**HTML**

HTML stands for **HyperText Markup Language**. It is a Markup Language, i.e., it helps us to write the content of a web page. It provides structure to the content of a Web page; hence it is also called the skeleton of a Web page. HTML uses tags/elements to provide structure to a web page. The HTML code is written and saved in files with extension **.html**.

HTML Elements have an opening tag **<>** and a closing tag **</>**. The text that an element displays goes between the tags.

* **<!DOCTYPE html>**

It is known as a **Declaration String** included in all HTML documents ensuring that the browsers meet industry-wide specifications. It tells the browsers that the web page is an HTML5 (latest version of HTML) document.

* **<html>**

It is the root element of any web page. It defines that the document is an HTML document. It can be accompanied by attributes like –

* **lang** – specifies the language used by the HTML document

All other elements of the HTML are nested inside the <html> element.

* **<head>**

It contains all the metadata about the HTML document. Metadata is information about the page that is not displayed directly on the page. It contains information like title, links to stylesheets, character encoding to be used, etc.

* **<title>**

It is used to specify the title of an HTML web page. It is nested inside the <head> tag. It is useful for search engines.

* **<meta>**

It is used to set browser behavior. It can accompany several attributes like –

* **charset** – specifies the character encoding to be used in the web page like UTF-8. It is a Void Element.

For more attributes, you can visit the Official docs.

* **<style>**

It is used to define the section to add CSS within an HTML document.

* **<link>**

It is used to attach other executable files like .css and .js to our HTML document. It is a Void Element.

* **<body>**

All the content that should be rendered on the web page goes inside the <body> element. It is the main element in an HTML document.

* **<h1> to <h6>**

The elements <h1> to <h6> are used to write headings in the web page. They also signify the importance of the content below them. The lower the number of the heading, the higher the importance it has, i.e., <h1> holds more significance than <h2>, <h2> holds more significance than <h3>, and so on.

Only use one <h1> element per web page and place more significant headings over less significant headings. When you add a lower ranked heading in your web page, it signifies that you are starting a sub-section.

* **<p>**

The Paragraph Element is used to create a paragraph of text in our web page. As it is used to write the main content of a web page, it should always come after a heading element. It is a block-level element, hence take up the entire with of the web page.

* **<div>**

It is used mainly for design layout purposes, unlike other content elements used in HTML.

* **<!--** … **-->**

This is a Comment Element. Commenting allows us to leave messages in our code without affecting the browser display. It also allows us to make code inactive. An HTML Comment starts with **<!--**, followed by the comment, and ends with **-->**.

HTML5 has some special elements that identify different content areas. These elements make our HTML easier to read and help with Search Engine Optimization (SEO) and Accessibility features.

* **<main>**

It is used to represent the main content of the body of an HTML document. The content inside the <main> element should be unique to the document and should not repeat in other parts of the document.

* **<section>**

It is used to start a new sections like header, footer, chapter, etc. in our web page to separate the content from any future content. It is a semantic element and helps in SEO and accessibility. Usually, the <section> element is nested inside the <main> element.

* **<article>**

It is used to contain multiple elements that have multiple related information.

* **<footer>**

It is used to add a footer for an HTML document or section containing information about the author of the document, copyright data, links to terms of use, contact information, etc. It comes at the end of any section of the document it is part of.

When we put HTML elements inside another HTML element, it is called **Nesting** and the elements placed inside are called **Nested Elements**. As part of HTML styling convention to make HTML code easier to read, we must indent the Nested elements by 2 spaces further to the right of the element they are nested in.

There are some special elements in HTML which do not have any closing tag. These elements are called **Void Elements**. Void Elements have only an opening tag.

HTML Elements can also be divided into other two types – **Inline Elements** and **Block Elements**. Inline Elements are elements which do not require new lines, whereas Block Elements are elements which take up the whole line.

**HTML Attributes** are special words used inside the opening tag of an element to control the element’s behavior.

* **<hr>**

It is used to add a Horizontal Rule in an HTML document. It is a Void Element.

* **<img>**

It is used to add images to our websites. However, it is always accompanied by attributes –

* **src** – specifies the image’s URL [*Mandatory*]
* **alt** – attribute’s text is used by screen readers to improve accessibility and is displayed if the image fails to load

HTML stands for HyperText which means text with links. Hence, HTML has an element to add links in our web page.

* **<a>**

It is used to add links to other web pages in our document. The text for the link is placed between the opening and closing tags. We can place any type of content in the <a> element like images, HTML elements, etc. However, there must be some content for the element to be visible in absence of CSS. It is also accompanied by special attributes –

* **href** – specifies the web page’s URL [*Mandatory*]
* **target** – specifies where to open the link

The **target** attribute can take multiple values like **\_blank** (to open the link in a new tab).

* **<ul>**

It is used to add an Unordered List in our web page.

* **<ol>**

It is used to add an Ordered List in our web page.

* **<li>**

It is used to add a list-item in our Ordered or Unordered Lists.

* **<figure>**

It is used to represent self-contained content and allows us to associate an image with a caption. Inside it, we use the **<figcaption**> element to add a caption to describe the image contained within the <figure> element.

* **<em>**

It is used to wrap a word or text that must be emphasised. Its default action is to italicize the enclosed text.

* **<strong>**

It is used to indicate important or urgent text. Its default action is to bold the enclosed text.

* **<form>**

It is used to add a Web form in our web page. It is accompanied by attributes like –

* **action** – indicates the URL where the form data should be sent

HTML Forms are one of the most important constituents of a web page.

* **<input>**

It allows us several ways to collect data in a web form with its mandatory attribute **type**. It is also a Void Element and has no closing tag. It is accompanied by several attributes like –

* **type** – specifies the type of input is expected like text, password, number, checkbox, etc.
* **name** – specifies the name of the field when sending form data
* **placeholder** – specifies what kind of information to enter in an input with the help of a hint
* **required** – Boolean attribute specifying if an element is required in for data before submitting
* **checked** – Boolean attribute used with radio/checkbox to make an input selected by default

Boolean Attributes are special attributes which do not take any value. If they are mentioned in the opening tag, it is applied, else not.

When using the type **radio** or **checkbox**, we need to make sure that each of the associated input must have the same **name** attribute. It directs the HTML to club inputs with the same name together, else each of these inputs is treated as a separate entity. Additionally, these inputs need a value too to form the name-value pair when submitting the form, else it just gets submitted as name=on or name=off (depending on whether any radio-input is selected or not).

* **<label>**

It is used to help associate the text for an <input> element with the <input> element itself (especially for assistive readers). If used without the **for** attribute, it wraps the input element inside it. If we are using the **for** attribute, we can write a separate label element and provide the value of input’s name attribute in for attribute. In such case, you can enclose the label text inside the <label> element and remove the label with the <input> element.

* **<button>**

It is used to add a clickable button in our page. The default behavior of clicking a button inside a form without any attributes submits the form to the location specified in the form’s action attribute. But, instead of relying on the default action we provide a type **submit** to the element.

* **#id**

The **id** attribute is a special universal HTML attribute which is used to identify specific HTML elements. Each id attribute’s value must be unique from all other id attributes in the web page.

* **<fieldset>**

It is used to group related inputs and labels together in a web form. It is a block-level element. It is usually accompanied by a child element **<legend>** which is used to caption the fieldset in the web form.

* **Placeholder**