**HTML**

* **How to do Setup environment for writing html programs:**

1. Download VS Code and Install it.
2. Install Prettier and Live Server Extension in VS Code.

* **What is HTML?**

**HTML** stands for **Hyper Text Markup Language**, which is the most widely used language on Web to develop web pages.

Originally, **HTML** was developed with the intent of defining the structure of documents like headings, paragraphs, lists, and so forth to facilitate the sharing of scientific information between researchers. Now, HTML is being widely used to format web pages with the help of different tags available in HTML language.

I will list down some of the key advantages of learning HTML:

* **Create Web site** - You can create a website or customize an existing web template if you know HTML well.
* **Become a web designer** - If you want to start a career as a professional web designer, HTML and CSS designing is a must skill.
* **Understand web** - If you want to optimize your website, to boost its speed and performance, it is good to know HTML to yield best results.
* **Learn other languages** - Once you understand the basic of HTML then other related technologies like JavaScript, php, or angular are become easier to understand.

HTML uses "markup" to annotate text, images, and other content for display in a Web browser. HTML markup includes special "elements" such as <head>, <title>, <body>, <header>, <footer>, <article>, <section>, <p>, <div>, <span>, <img>, <aside>, <audio>, <canvas>, <datalist>, <details>, <embed>, <nav>, <search>, <output>, <progress>, <video>, <ul>, <ol>, <li> and many others.

An HTML element is set off from other text in a document by "tags", which consist of the element name surrounded by "<" and ">". The name of an element inside a tag is case-insensitive. That is, it can be written in uppercase, lowercase, or a mixture. For example, the <title> tag can be written as <Title>, <TITLE>, or in any other way. However, the convention and recommended practice is to write tags in lowercase.

* **What's in the head? Metadata in HTML**

The head of an HTML document is the part that is not displayed in the web browser when the page is loaded. It contains information such as the page <title>, links to CSS (if you want to style your HTML content with CSS), links to custom favicons, and metadata (data about the HTML, such as who wrote it, and important keywords that describe the document).

* **Creating hyperlinks**

Hyperlinks are really important — they are what makes the web a web. This article shows the syntax required to make a link and discusses best practices for links.

* **Document and website structure**

As well as defining individual parts of your page (such as "a paragraph" or "an image"), HTML is also used to define areas of your website (such as "the header", "the navigation menu", or "the main content column"). This article looks into how to plan a basic website structure and how to write the HTML to represent this structure.

* **HTML Tags**

As told earlier, HTML is a markup language and makes use of various tags to format the content. These tags are enclosed within angle braces <Tag Name>. Except few tags, most of the tags have their corresponding closing tags. For example, <html> has its closing tag </html> and <body> tag has its closing tag </body> tag etc.

**Semantics Tags**

1. <h1>… <h2>
2. <p>
3. <a>
4. <ul> & <ol>
5. <table>, <tr>, <td>
6. <img>
7. <form>
8. <input>

**Structure Tags**

1. <html>
2. <head> &<body>
3. <header>
4. <main>
5. <aside>
6. <footer>
7. <article>
8. <section>
9. <nav>

**Formatting Tags**

1. <b>
2. <i>
3. <u>
4. <s>
5. <strong>
6. <em>
7. <sup> & <sub>
8. <pre>
9. <code>

# **Semantics Tags:**

1. **Heading Tags**

Any document starts with a heading. You can use different sizes for your headings. HTML also has six levels of headings, which use the elements <h1>, <h2>, <h3>, <h4>, <h5>, and <h6>. While displaying any heading, browser adds one line before and one line after that heading.

Example : <h1>This is heading 1</h1>

<h2>This is heading 2</h2>

<h3>This is heading 3</h3>

<h4>This is heading 4</h4>

<h5>This is heading 5</h5>

<h6>This is heading 6</h6>

1. **Paragraph Tag**

The <p> tag offers a way to structure your text into different paragraphs. Each paragraph of text should go in between an opening <p> and a closing </p> tag as shown below in the

example −

<p>Here is a first paragraph of text.</p>

<p>Here is a second paragraph of text.</p>

<p>Here is a third paragraph of text.</p>

1. **Anchor Tag**

The <a> HTML element (or anchor element), with its **href** attribute, creates a hyperlink to web pages, files, email addresses, locations in the same page, or anything else a URL can address.

