

Lec-6

Hyper Text Markup Language (HTML).

Outline

1. Basics.
2. Working with Links.
3. Images in web page.
4. Audio, Video and iframe element.
5. Working with Tables.
6. HTML Form.
7. Creating Simple Website and Parent-Child relationship.
8. Conclusion.

1. Basics:

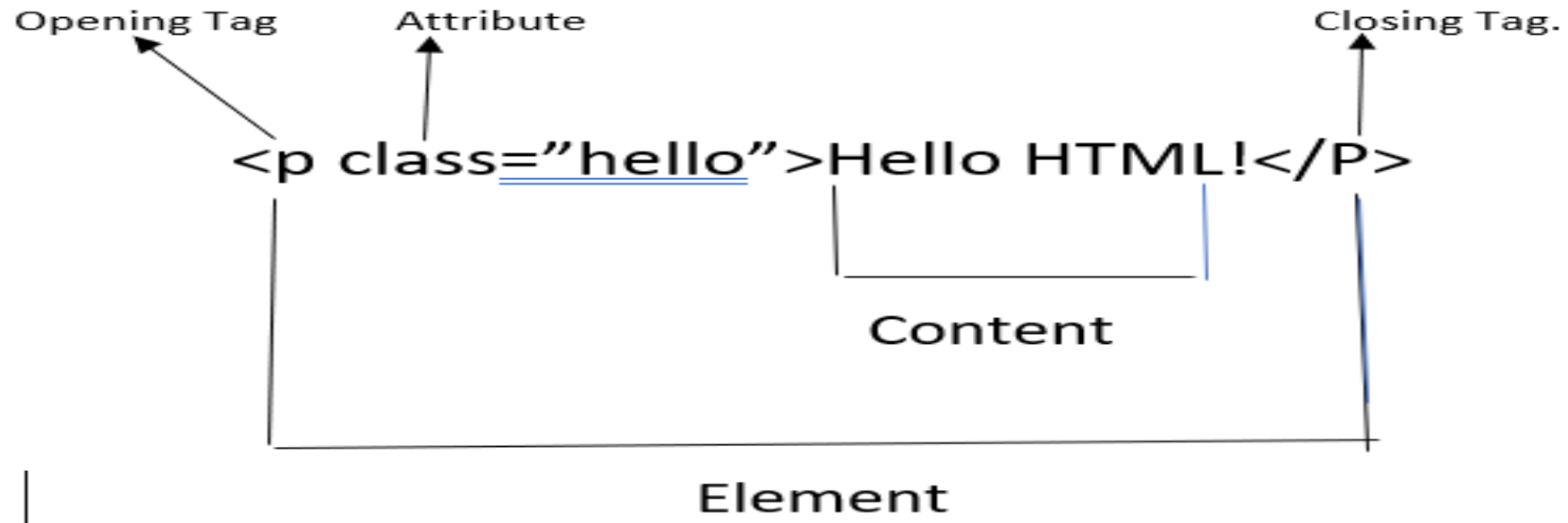
- HTML is not a programming language. It is a markup language that tells browser how to structure web pages.
- It Consists of series of elements which we use to enclose, wrap or markup different parts of the contents to make it appear or act in certain way.
- HTML 5 is the latest evolution of the standard that defines HTML.
- HTML 5 define two different concepts:
 - a. It is a new version of the language with new elements and attributes.
 - b. A larger set of technologies that allows building more diverse and powerful website and application.

1. Basics:

- Important features of HTML 5:
 - a. Semantics: Allowing us to describe more precisely what our content is.
 - b. Multimedia: Incorporation of special element for audio and video embedding.
 - c. Device Access: Allowing for usage of various input and output devices.
 - d. Performance and Integration: Providing greater speed optimization and better usage of computer hardware.

1. Basics:

- Parts of basic building block:



1. Basics:

- a. Opening Tag: This consists of name of the element. It marks where the element begins.
 - b. Content: Information of the element.
 - c. Closing Tag: This marks end of the element and it precedes tag name with a forward slash.
- So, an element in HTML is: Opening tag, followed by content, followed by closing tag.
 - Note-1: Content “Hello HTML!”, has a semantics/meaning now. What is it?
 - Note-2: HTML is case in-sensitive.

1. Basics:

- Block-level Element:
 - a. These elements are the structural element of HTML.
 - b. These forms the visible parts of the page. A block-level element appear in new line following the content that precedes it.
 - c. Ex.: Heading, Paragraph, Lists, Navigation, Footer and so on.
 - d. Block-level elements can be nested within another block-level element but not within a inline-element.
- Inline Element:
 - a. Inline Element are contained within block-level element and surrounds only small parts of the document.
 - b. No new line after inline element in the document.
 - c. Ex. Include: <a>, , and many more.

