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| --- |
| Day 1 ( HTML ) |

1. Basics in Web Design
2. What is World Wide Web

* The World Wide Web (WWW) is a network of online content that is formatted in HTML and accessed via HTTP. The term refers to all the interlinked HTML pages that can be accessed over the Internet.
* The World Wide Web is most often referred to simply as "the Web."

1. Why create a web site

* A website is your most powerful tool for communication. A website is a unique way to connect with the world. Whether you choose to create a website to share your passion for music, inform people of your business, sell products, or any other reason.

A website offers you :

* + The perfect business card for your project or organization
  + A detailed and permanent advertisement
  + A site available 24/7 all-year-round
  + Your own competitive edge
  + Better communications
  + Increased credibility

1. Introduction to HTML
2. What is HTML?

HTML is the standard markup language for creating web pages and web applications.

HTML stands for HyperText Markup Language.

**Markup language:**

A markup language is a computer language that uses tags to define elements within a document.

**HyperText:**

Hypertext is text which contains links to other texts.

**HTML Versions:**

HTML 3.2

HTML 4.01

XHTML

HTML5

Currently we are using HTML4 and HTML5.

**Difference between HTML4 and HTML5:**

|  |  |
| --- | --- |
| **HTML4** | **HTML5** |
| Doctype declaration in Html is too longer <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd"> | DOCTYPE declaration in Html5 is very simple "<!DOCTYPE html> |
| character encoding in Html is also longer  <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN"> | character encoding (charset) declaration is also very simple <meta charset="UTF-8"> |
| Audio and Video are not part of HTML4 | Audio and Videos are integral part of HTML5 e.g. <audio> and <video> tags. |
| Not possible to draw shapes like circle, rectangle, triangle. | Using Html5 you can draw shapes like circle, rectangle, triangle. |
| Does not allow JavaScript to run in browser. JS runs in same thread as browser interface. | Allows JavaScript to run in background. This is possible due to JS Web worker API in HTML5 |
| Works with all old browsers | Supported by all new browser. |

1. HTML Documents

HTML document is a file containing HyperText Markup Language, and its filename most often ends in the .html extension.

HTML document is a text document read in by a Web browser and then rendered on the screen.

**Basic structure of an HTML document:**

|  |
| --- |
| <!DOCTYPE html>  <html>  <head>  <title>A Simple HTML Document</title>  </head>  <body>  This is a very simple HTML document  </body>  </html> |

1. Creating an HTML document

Web pages can be created and modified by using professional HTML editors.

However, for learning HTML we recommend a simple text editor like Notepad (PC) or TextEdit (Mac).

* In Windows – open notepad. In Mac – TextEdit
* Place the code ( structure of an HTML document )
* Save the file on your computer. Select File > Save as in the Notepad menu. Name the file "index.htm"
* Right click and open the file in any one of the browser

1. HTML basic Tags

* 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>.

Like below 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> |

* Paragraph Tag

Defines a paragraph into web document. HTML paragraph define using <p> tag.

Each paragraph of text should go in between an opening <p> and a closing </p> tag as shown below in the example:

Ex:

|  |
| --- |
| <p> This is first Paragraphs </p>  <p> This is Second Paragraphs </p> |

* Line Break Tag

Whenever you use the <br /> element, anything following it starts from the next line. This tag is an example of an empty element, where you do not need opening and closing tags, as there is nothing to go in between them.

The <br /> tag has a space between the characters br and the forward slash. If you omit this space, older browsers will have trouble rendering the line break.

Ex:

|  |
| --- |
| <p>Hello <br /> How are you ?</p> |

* Comment Tag

Defines the Comments <!-- Your Comment --> tag.

Ex :

<p> paragraph content </p> <!—this is paragraph -->

* Image Tag

To display Images into web document. HTML Images are define inside the <img> tag.

Ex:

<img src=image.png" />

The <img> tag is empty, which means that it contains attributes only and it has no closing tag. To display an image on a page, you need to use the src attribute. Src stands for "source". The value of the src attribute is the URL of the image you want to display on your page. The syntax of defining an image:

<img src="graphics/chef.gif">

Not only does the source attribute specify what image to use, but where the image is located. The above image, graphics/chef.gif, means that the browser will look for the image name **chef.gif**in a **graphics**folder in the same folder as the html document itself.

src="chef.gif" means that the image is in the same folder as the html document calling for it.

src="images/chef.gif" means that the image is one folder down from the html document that called for it. This can go on down as many layers as necessary.

* Horizontal Lines

Horizontal lines are used to visually break up sections of a document. The <hr> tag creates a line from the current position in the document to the right margin and breaks the line accordingly.

