
Introduction to basic HTML elements.

Tools: IDE like VS Code and Web Browser like Google Chrome or Mozilla

Standard Procedure for Creating and Viewing an HTML document?

- Use a text editor such as VS Code to write the document.
- Save the file as filename.html on a PC. This is called the Document Source.
- Open the file that you have saved in any browser Off-Line
- Your HTML page should now appear just like any other Web page in the browser.
- You may now switch back and forth between the Source and the HTML Document
- Switch to IDE with the Document Source make changes.
- Save the document again.
- Switch back to the browser.
- Click on RELOAD and view the updated HTML Document.
- Switch to VS Code with the Document Source.

THEORY:

1. What is HTML?

- A series of tags that are integrated into a text document.
- A series of tags that are integrated into a text document.
- These look like: `<code>formatted text</code>` o `<code>` begins the formatting tag. o `</code>` ends the formatting tag.
- These tags are then read by a Browser, which translates the tags into the formatting that they represent

2. What are Tags?

- HTML tags are used to mark-up HTML elements.
- HTML tags are surrounded by the two characters `<` and `>`.
- The surrounding characters are called angle brackets .
- HTML tags normally come in pairs like `` and ``.
- The first tag in a pair is the start tag; the second tag is the end tag.
- The text between the start and end tags is the element content.
- HTML tags are not case sensitive; `` means the same as ``.

3. Structure Tags In HTML

HTML Tag

`<HTML></HTML>`

These tags begin and end an HTML document.

HEAD Tag

`<HEAD></HEAD>`

These tags are in the beginning of the document. Important information is stored in between these tags including: title, meta-data, styles, and programming scripts

TITLE Tag

`<TITLE></TITLE>`

These tags are in-between the HEAD tags and contain the text that appears in the title of the Web page.

BODY Tag

`<BODY></BODY>`

As you may have guessed, the BODY tags contain all the text in the body of the document.

1. HTML Basic Tags

These are the basic tags used in HTML5.

| Tag | Description |
|---------------------------------|--|
| <u><!DOCTYPE></u> | It defines the document type |
| <u><html></u> | It is the root of HTML document |
| <u><head></u> | It defines the head of an HTML document that contains non-visible data like metadata and other information |
| <u><body></u> | It defines the body of a webpage and contains everything that you see on the webpage |
| <u><h1> to <h6></u> | These are a group of heading tags used to create heading in a webpage |
| <u><p></u> | It defines the paragraph in a webpage |
| <u><!--...--></u> | It is used to write comments in HTML documents |

| | |
|-------------------|---|
| <u> </u> | It defines a line break |
| <u><hr></u> | It creates a horizontal line in a webpage |

2. Formatting tags

This is a list of formatting tags in HTML5. It gives us the ability to format the text without using [CSS](#).

| Tag | Description |
|-----------------------|---|
| <u></u> | It is used to define bold text |
| <u></u> | It is used to define important text, add more semantic meaning to the tag |
| <u><i></u> | It formats text in <i>italic form</i> |
| <u></u> | It represents stress emphasis on the text same as i tag |
| <u><u></u> | It underlines the text |

| | |
|----------------------|--|
| <u><sup></u> | It defines superscripted text |
| <u><sub></u> | It defines subscripted text |
| <u><pre></u> | It defines preformatted text |
| <u><small></u> | It defines smaller text |
| <u><abbr></u> | It defines abbreviation or an acronym |
| <u><code></u> | It defines a piece of computer code |
| <u><kbd></u> | It is used to display keyboard input |
| <u></u> | It is used to display the text that has been remove from the webpage |
| <u><ins></u> | It defines a word that has been inserted in the document. It underlines the word |
| <u><mark></u> | It is used to highlight specific text |

| | |
|---|---|
| <u><blockquote></u> | It is used for quotation of a text from another source |
| <u><s></u> | It defines the text that incorrect |
| <u><address></u> <u>></u> | It defines the address or contact of users on a webpage |
| <u><cite></u> | It defines the title of a journal, a book, a poem etc |
| <u><dfn></u> | It is used to specify a word that is going defined within the content |
| <u><meter></u> | It defines a meter scale with a given range and shows the currentvalue. It is also known as gauge |
| <u><progress></u> <u>s></u> | It represents the progress of work on the webpage |
| <u><q></u> | It creates quotation around the text |
| <u><samp></u> | It is used to define sample output or a computer program |

| | |
|-------------------------|--|
| <u><template></u> | It is used to hide a block of code when the page loads |
| <u><time></u> | It is used to define a specific time on the webpage |
| <u><var></u> | It is used to define some variable in a computer program or in a mathematical expression |

3. Image tags

The following listed tags are used for images.