Content within each <a> should indicate the link's destination. If the **href** attribute is present, pressing the enter key while focused on the <a> element will activate it.

Example:

<li><a href="https://example.com">Website</a></li>

<li><a href="mailto:m.bluth@example.com">Email</a></li><li><a href="tel:+917205374495">Phone</a></li>

Output:

* [Website](https://example.com/)
* [Email](mailto:m.bluth@example.com)
* [Phone](tel:+123456789)

1. **Ordered List Tag**

The <ol> HTML element represents an ordered list of items — typically rendered as a numbered list.

Example:

<ol>

<li>Mix flour, baking powder, sugar, and salt.</li>

<li>In another bowl, mix eggs, milk, and oil.</li>

<li>Stir both mixtures together.</li>

<li>Fill muffin tray 3/4 full.</li>

<li>Bake for 20 minutes.</li></ol>

Output:

1. Mix flour, baking powder, sugar, and salt.
2. In another bowl, mix eggs, milk, and oil.
3. Stir both mixtures together.
4. Fill muffin tray 3/4 full.
5. Bake for 20 minutes.
6. **Unordered List Tag**

The <ul> HTML element represents an unordered list of items, typically rendered as a bulleted list.

Example:

<ul> <li>Milk</li>

<li> Cheese

<ul>

<li>Blue cheese</li>

<li>Feta</li> </ul> </li>

</ul>

Output:

* Milk
* Cheese
  + Blue cheese
  + Feta

1. **Table Tag**

The <table> HTML element represents tabular data — that is, information presented in a two-dimensional table comprised of rows and columns of cells containing data.

1. **Table Data Cell element**

The <td> HTML element defines a cell of a table that contains data. It participates in the table model.

1. **Table Row element**

The <tr> HTML element defines a row of cells in a table. The row's cells can then be established using a mix of <td> (data cell) and <th> (header cell) elements.

Example:

<table>

<tr>

<td>Name</td>

<td>Rollno.</td>

<td>Branch</td>

</tr>

<tr>

<td>Rahul</td>

<td>26</td>

<td>MCA</td>

</tr>

<tr>

<td>Sriniu</td>

<td>27</td>

<td>MCA</td>

</tr>

</table>

1. **Image Embed element**

The <img> HTML element embeds an image into the document.

Example:

<img

class="fit-picture"

src="/media/cc0-images/grapefruit-slice-332-332.jpg"

alt="Grapefruit slice atop a pile of other slices" />

1. **Form element**

The <form> HTML element represents a document section containing interactive controls for submitting information.

# **Structure Tags**

1. **<html>: The HTML Tag**

The <html> HTML element represents the root (top-level element) of an HTML document, so it is also referred to as the root element. All other elements must be descendants of this element.

1. **<head>: The Document Tag**

The <head> HTML element contains machine-readable information (metadata) about the document, like its title, scripts, and style sheets.

Example:

<html lang="en-US">

<head>

<meta charset="UTF-8" />

<meta name="viewport" content="width=device-width" />

<title>Document title</title>

</head>

</html>

1. **<header>: The Header Tag**

The <header> HTML element represents introductory content, typically a group of introductory or navigational aids. It may contain some heading elements but also a logo, a search form, an author name, and other elements.

Example:

<header>

<a class="logo" href="#">Cute Puppies Express!</a>

</header>

1. **<main>: The Main Tag**

The <main> HTML element represents the dominant content of the <body> of a document. The main content area consists of content that is directly related to or expands upon the central topic of a document, or the central functionality of an application.

Example:

<main>

<p>Geckos are a group of usually small, usually nocturnal lizards. They are found on every continent except Antarctica. </p>

<p>Many species of gecko have adhesive toe pads which enable them to climb walls and even windows.</p>

</main>

1. **<aside>: The Aside Tag**

The <aside> HTML element represents a portion of a document whose content is only indirectly related to the document's main content. Asides are frequently presented as sidebars or call-out boxes.

Example:<aside>

<p>The Rough-skinned Newt defends itself with a deadly neurotoxin.</p>

</aside>

1. **<footer>: The Footer Tag**

The <footer> HTML element represents a footer for its nearest ancestor sectioning content or sectioning root element. A <footer> typically contains information about the author of the section, copyright data or links to related documents.