Ex:

<p>This is paragraph one and should be on top</p>

<hr />

<p>This is paragraph two and should be at bottom</p>

* Link Tag

Defines the Link in internal or External document. HTML Link are defined inside the <a> tag.

<a href="http://www.websitename.com/about">About Us</a>

* HTML Attributes

Attributes provide additional information about an element. Attributes are always specified in the start tag. Attributes usually come in name/value pairs like: name="value"

* lang Attribute

The language of the document can be declared in the <html> tag.

The language is declared with the lang attribute.

Declaring a language is important for accessibility applications (screen readers) and search engines

<html lang="en-US">

The first two letters specify the language (en). If there is a dialect, use two more letters (US).

* Title Attribute

Here, a title attribute is added to the <h1> element. The value of the title attribute will be displayed as a tooltip when you mouse over the h1 tag:

<h1 title="I'm a tooltip"> This is a heading. </h1>

* Alt Attribute

The alt attribute specifies an alternative text to be used, when an image cannot be displayed.

<img src="image.jpg" alt="Product image">

1. Elements of HTML

* Nested HTML Elements

It is very much allowed to keep one HTML element inside another HTML element:

<h1>This is <i>italic</i> heading</h1>

<p>This is <u>underlined</u> paragraph</p>

* Non Semantic Elements and Semantic Elements

**Non Semantic Elements:-** Traditionally, developers have implemented non-semantic to define the structure and express the meaning of content. It tells nothing about its content. The element has no special meaning at all. It represents its children.

<div> Content </div>

<span> Content </span>

**Semantic Elements:-** It introduces meaning to the web page rather than just presentation.

<article> It defines an article in the document

<aside> It defines content aside from the page content

<bdi> It defines a part of text that might be formatted in a different direction from other text

<details> It defines additional details that the user can view or hide

<dialog> It defines a dialog box or window

<figcaption> It defines a caption for a <figure> element

<figure> It defines self-contained content, like illustrations, diagrams, photos, code listings, etc.

<footer> It defines a footer for the document or a section

<header> It defines a header for the document or a section

<main> It defines the main content of a document

<mark> It defines marked or highlighted text

<nav> It defines navigation links in the document

<section> It defines a section in the document

<summary> It defines a visible heading for a <details> element

<time> It defines a date/time

* Block Level Elements and Inline Elements.

**Block Level Elements :-** HTML block level elements can appear in the body of an HTML page. It can contain another block level as well as inline elements. By default, block-level elements begin on new lines.

List of block level elements

p

h1, h2, h3, h4, h5, h6

ol, ul

pre

address

blockquote

dl

div

fieldset

form

hr

noscript

table

**Inline Elements :-** It can contain data and other inline elements. By default, inline elements do not begin on new lines.

List of inline elements

b, big, i, small, tt

abbr, acronym, cite, code, dfn, em, kbd, strong, samp, var

a, bdo, br, img, map, object, q, script, span, sub, sup

button, input, label, select, textarea

* Paired tags and Unpaired tags

**Difference between paired Tags and unpaired tags:**

Paired tags are those tags which have opening and closing tags.

For Example:

< h1></h1>

<div>/<div>

Unpaired tags are those tags which don't have a closing tag.

For Example:

< br / >

<img>

* Lists, Tables and Frames, Iframes
* Lists

HTML offers web authors three ways for specifying lists of information. All lists must contain one or more list elements. Lists may contain:

<ul> - An unordered list. This will list items using plain bullets.

<ol> - An ordered list. This will use different schemes of numbers to list your items.

<dl> - A definition list. This arranges your items in the same way as they are arranged in a dictionary.

**Unordered list:-** This is a collection of related items that have no special order or sequence. This list is created by using HTML <ul> tag. Each item in the list is marked with a bullet.

<ul>

<li>Beetroot</li>

<li>Ginger</li>

<li>Potato</li>

<li>Radish</li>

</ul>

You can use type attribute for <ul> tag to specify the type of bullet you like. By default it is a disc. Following are the possible options:

<ul type="square"></ul>

<ul type="disc"></ul>

<ul type="circle"></ul>

**Ordered List:-** If you are required to put your items in a numbered list instead of bulleted then HTML ordered list will be used. This list is created by using <ol> tag. The numbering starts at one and is incremented by one for each successive ordered list element tagged with <li>.

<ol>

<li>Beetroot</li>

<li>Ginger</li>

<li>Potato</li>

<li>Radish</li>

</ol>

You can use type attribute for <ol> tag to specify the type of numbering you like. By default it is a number.

Following are the possible options:

<ol type="1"> - Default-Case Numerals. </ol>

<ol type="I"> - Upper-Case Numerals. </ol>

<ol type="i"> - Lower-Case Numerals. </ol>

<ol type="a"> - Lower-Case Letters. </ol>

<ol type="A"> - Upper-Case Letters. </ol>

**Definition lists :-** The definition list is the ideal way to present a glossary, list of terms, or other name/value list.