| Tag | Description |
|---------------------------|---|
| <u></u> | It defines image on webpage |
| <u><figure></u> | It defines a self-contained container for image, code snippets, diagrams, etc |
| <u><figcaption></u> | It defines a caption for the <u><figure></u> |

| | |
|------------------------|--|
| <u><picture></u> | It defines a container to provide multiple resources for an image |
| <u><area></u> | It defines an area inside the image using coordinates |
| <u><map></u> | It defines a map on an image and creates a clickable area |
| <u><canvas></u> | It defines an area to draw something on the webpage using javascript |
| <u><svg></u> | It defines a container for SVG image |

4. Link or navigation tags

These tags are used to create any hyperlink, defining connection with other resources or creation navigation menu.

| Tag | Description |
|------------------|---|
| <u><a></u> | It defines a hyperlink to connect to other webpages |

| | |
|--------------------------|--|
| <u><link></u> > | It defines connects other document with HTML document or defines some relationship |
| <u><nav></u> > | It used to wrap navigation links |

5. List tags

| Tag | Description |
|-------------------|---|
| <u></u> | It defines an ordered list |
| <u></u> | It defines an unordered list |
| <u></u> | It defines an item in a list |
| <u><dl></u> | It defines a description list |
| <u><dt></u> | It defines name or term in description list |

| | |
|-------------------|--|
| <u><dd></u> | It defines description of item in the description list |
|-------------------|--|

6. Form and input tags

| Tag | Description |
|--|---|
| <u><form></u> | It is used to create a form on webpage |
| <u><input></u> | It defines input of different type |
| <u><label></u> | It defines label for the <input> element |
| <u><textarea></u> | It defines resizable multi-line plain text input |
| <u><select></u> <u>></u> | It provides a control to select from multiple options |
| <u><optgroup></u> <u>up></u> | It defines a group of options in <select> element |

| | |
|-------------------------------|---|
| <u><option></u> ≥ | It defines an item to select within <select> element |
| <u><fieldset></u> t> | It defines group of multiple labels and inputs |
| <u><legend></u> ≥ | It defines a caption for a <fieldset> |
| <u><datalist></u> | It provides a control to select among multiple options as well as to submit your own new option |
| <u><button></u> ≥ | It defines a button |

7. Table tags

| Tag | Description |
|----------------------|---|
| <u><table></u> | It defines a table |
| <u><thead></u> | It groups the head content of the table |

| | |
|-------------------------|---|
| <u><tbody></u> | It groups the body content of the table |
| <u><tfoot></u> | It groups the footer content of the table |
| <u><tr></u> | It defines a row in the table |
| <u><th></u> | It defines a header cells in table |
| <u><td></u> | It defines a cells in table |
| <u><caption></u> | It defines a caption for the table |
| <u><colgroup></u> | It defines a column group in the table |
| <u><col></u> | It gives a property to the column within the <colgroup> |

8. Media tags

| Tag | Description |
|-----|-------------|
|-----|-------------|

| | |
|----------------------------|--|
| <u><audio></u> | Used to define audio content on the webpage |
| <u><video></u> | Used to define video content on the webpage |
| <u><track></u> | It defines text track (subtitle) for the audio and video |
| <u><source></u> ≥ | It specify multiple resources fro the media like audio, video andpicture |

9. Meta tags

| Tag | Description |
|---------------------|--|
| <u><meta></u> | It defines metadata about the webpage (not visible to users) |
| <u><link></u> | It defines a base URL for all the relative URLs of the webpage |

10. Style and programming tags

| Tag | Description |
|-----|-------------|
|-----|-------------|

| | |
|-----------------------|---|
| <u><style></u> | It is used to provide CSS for the HTML elements of the document |
| <u><script></u> | It defines javascript program for the webpage |

11. General tags

| Tag | Description |
|------------------------|---|
| <u><div></u> | It defines a group of elements within the HTML document |
| <u></u> | It defines an inline section within the document |
| <u><header></u> | It defines header of the webpage or a section |
| <u><main></u> | It defines main content of the webpage |
| <u><footer></u> | It defines footer of the webpage or a section |
| <u><article></u> | It defines an article within the document |

| | |
|------------------------|--|
| <u><section></u> | It defines section in the webpage |
| <u><details></u> | It defines a section that user can view or hide |
| <u><summary></u> | It defines a visible part of the <details> element |

HTML Formatting:

https://www.w3schools.com/html/html_formatting.asp

- `` - Bold text
- `` - Important text
- `<i>` - Italic text
- `` - Emphasized text

HTML Links:

https://www.w3schools.com/html/html_links.asp

```
<a href="url">link text</a>
```