Example:

<footer>

<p>© 2018 Gandalf</p>

</footer>

1. **<article>: The Article Contents Tag**

The <article> HTML element represents a self-contained composition in a document, page, application, or site, which is intended to be independently distributable or reusable (e.g., in syndication). Examples include: a forum post, a magazine or newspaper article, or a blog entry, a product card, a user-submitted comment, an interactive widget or gadget, or any other independent item of content.

Example:

<article class="forecast">

<h1>Weather forecast for Seattle</h1>

<article class="day-forecast">

<h2>03 March 2018</h2>

<p>Rain.</p>

</article>

<article class="day-forecast">

<h2>04 March 2018</h2>

<p>Periods of rain.</p>

</article>

<article class="day-forecast">

<h2>05 March 2018</h2>

<p>Heavy rain.</p>

</article>

</article>

1. **<nav>: The Navigation Tag**

The <nav> HTML element represents a section of a page whose purpose is to provide navigation links, either within the current document or to other documents. Common examples of navigation sections are menus, tables of contents, and indexes.

Example: <nav class="crumbs">

<ol>

<li class="crumb"><a href="#">Bikes</a></li>

<li class="crumb"><a href="#">BMX</a></li>

<li class="crumb">Jump Bike 3000</li>

</ol>

</nav>

1. **<section>: The Section Tag**

The <section> HTML element represents a generic standalone section of a document, which doesn't have a more specific semantic element to represent it. Sections should always have a heading, with very few exceptions.

Example:<h1>Choosing an Apple</h1>

<section><h2>Introduction</h2>

<p>This document provides a guide to help with the important task of choosing the correct Apple.</p>

</section>

# **Formatting Tags**

* **<b>: The Bring Attention To element**

The <b> HTML element is used to draw the reader's attention to the element's contents, which are not otherwise granted special importance. This was formerly known as the Boldface element, and most browsers still draw the text in boldface. However, you should not use <b> for styling text or granting importance. If you wish to create boldface text, you should use the CSS font-weight property. If you wish to indicate an element is of special importance, you should use the <strong> element.

Example:

<p>

The two most popular science courses offered by the school are <b class="term">chemistry</b> (the study of chemicals

and the composition of substances) and <b class="term">physics</b> (the study of the nature and properties of matter

and energy).

</p>

* **<i>: The Idiomatic Text element**

The <i> HTML element represents a range of text that is set off from the normal text for some reason, such as idiomatic text, technical terms, taxonomical designations, among others. Historically, these have been presented using italicized type, which is the original source of the <i> naming of this element.

Example:

<p>I looked at it and thought <i>This can't be real!</i></p>

<p><i>Musa</i> is one of two or three genera in the family <i>Musaceae</i>; it includes bananas and plantains.</p>

<p>

The term <i>bandwidth</i> describes the measure of how much information can pass through a data connection in a given

amount of time.

</p>

* **<s>: The Strikethrough element**

The <s> HTML element renders text with a strikethrough, or a line through it. Use the <s> element to represent things that are no longer relevant or no longer accurate. However, <s> is not appropriate when indicating document edits; for that, use the <del> and <ins> elements, as appropriate.

Example:

<p><s>There will be a few tickets available at the box office tonight.</s></p>

<p>SOLD OUT!</p>

* **<u>: The Underline element**

The <u> HTML element represents a span of inline text which should be rendered in a way that indicates that it has a non-textual annotation. This is rendered by default as a simple solid underline, but may be altered using CSS.

Example: <p>You could use this element to highlight <u>speling</u>

mistakes, so the writer can <u>corect</u> them.</p>

* **<strong>: The Strong Importance element**

The <strong> HTML element indicates that its contents have strong importance, seriousness, or urgency. Browsers typically render the contents in bold type.

Example:<p>

... the most important rule, the rule you can never forget, no matter how much he cries, no matter how much he begs:

<strong>never feed him after midnight</strong>.</p>

* **<em>: The Emphasis element**

The <em> HTML element marks text that has stress emphasis. The <em> element can be nested, with each level of nesting indicating a greater degree of emphasis.

