HTML – Hyper Text Markup Language

HTML

- It is a Markup Language which is used to build webpages.
- It is implement through Elements.
- It works with **CSS** (for design) and **JavaScript** (for interactivity).

HTML Elements

- An HTML element is everything from the opening tag to the closing tag, including the content in between.
  Ex: Hello, World!

HTML Attributes –

- HTML Elements can Have Attributes
- Attributes provides additional information about the element.
  Ex:

```
<html lang =”en”>
    Language is English
</html>
```

<!Doctype html>

- Document to be HTML 5.

HTML Page Structure:

```
<!DOCTYPE html>  ←---------- Tells the version of the HTML
<html>           ←----------HTML Root Element
    <head>       ←----------Used to contain Page HTML metadata
        <title>page title</title>  ←----------Title of Html page
    </head>
    <body>       ←---------- hold content
        <h1>hi</h1>  ←---------- Holding head content
    </body>
</html>
```

HTML 4 vs HTML 5

HTML 4:

Release Date: 1997

Doctype : Lengthy & Complex

Vector Graphic : requires plug-in like Flash

Audio & Video : requires plug-in like Flash

Semantics : Limited Semantic Elements

Graphics : Limited External Plugins

Storage : Cookies for Client-side Storage

Mobile Support: Limited

Form Controls : Basic Control

Scripting : Heavy Reliant on External.

Drag & Drop Features not available

HTML 5:

Release Date: Oct -14

Doctype : <!DOCTYPE html>

Vector Graphic : Native Support <svg>

Audio & Video : Native Support <audio> & <video>

Semantics : Rich Semantic Elements like <article>,<nav>,<footer>

Graphics : Canvas API for 2D/3D Graphics

Storage : Local Storage, Session Storage

Mobile Support: Enhanced with mobile optimization

Form Control : New Form Controls like date, time, colour picker

Scripting : More Integrated Scripted Capabilities

Drag & Drop Features available

HTML – Hyper Text Markup Language

Tags

Heading Tag:

- Heading Tags are used in HTML to define headings and subheadings on a webpage.
- They range from `**<h1>**` to `**<h6>**`, where `**<h1>**` is the highest (or most important) level heading and `**<h6>**` is the lowest (or least important).

Default Sizes for Each Heading Tag

1 em = 16 pixels

`**<h1>**`**:** 2 em (32px)

`**<h2>**`**:** 1.5 em (24px)

`**<h3>**`**:** 1.17 em (18.72px)

`**<h4>**`**:** 1 em (16px)

`**<h5>**`**:** 0.83 em (13.28px)

`**<h6>**`**:** 0.67 em (10.72px)

Paragraph Tag :

- The `<P>` tag in HTML stands for paragraph.
- It is used to define and group a block of text as a paragraph, separating it from other blocks of text on a webpage.

Formatting Tag :

- Formatting tags are used in HTML to change the appearance of text or content, applying different styles such as bold, italic, underline, and more.

List of Formatting Tags:

1. **<b>** - Displays the content in bold format.
2. **** - Displays the content in bold format, and conveys that the information is important.
3. **<i>** - Displays the content in italic format.
4. **<emp>** - Displays the content in italic format and adds emphasis, an alternative to the `<i>` *tag.*
5. ***<u>*** - *Underlines the content.*

6. ***<ins>*** *- Underlines the content, an alternative to the `<u>` tag, often used to indicate inserted text.*
7. ***<strike>*** *- Strikes off (crosses out) the content.*
8. **<del>** - Strikes off the content, an alternative to the `<del>` tag, often used to indicate deleted text.
9. **<q>** - Provides quotations around the content.
10. **<mark>** - Highlights the content with a yellow background color.
11. **<big>** - Displays the content with a larger font size.
12. **<small>** - Displays the content with a smaller font size.
13. **<sup>** - Displays the content as superscript, raising it above the baseline.
14. **<sub>** - Displays the content as subscript, lowering it below the baseline.
15. **<code>** - Displays the content in the "monospace" font family, often used for code snippets.
16. **<pre>** - Preserves both spaces and line breaks, displaying content exactly as for preformatted written, often used text.

