role of the content they enclose. It also makes it easier for the developer to understand the code and improve on it. Some semantic HTML 5 elements:

1. **<header>**: Represents the introductory section or container for the header content of a document or a section.
2. **<nav>**: Defines a section of navigation links, such as menus, lists of links, or table of contents.
3. **<main>**: Represents the main content of the document. It should be unique to the document and not contain any content that is repeated across a set of documents.
4. **<section>**: Represents a standalone section of content within a document. It usually has its own heading and can be thought of as a thematic grouping of content.
5. **<article>**: Represents a self-contained composition or independent piece of content that can be distributed or syndicated on its own. It could be a blog post, a news article, a forum post, etc.
6. **<aside>**: Represents content that is tangentially related to the main content, such as sidebars, pull quotes, or related links.
7. **<footer>**: Defines the footer section or container for the footer content of a document or a section. It typically contains information about the author, copyright, contact information, or links to related documents.
8. **<figure>** and <figcaption>: <figure> represents self-contained content, such as an image, diagram, illustration, or code snippet. <figcaption> is used to provide a caption or description for the <figure>.
9. **<time>**: Represents a specific time or range of time. It can be used to mark dates, times, or durations.
10. **<mark>**: Highlights or denotes a section of text as being of particular importance or relevance.

**White space in HTML CSS and in the DOM**

HTML:

In html white spaces are mostly ignored, meaning that multiple consecutive white spaces are treated as one. There are some exceptions like <pre> or <textarea> where the white space is preserved as it appears in the HTML source code.

CCS:

In CSS most white spaces are reserved. For example: in the CSS rule h1 { color:red; }, the spaces before and after the curly braces are insignificant, but the spaces between color and red are preserved. Also, unnecessary spaces in CSS can make the code harder to read and understand.

In the DOM:

The DOM represents the structure of an HTML document as a tree-like structure. Whitespace in the DOM includes text nodes that represent spaces, line breaks, and tabs found within the HTML markup.

Whitespace in the DOM can affect how text content is rendered, especially when using CSS for styling or when manipulating the DOM using JavaScript.