Example: <p>Get out of bed <em>now</em>!</p>

<p>We <em>had</em> to do something about it.</p>

<p>This is <em>not</em> a drill!</p>

* **<sub>: The Subscript element**

The <sub> HTML element specifies inline text which should be displayed as subscript for solely typographical reasons. Subscripts are typically rendered with a lowered baseline using smaller text.

Example:

<p>Almost every developer's favorite molecule is C<sub>8</sub>H<sub>10</sub>N<sub>4</sub>O<sub>2</sub>, also known as

"caffeine."

</p>

* **<sup>: The Superscript element**

The <sup> HTML element specifies inline text which is to be displayed as superscript for solely typographical reasons. Superscripts are usually rendered with a raised baseline using smaller text.

Example:

<p>The <em>Pythagorean theorem</em> is often expressed as the following equation:</p>

<p>

<var>a<sup>2</sup></var> + <var>b<sup>2</sup></var> = <var>c<sup>2</sup></var>

</p>

* **<pre>: The Preformatted Text element**

The <pre> HTML element represents preformatted text which is to be presented exactly as written in the HTML file. The text is typically rendered using a non-proportional, or monospaced, font. Whitespace inside this element is displayed as written.

* **<code>: The Inline Code element**

The <code> HTML element displays its contents styled in a fashion intended to indicate that the text is a short fragment of computer code. By default, the content text is displayed using the user agent's default monospace font.

Example:

<p>

The <code>push()</code> method adds one or more elements to the end of an array and returns the new length of the array.

</p>

# **Emmet Documentation**

**Child:** > **(nav>ul>li)**

<nav>

<ul>

<li></li>

</ul>

</nav>

**Sibling: + (div+p+bq)**

<div></div> <p></p> <blockquote></blockquote>

**Climb-up: ^ (div+div>p>span+em^bq)**

<div></div>

<div>

<p><span></span><em></em></p>

<blockquote></blockquote>

</div>div+div>p>span+em^^bq

**Grouping: () (div>(header>ul>li\*2>a)+footer>p)**

<div>

<header>

<ul>

<li><a href=""></a></li>

<li><a href=""></a></li>

</ul>

</header>

<footer>

<p></p>

</footer>

</div>div

Multiplication: \* (**ul>li\*5**)

<ul>

<li></li>

<li></li>

<li></li>

<li></li>

 <li></li>

</ul>

**Item numbering: $ (ul>li.item$\*5)**

<ul>

<li class="item1"></li>

<li class="item2"></li>

<li class="item3"></li>

<li class="item4"></li>

<li class="item5"></li>

</ul>

# **The Table elements**

* **<table>: Table Tag**

The <table> HTML element represents tabular data — that is, information presented in a two-dimensional table comprised of rows and columns of cells containing data.

Example:

<table>

<thead>

<tr>

<th colspan="2">The table header</th>

</tr>

</thead>

<tbody>

<tr>

<td>The table body</td>

<td>with two columns</td>

</tr>

</tbody>

</table>

* **<tbody>: Tbody Tag**

The <tbody> HTML element encapsulates a set of table rows (<tr> elements), indicating that they comprise the body of the table (<table>).

Example:

<table>

<caption>

Council budget (in £) 2018

</caption>

<thead>

<tr>

<th>Items</th>

<th scope="col">Expenditure</th>

</tr>

</thead>

<tbody>

<tr>

<th scope="row">Donuts</th>

<td>3,000</td>

</tr>

<tr>

<th scope="row">Stationery</th>

<td>18,000</td>

</tr>

</tbody>

</table>

* **<thead>: Thead Tag**

The <thead> HTML element defines a set of rows defining the head of the columns of the table.

* **<th>**: **Theader Tag**

The <th> HTML element defines a cell as the header of a group of table cells. The exact nature of this group is defined by the scope and headers attributes.

* **<tfoot>**: **Tfoot Tag**

The <tfoot> HTML element defines a set of rows summarizing the columns of the table.

* **<td>**: **Tdata Tag**

The <td> HTML element defines a cell of a table that contains data. It participates in the table model.

* **<tr>**: **TRow Tag**

The <tr> HTML element defines a row of cells in a table. The row's cells can then be established using a mix of <td> (data cell) and <th> (header cell) elements.