1. Basics:

- Empty Element:

- a. Not all elements follow the patterns of opening tag, content and closing tag. Some elements only consists of single element, such element are called empty element.

- b. Ex. ``

- Attribute:

- a. Attribute contain extra information about the element that won't appear in the content.

- b. In this ex. Class attribute is an identifying name used to target the element with style or JavaScript information.

1. Basics:

- Boolean Attribute:

- a. Attribute written without values. They can have only one value, which is generally the same as the attribute-name.

- b. Ex. `<input type="text" disabled = "disabled">`
`<input type="text" disabled>`

- [Note: Using disabled attribute prevents the end-user from entering text into the input box.]

- White Space in HTML:

- a. HTML parser reduce each sequence of white space to a single space, when rendering the code.

- b. However, proper space allows better readability of the code.

1. Basics:

- Entity Reference:
 - a. Characters <, >, ", ' , and & are special character. They are parts of the HTML syntax.
 - b. Special codes called character reference/entity reference are used to render special character.
 - c. Each reference starts with a ampersand(&) and ends with a semicolon(;;).

Characters	Character reference equivalent
<	<
>	>
"	"
'	'
&	&

1. Basics:

- HTML Comments:
 - a. The purpose of comments is to allow us to include notes in the code to explain our logic.
 - b. Browser ignores comments.
 - c. `<!-- -->`
- <meta> element:
 - a. Metadata is the data that describes data, and <meta> element achieves this.
 - b. ex. For specifying character set of the document:
`<meta charset="utf-8">`
[Note-1: utf-8, Unicode Transformation Format – 8 bit.
(Universal Coded Character set).]
[Note-2: utf-8 is a variable-width character encoding used for electronic communication.]

1. Basics:

- <meta> element:

- c. ex, adding author and description:

- <meta name="author" content="Anirban Choudhury">

- <meta name="description" content="Basics of HTML.">

- Paragraph and Heading element: <p></p>, <h1><h2>...<h6></h6>...</h2></h1>.

- a. Paragraphs are wrapped using <p></p> tag.

- b. <h1> represents main heading, <h2> represents sub-heading, <h3> represents sub-sub-heading and so on.

- List Element:

- a. Un-ordered list: Un-ordered list are used to mark up lists of items for which the order of the item doesn't matter.

1. Basics:

- List Element:

ex. ``

` Book.`

`Pen.`

``

- b. Ordered List:

--- In ordered list, order of the item does matter.

--- ex. ``

` Go straight.`

` Turn Left. `

``

1. Basics:

- List Element:

- c. Description List:

- The propose of this list is to markup a set of item and their associated descriptions, such as terms and definitions.

- It uses <dl> as a wrapper and in addition uses <dt> (description term) element, and each description is wrapped in a <dd> (description definition) element.

- ex. <dl>

- <dt>Computer Science.</dt>

- <dd>Evolving.</dd>

- </dl>

- Single term can have multiple description.

1. Basics:

- Emphasis element:

- When we want to stress some words, there by subtly altering its meaning, we use element to that.

- Browser style it as italics by default.

- ex. <p> I am glad you weren't late</p>.

- element:

- To give importance to certain words we use element.

- By default browser renders it in bold.

- Bold, Italics<i>, and Underline<u>:

- Elements of HTML has associated semantics.

- However, ,<i> and <u> only affect presentation and not semantics.

1. Basics:

- Bold, Italics<i>, and Underline<u>:

- HTML 5, redefines ,<i>,<u> for semantic role.

- : Meaning to be conveyed -> Keywords, Product Names...

- <i> : Meaning to be conveyed -> foreign words, taxonomic designation, technical terms, a thought ...

- <u>: Meaning to be conveyed -> Proper name, misspelling, ...

- Quotations:

- Either block-level or inline quotation are permissible in HTML.

- Blockquotes:

- Section of block-level content (be it paragraph, multiple paragraph, a list etc.) is quoted from some where else.

1. Basics:

- Quotations:

- Blockquotes:

- Wrap inside `<blockquote>` element to signify the url.

- Cite attribute for pointing to the source.

- ex. `<blockquote cite = "http://www.abc.com">`

- `<p>`

- To be or not to be.

- `</p>`

- `</blockquote>`

- Browser default styling will render this as a quote.

1. Basics:

- Quotations:

- Inline quotation:

- Inline quotation works same way, except that they use the <q> element.

- ex. <p>The quote element:

- <q cite="http://www.abc.com">To be or not to be, that is the question.</q>
</p>

- Citation:

- <cite> element is used to show resource being cited in page.

- ex. <p>According to the

- <cite>ABC quotes:</cite>
</p>

1. Basics:

- Abbreviation<abbr>:

--- Wrapping around an abbreviation or acronym and provide full expansion of the term, included inside title attribute.