LIST

- HTML lists allow you to group a set of related items together in a structured format.
- Lists in HTML are categorized into three types:

1) Ordered List
2) Unordered List
3) Description List

1.Ordered List:

Used to group related items in a sequential, numbered format. It is often referred to as a Number List.

Tags:

** -** Denotes the start of an ordered list.

** -** Indicates each list item within the ordered list.

type: Specifies the type of numbering sequence.

- Values:

- 1 (default) - Numeric (1, 2, 3, ...)

- A - Uppercase letters (A, B, C, ...)

- a - Lowercase letters (a, b, c, ...)

- I - Uppercase Roman numerals (I, II, III, ...)

- i - Lowercase Roman numerals (i, ii, iii, ...)

- start: Specifies the starting number of the list.

- Values: - 1 (default) - Any other number to start the list from.

- reversed: Reverses the order of the list items.

2. Unordered List

Used to display a set of related items without any particular order. Commonly referred to as a Bulleted List.

Tags:

<ul> - Indicates the start of an unordered list.

<li> - Indicates each list item within the unordered list.

Attributes:

Type : Specifies the type of bullet symbol.

Values:

- disc (default) - Solid circle

- circle - Hollow circle

- square - Solid square

- none - No bullet, just plain list items.

3.Description List

Used to display a list of terms and their associated descriptions. This is often used for glossaries, or to define terms and their meanings.

Tags:

<dl> : Indicates the start of a description list.

<dt> : Represents a description term.

<dd> : Represents a description definition, providing more information about the term.

HTML ELEMENT

- An HTML Element is a combination of an opening tag, content, and a closing tag.

Basic Structure:

<tagname> Content goes here </tagname>

Classification of HTML Elements:

1.Inline Level Elements

2.Block level Elements

3.Inline-Block Level Elements.

1. Inline Level Elements

- Inline elements are displayed in the same line .
- Here we cannot assign height and width properties directly to inline elements.
  Ex: **<b>** , **<i>** , **** , etc

2. Block Level Elements

- These elements occupy the entire width of their parent container or viewport, starting on a new line.
- We can assign height and width properties to block-level elements.
  Ex: **<h1>** , **<p>** , ** ** , etc

3. Inline-Block Level Elements

These elements are displayed in the same line as neighbouring elements, similar to inline elements but here we can assign height and width properties to inline-block elements, giving them block-like characteristics.
Ex: **<img>** , **<button>** , **<input>** , **<select>** , **<textarea>** , etc.

HTML ATTRIBUTES

- They provide additional information or functionality to HTML elements.
- Attributes are placed inside the opening tag of an element and typically consist of a name-value pair.

Syntax of Attributes :

Attributes are added within the opening tag of an element and follow this format:

<element attribute=”value”> Content </element>

IMAGE TAG

The <img> tag has several important attributes that define the image's behavior and appearance:

Attributes:

- `src` (Source): Specifies the path to the image file.

- This path can be a relative URL (based on the location of the HTML file) or an absolute URL (complete path).

- `alt` (Alternate Text): - Provides alternative text for the image if it cannot be displayed.

- **`height`:** - Defines the height of the image in pixels or as a percentage of its original size.

- **`width`:** - Defines the width of the image in pixels or as a percentage of its original size. –

Example:

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DIV

- It is block-level container which is used to group html elements.
- It is useful for structuring your page, even before applying any styles.

What Happens without CSS?

- Each div starts on a new line by default.
- All div will start vertically.
- There is no spacing, colour or layouts styling unless you added CSS later.

<a href = “”>

- **a** = anchor tag (Creates a link)
- **href** = tells the browser where the link should go.
- “**url**” = the Destination (can be website , a file , or an ID on the Same Page)

Semantic Tag:

Semantic tags are HTML elements that clearly describe their meaning both to the browser and to developers.

Purpose: The primary purpose of semantic tags is to improve the **structure, readability,** and **accessibility of web pages**, making it easier for search engines, screen readers, and developers to understand the layout and content.