Definition List makes use of following three tags.

<dl> - Defines the start of the list

<dt> - A term

<dd> - Term definition

</dl> - Defines the end of the list

<dl>

<dt><b>HTML</b></dt>

<dd>This stands for Hyper Text Markup Language</dd>

<dt><b>HTTP</b></dt>

<dd>This stands for Hyper Text Transfer Protocol</dd>

</dl>

* Tables

The HTML tables are created using the <table> tag in which the <tr> tag is used to create table rows and <td> tag is used to create data cells.

<table>

<tr>

<td>Row 1, Column 1</td>

<td>Row 1, Column 2</td>

</tr>

<tr>

<td>Row 2, Column 1</td>

<td>Row 2, Column 2</td>

</tr>

</table>

Table heading can be defined using <th> tag. This tag will be put to replace <td> tag, which is used to represent actual data cell. Normally you will put your top row as table heading as shown below, otherwise you can use <th> element in any row.

<table>

<tr>

<th>Title 1</th>

<th> Title 2</th>

</tr>

<tr>

<td>Row 2, Column 1</td>

<td>Row 2, Column 2</td>

</tr>

</table>

**Cellpadding and Cellspacing attributes**

There are two attribiutes called cellpadding and cellspacing which you will use to adjust the white space in your table cells. The cellspacing attribute defines the width of the border, while cellpadding represents the distance between cell borders and the content within a cell.

<table cellpadding="5" cellspacing="5">

<tr>

<th>Name</th>

<th>Salary</th>

</tr>

<tr>

<td>Ramesh Raman</td>

<td>5000</td>

</tr>

<tr>

<td>Shabbir Hussein</td>

<td>7000</td>

</tr>

</table>

**Colspan and rowspan attribute**

<table>

<tr>

<th>Column 1</th>

<th>Column 2</th>

<th>Column 3</th>

</tr>

<tr><td rowspan="2">Row 1 Cell 1</td><td>Row 1 Cell 2</td><td>Row 1 Cell 3</td></tr>

<tr><td>Row 2 Cell 2</td><td>Row 2 Cell 3</td></tr>

<tr><td colspan="3">Row 3 Cell 1</td></tr>

</table>

**Table Header, Body, and Footer**

Tables can be divided into three portions: a header, a body, and a foot. The head and foot are rather similar to headers and footers in a word-processed document that remain the same for every page, while the body is the main content holder of the table.

The three elements for separating the head, body, and foot of a table are:

<thead> - to create a separate table header.

<tbody> - to indicate the main body of the table.

<tfoot> - to create a separate table footer.

A table may contain several <tbody> elements to indicate different pages or groups of data. But it is notable that <thead> and <tfoot> tags should appear before <tbody>

<table>

<thead>

<tr>

<td colspan="4">This is the head of the table</td>

</tr>

</thead>

<tfoot>

<tr>

<td colspan="4">This is the foot of the table</td>

</tr>

</tfoot>

<tbody>

<tr>

<td>Cell 1</td>

<td>Cell 2</td>

<td>Cell 3</td>

<td>Cell 4</td>

</tr>

</tbody>

</table>

* Frames

To use frames on a page we use <frameset> tag instead of <body> tag. The <frameset> tag defines how to divide the window into frames.

Each frame is indicated by <frame> tag and it defines which HTML document shall open into the frame.

<frameset>

<frame name="top" src="/html/top\_frame.htm" />

<frame name="main" src="/html/main\_frame.htm" />

<frame name="bottom" src="/html/bottom\_frame.htm" />

</frameset>

**Disadvantages of Frames**

There are few drawbacks with using frames, so it's never recommended to use frames in your webpages:

* Some smaller devices cannot cope with frames often because their screen is not big enough to be divided up.
* Sometimes your page will be displayed differently on different computers due to different screen resolution.
* The browser's back button might not work as the user hopes.
* There are still few browsers that do not support frame technology.
* Iframes

<iframe src="/html/menu.htm" width="555" height="200">

Sorry your browser does not support inline frames.

</iframe>

* You can define an inline frame with HTML tag <iframe>. The <iframe> tag is not somehow related to <frameset> tag, instead, it can appear anywhere in your document. The <iframe> tag defines a rectangular region within the document in which the browser can display a separate document, including scrollbars and borders.
* The src attribute is used to specify the URL of the document that occupies the inline frame.
* Forms controls

HTML Forms are required when you want to collect some data from the site visitor. For example during user registration you would like to collect information such as name, email address, credit card, etc.

A form will take input from the site visitor and then will post it to a back-end application such as CGI, ASP Script or PHP script etc. The back-end application will perform required processing on the passed data based on defined business logic inside the application.