HTML Images:

https://www.w3schools.com/html/html_images.asp

```

```

HTML Tables:

https://www.w3schools.com/html/html_tables.asp

```
<table>
  <tr>
    <th>Company</th>
    <th>Contact</th>
    <th>Country</th>
  </tr>
  <tr>
    <td>Alfreds Futterkiste</td>
    <td>Maria Anders</td>
    <td>Germany</td>
  </tr>
  <tr>
    <td>Centro comercial Moctezuma</td>
    <td>Francisco Chang</td>
    <td>Mexico</td>
  </tr>
</table>
```


HTML Lists:

https://www.w3schools.com/html/html_lists.asp

```
<ul>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>
```

Block and Inline Elements:

https://www.w3schools.com/html/html_blocks.asp

Iframes:

https://www.w3schools.com/html/html_iframe.asp

```
<iframe src="demo_iframe.htm" height="200" width="300" title="Iframe
Example"></iframe>
```

Layout: (Will study more in CSS)

https://www.w3schools.com/html/html_layout.asp

- `<header>` - Defines a header for a document or a section
- `<nav>` - Defines a set of navigation links
- `<section>` - Defines a section in a document
- `<article>` - Defines an independent, self-contained content
- `<aside>` - Defines content aside from the content (like a sidebar)
- `<footer>` - Defines a footer for a document or a section
- `<details>` - Defines additional details that the user can open and close on demand
- `<summary>` - Defines a heading for the `<details>` element

Forms:

https://www.w3schools.com/html/html_forms.asp

```
<form action="/action_page.php">  
  <label for="fname">First name:</label><br>  
  <input type="text" id="fname" value="John"><br><br>  
  <input type="submit" value="Submit">  
</form>
```

<https://www.w3schools.com/html/exercise.asp>

CSS:

External:

```
<link rel="stylesheet" href="styles.css">
```

Internal:

```
<style>
body {
    background-color: linen;
}
h1 {
    color: maroon; margin-
    left: 40px;
}
</style>
```

Inline:

```
<p style="color:blue;">This text will display in blue.</p>
```

Comments:

```
/* This is a single-line comment */
/* This is a
multi-line
comment */
```

Selectors

| | |
|---------------|--|
| * | <i>all elements</i> |
| Div | <i>all div tags</i> |
| Div,p | <i>all divs and paragraphs</i> |
| div p | <i>paragraphs inside divs</i> |
| div > p | <i>all p tags, one level deep in div</i> |
| div + p | <i>p tags immediately after div</i> |
| div ~ p | <i>p tags preceded by div</i> |
| .classname | <i>all elements with class</i> |
| #idname | <i>element with ID</i> |
| Div.classname | <i>divs with certain classname</i> |
| div#idname | <i>div with certain ID</i> |
| #idname * | <i>all elements inside #idname</i> |

CSS works by associating rules with HTML elements. These rules govern how the content of specified elements should be displayed. A CSS rule contains two parts: a **selector** and a **declaration**.

```
SELECTOR
┌───┐
p {
  font-family: Arial;}
└──────────────────┘
DECLARATION
```

This rule indicates that all <p> elements should be shown in the Arial typeface.

Selectors indicate which element the rule applies to. The same rule can apply to more than one element if you separate the element names with commas.

Declarations indicate how the elements referred to in the selector should be styled. Declarations are split into two parts (a property and a value), and are separated by a colon.

CSS declarations sit inside curly brackets and each is made up of two parts: a **property** and a **value**, separated by a colon. You can specify several properties in one declaration, each separated by a semi-colon.

```
h1, h2, h3 {  
    font-family: Arial;  
    color: yellow;  
}
```

PROPERTY VALUE

This rule indicates that all <h1>, <h2> and <h3> elements should be shown in the Arial typeface, in a yellow color.

Properties indicate the aspects of the element you want to change. For example, color, font, width, height and border.

Values specify the settings you want to use for the chosen properties. For example, if you want to specify a color property then the value is the color you want the text in these elements to be.

USING EXTERNAL CSS FILE

<link>

The <link> element can be used in an HTML document to tell the browser where to find the CSS file used to style the page. It is an empty element (meaning it does not need a closing tag), and it lives inside the <head> element. It should use three attributes:

href

This specifies the path to the CSS file (which is often placed in a folder called `css` or `styles`).

type

This attribute specifies the type of document being linked to. The value should be `text/css`.