- Section
- Article
- Nav
- Footer
- Header

1. <header> :

Definition: Represents the introductory section or a group of navigation links in a webpage.

Usage: Typically contains logo, site name, and navigation elements.

2. <nav> :

Definition: Represents a section of the page that links to other pages or to parts within the same page.

Usage: Usually used for navigation bars or menus.

3.<article> :

Definition: Represents an independent piece of content that could be independently distributed or reused, such as blog posts, news articles, or user comments.

Usage: Used for self-contained, reusable content.

4.<section>:

Definition: Represents a generic section of a document or application. Used to group related content together.

Usage: Used for thematic grouping of content.

5. <main>:

Definition: Represents the main content of the webpage that is unique to the document, excluding headers, footers, and sidebars.

Usage: Used for the central content of the webpage.

6. <footer>:

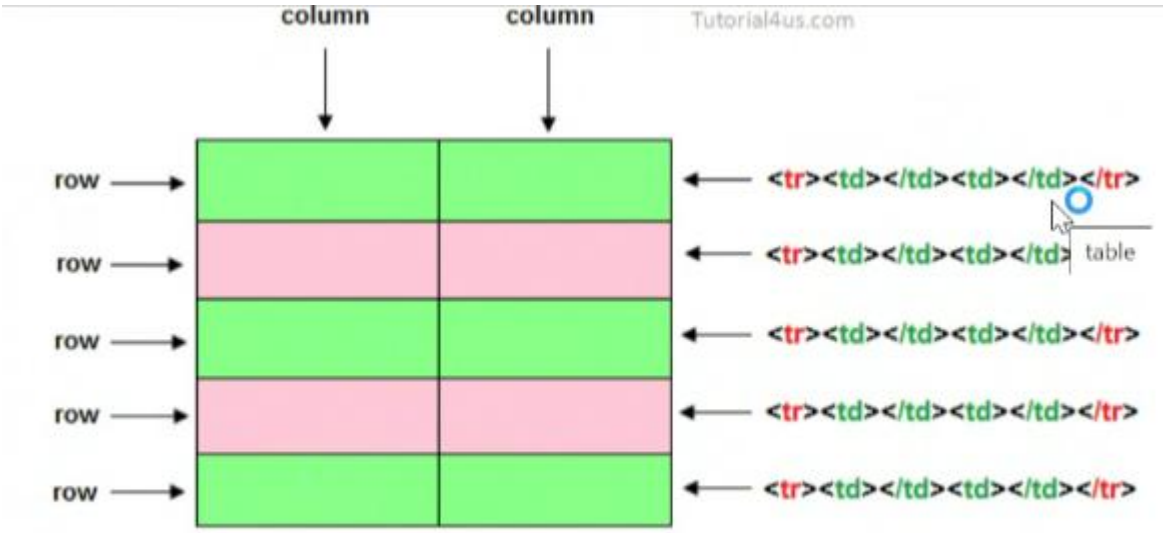
Definition: Represents the footer of a section or page, typically containing copyright information, links to privacy policies, or contact details.

Usage: Found at the bottom of the page or section.

Table

- HTML table is creating using table element and made up of rows **<tr>** and cells **<td>** along with header **<th>**.

Structure of the Table



Note: A table not contain only text but it contain image, video and another table inside table.

Attribute of the Table

- **Id :** This attribute are used for provide unique id for table.
- **border:** Specifies the width of the border around the table and cells. The default value is 0 (no border).
- **cellpadding:** Specifies the amount of space between the cell content and the cell border.
- **cellspacing:** Specifies the amount of space between the borders of adjacent cells.
- **width and height:** Specifies the dimensions of the table. These can be set in pixels or as a percentage of the containing element.

Merging Cells

colspan: Merges two or more columns within a row.

rowspan: Merges two or more rows within a column.

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CLASS ATTRIBUTE

- Class is an attribute which is used to assign one or more labels to an element.
- Style with css
- Target with Java Script
- Group Similar Element

What <label> ?

Is used to define a caption or description for an input element

<label for="username"> User Name:</label>

<input type id="text" id="username" name="username">