There are various form elements available like text fields, textarea fields, drop-down menus, radio buttons, checkboxes, etc.

The HTML <form> tag is used to create an HTML form and it has following syntax:

<form>

form elements like input, textarea etc.

</form>

There are different types of form controls that you can use to collect data using HTML form:

* Text Input Controls
* Checkboxes Controls
* Radio Box Controls
* Select Box Controls
* File Select boxes
* Clickable Buttons
* Submit and Reset Button
* Text Input Control

There are three types of text input used on forms:

**Single-line text input controls** - This control is used for items that require only one line of user input, such as search boxes or names. They are created using HTML <input> tag.

<form >

Name: <input type="text" />

<br>

Email: <input type="email" />

<br>

Password: <input type="password" />

</form>

**Multi-line text input controls -** This is used when the user is required to give details that may be longer than a single sentence. Multi-line input controls are created using HTML <textarea> tag.

<form>

Description : <br />

<textarea rows="5" cols="50" name="description">

Enter description here...

</textarea>

</form>

Here ‘rows’ is height and ‘cols’ is width

**Label Tag :**

The **HTML** <label> **element** represents a caption for an item in a user interface.

<label for="email">EMAIL-ID:<br /> <input type="email" placeholder="Enter a valid email address"><br /> <label for="phone">PHONE NO:<br /> <input type="text placeholder="Enter a valid phone number">

* Checkbox Control

Checkboxes are used when more than one option is required to be selected. They are also created using HTML <input> tag but type attribute is set to checkbox.

<form>

<input type="checkbox" name="maths" value="on"> Maths

<input type="checkbox" name="physics" value="on"> Physics

</form>

* Radio button control

Radio buttons are used when out of many options, just one option is required to be selected. They are also created using HTML <input> tag but type attribute is set to radio.

<form>

<input type="radio" name="subject" value="maths"> Maths

<input type="radio" name="subject" value="physics"> Physics

</form>

* Select Box Control

A select box, also called drop down box which provides option to list down various options in the form of drop down list, from where a user can select one or more options.

<form>

<select>

<option selected>Maths</option>

<option >Physics</option>

</select>

</form>

* File upload box

If you want to allow a user to upload a file to your web site, you will need to use a file upload box, also known as a file select box. This is also created using the <input> element but type attribute is set to file.

<form>

<input type="file" name="fileupload" accept="image/\*" />

</form>

* Button Controls

There are various ways in HTML to create clickable buttons. You can also create a clickable button using <input> tag by setting its type attribute to button. The type attribute can take the following values:

**Submit:-** This creates a button that automatically submits a form.

**Reset:-** This creates a button that automatically resets form controls to their initial values.

**Button:-** This creates a button that is used to trigger a client-side script when the user clicks that button.

<form>

<input type="submit" name="submit" value="Submit" />

<input type="reset" name="reset" value="Reset" />

<input type="button" name="ok" value="OK" />

</form>

1. HTML Media

* HTML Audio

Html <audio> tag defines sound, such as music or other audio streams.

Now, there are three supported audio file formats for the <audio> tag; those are given below;

* MP3
* Wav
* Ogg

<audio controls>

<source src="/html5/images/song.mp3" type="audio/mpeg">

Your browser does not support the audio tag.

</audio>

* Video Tag

<video>tag are used to add video on web page. Html5 added new tag for add video files on web page, before html5 it is achieve by using <embed> tag

<video controls>

<source src="/html5/images/movie.mp4" type="video/mp4">

</video>

* Youtube video

Youtube is a good platform to share your video with your friends and all over the world. Here you no need any server or hosting to share or upload your video on web.

Using html you can add or show your youtube video on web page.

Steps to add video on web page.

* Upload video on youtube.
* get video id.
* Define an <iframe> element in your web page.
* Specify hight and width of iframe for display video.

<iframe width="420" height="315" src="http://www.youtube.com/embed/6fwnjR1nJUY">

</iframe>

1. HTML Graphics

* Canvas

Html5 introduce new tag <canvas> which is used to draw graphics on the web page. It draw graphics on web by using JavaScript.

canvas is only a container for graphics you must need to write a script to draw graphics on web page.

<canvas id="canvasid" width="200" height="100”>

</canvas>

* SVG

Html5 introduce new tag <svg>, SVG stands for Scalable Vector Graphics. It is used to define graphics for the Web. <svg> tag is container for SVG graphics.

SVG has several methods for drawing paths, boxes, circles, text, and graphic images. It is mostly used for vector type diagrams like pie charts, 2-Dimensional graphs in an X,Y coordinate system etc.

<svg width="100" height="100">

<circle cx="50" cy="50" r="40" stroke="yellow" stroke-width="4" fill="red" />

</svg>