rel

This specifies the relationship between the HTML page and the file it is linked to. The value should be `stylesheet` when linking to a CSS file.

```
1  <!DOCTYPE html>  
2  <html>  
3  <head>  
4  | <title>Using External CSS</title>  
5  | <link href="css/styles.css" type="text/css" rel="stylesheet" />  
6  </head>  
7  <body>  
8  | <h1>  
9  | | Potatoes  
10 | </h1>  
11 | <p>  
12 | | There are dozens of different potato  
13 | | varieties. They are usually described as  
14 | | early, second early and maincrop.  
15 | </p>  
16 </body>  
17 </html>
```

styles.css

OnlineBookStore > styles > styles.css > h1

```
1  body {  
2  |   font-family: arial;  
3  |   background-color: ■ rgb(185,179,175);  
4  |   h1 {  
5  | |   color: ■ rgb(255,255,255);
```

Using Internal CSS

```
<!DOCTYPE html>
<html>
  <head>
    <title>Using Internal CSS</title>
    <style type="text/css">
      body {
        font-family: arial;
        background-color: rgb(185,179,175);}

      h1 {
        color: rgb(255,255,255);}
    </style>
  </head>
  <body>
    <h1>Potatoes</h1>
    <p>There are dozens of different potato
      varieties. They are usually described as
      early, second early and maincrop.</p>
  </body>
</html>
```

| | | |
|---------------------------|--|---|
| Universal Selector | Applies to all elements in the document | * {} Targets all elements on the page |
| Type Selector | Matches element names | h1, h2, h3 {} Targets the <h1> , <h2> and <h3> elements |
| Class Selector | Matches an element whose class attribute has a value that matches the one specified after the period (or full stop) symbol | .note {} Targets any element whose class attribute has a value of note p.note {} Targets only elements whose class attribute has a value of note |
| ID Selector | Matches an element whose id attribute has a value that matches the one specified after the pound or hash symbol | #introduction {} Targets the element whose id attribute has a value of introduction |
| Child Selector | Matches an element that is a direct child of another | li>a {} Targets any <a>elements that are children of an element (but not other <a> elements in the page) |
| Descendant Selector | Matches an element that is a descendent of another specified element (not just a direct child of that element) | p a {} Targets any elements that sit inside a element, even if there are other elements nested between them |
| Adjacent Sibling Selector | Matches an element that is the next sibling of another | h1+p {} Targets the first element after any |

| | | |
|--------------------------|---|--|
| | | <h1> element (but not other <p> elements |
| General Sibling Selector | Matches an element that is a sibling of another, although it does not have to be the directly preceding element | h1~p {} If you had two elements that are siblings of an element, this rule would apply to both |

How to specify Colors in css?

FOREGROUND COLOR

color

The color property allows you to specify the color of text inside an element. You can specify any color in CSS in one of three ways:

RGB VALUES

These express colors in terms of how much red, green and blue are used to make it up. For example: `rgb(100,100,90)`

HEX CODES

These are six-digit codes that represent the amount of red, green and blue in a color, preceded by a pound or hash # sign. For example: `#ee3e80`

COLOR NAMES

There are 147 predefined color names that are recognized by browsers. For example: `DarkCyan`

```
chapter-11/foreground-color.html
```

```

/* color name */
h1 {
  color: DarkCyan;
}
/* hex code */
h2 {
  color: #ee3e80;
}
/* rgb value */
p {
  color: rgb(100,100,90);
}

```

RESULT

In the same way you can set the background colour of each element by using background-color property.

SPECIFYING TYPFACESfont-family:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Font Family</title>
    <style type="text/css">
      body {
        font-family: Georgia, Times, serif;
      }
      h1, h2 {
        font-family: Arial, Verdana, sans-serif;
      }
      .credits {
        font-family: "Courier New", Courier, monospace;
      }
    </style>
  </head>
  <body>
    <h1>Briards</h1>
    <p class="credits">by Ivy Duckett</p>
    <p class="intro">The
      <a class="breed" href="http://en.wikipedia.org/wiki/Briard">briard</a>,
      or berger de brie, is a large breed of dog traditionally used as
      a herder and guardian of sheep...</p>
  </body>
</html>
```



```
body {
  font-family: Arial, Verdana, sans-serif;
  font-size: 12px;}
h1 {
  font-size: 200%;}
h2 {
  font-size: 1.3em;}
```

Font-weight:

```
.credits {
  font-weight: bold;
}
```

Font-style:

```
.credits {
  font-style: italic;
}
```

text-transform:

```
h1 {
  text-transform: uppercase;}
h2 {
  text-transform: lowercase;}
.credits {
  text-transform: capitalize;}
```

text-decoration:

```
.credits {
  text-decoration: underline;}
a {
  text-decoration: none;}
```

Line-height:

```
p {
  line-height: 1.4em;
}
```

text-align:

```
h1 {
  text-align: left;}
p {
  text-align: justify;}
.credits {
  text-align: right;}
```

vertical-align:

```
#six-months {
  vertical-align: text-top;} #one-
year {
  vertical-align: baseline;} #two-
years {
  vertical-align: text-bottom;}
```