--- ex. <p>

We use <abbr title="Hypertext Markup Language">HTML</abbr> to structure our web document.

</p>

--- <acronym> has similar syntax as <abbr>.

- Contact<address>:

--- <address> wraps contact details.

--- ex. <address> ABC.

contact@abc.com

</address>

1. Basics:

- Sub-script<sub> and Superscript<sup>:

--- Sub-script and super-script are used in special situation giving meaning like for writing mathematical formula.

--- ex. <p> If x^2 is 9, then x is either +3 or -3. </p>.

 <p> x^2 (x) equals $x^2 + x + 3 = 0$ </p>.

- Computer Code:

--- <code> : For making up generic piece of computer code.

--- <pre> : For retaining whitespace. Wrapping text inside <pre> will preserve indentation or excess whitespace in text.

--- <var> : For specifically making up variable name.

--- <samp> : For making up the output of a computer program.

--- ex. <pre><code>

 var button_click = document.querySelector("input.simp_button");

 button_click.onclick = function(){

 alert("Java Script.");

 }

</code></pre>

1. Basics:

- Date and Time:

- <time> element for making up time and date in a machine readable format.

- ex. <time datetime="2020-09-29"> 29 September 2020.</time>.

- <time datetime="2020-09">September 2020</time>.

- <time datetime="7:30">7:30</time>.

- <time> element allows us to attach an unambiguous, machine readable time/date for further down stream processing.

- Document Structure:

- In addition to defining individual parts of web page, block-level elements are used to define areas of web page.

- Wrapping section of a document based on their functionality.

1. Basics:

- Document Structure:

- Semantic mark up provided by dedicated tags for inducing structure in a document.

- a. Header: <header>.

- b. Navigation bar: <nav>.

- c. Main Content: <main>, with various content sub-subsection represented by <article>,<section>,<div>.

- d. Sidebar: <aside>.

- e. Footer: <footer>.

1. Basics:

- Document Structure:

- a. Header,<header>:

- Represents a group of introductory content.
 - Defines global header of web page, when placed as a child of <body>.
 - Defines specific header of a particular section, when wrapped inside <article> for instance.

- b. <nav>:

- Navigation functionality for the page.
 - Usually represented by menu buttons, links or tabs.

1. Basics:

- Document Structure:

- c. <main>:

- Area in page that contains most of the unique content of a given web page.

- This part of the website vary from page to page.

- <article>:

- Encloses a block of related content that makes sense on its own without the rest of the page. (ex. Single blog post.)

- <section>:

- Similar to <article>, but it is more for grouping together a single part of the page that constitute one single piece of information.

- Ex., A mini-map or a set of articles.

- <article> can be break up into several <section> or vice versa.

1. Basics:

- Document Structure:

- d. <aside>:

- Contains contents that is not directly related to main content but can provide additional information indirectly related to it and some recurring information persisting across all pages.

- ex. Glossary entries, Author information, Related links, etc.

- e. <footer>:

- Represents a group of end-content for a page.

- Generally includes, copyright information or contact information.

- Place to put common information, like header but usually not critical to the website.

1. Basics:

- Non-Semantic Element:

- Need:

- No ideal semantic element to group some items together or wrap some content.

- Grouping set of element together to affect them as a single entity for further CSS and JavaScript processing.

- a. :

- Inline non-semantic element.

- Should only be used when no other semantic element are appropriate for the context and in situation where intension is not to adhere to any specific semantic structure.

- ex. <p>

- Computation is, exiting.

- </p>

1. Basics:

- Non-Semantic Element:

- b. <div>:

- Block-level non-semantic element.

- Should only be used when no other semantic element are appropriate for the context and in situation where intension is not to adhere to any specific semantic structure.

- ex. <div class="sitemap">

- <h5>Sitemap</h5>

-

- Home.

- About Us.

-

- </div>

1. Basics:

- Line breaks
 and Horizontal Rules<hr>:

- a.
:

- Creates a line-break in a paragraph.

- It is the only way to force a rigid structure in a situation where we want a series of fixed short lines.

- b. <hr>:

- This element creates a horizontal rule in the document that denotes a thematic change in the text, such as a change in the topic.

- Visually, it just look like a horizontal line.

1. Basics:

- Doctype: `<!doctype html>`
 - In the initial days of HTML (1991-1992), doctype were meant to act as links to a set of rules that the HTML page had to follow so that it is considered as valid HTML.
 - ex. `<!doctype html public "-//w3c//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml-transitional.dtd">`.
 - In HTML 5, `<!doctype html>` as doctype is used, conforming it to a valid HTML 5 document.
 - It is good practice to include doctype, however it is just historical artefact that need to be considered for every thing to work right in the code.

2. Working With Links: