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What is HTML?

• Stands for HyperText Markup Language.

• **HyperText:** Link between web pages.

• **Markup Language:** Text between tags which defines structure.

• It is a language to create web pages.

• HTML defines how the web page looks and how to display content with the help of elements.

• It forms or defines the structure of our Web Page.

• Need to save your file with **.html** extension.

Features of HTML

• Learning curve is very easy (easy to modify).

• Creating effective presentations.

• Adding Links wherein we can add references.

• Can display documents on platforms like Mac, Windows, Linux etc.

• Adding videos, graphics and audios making it more attractive.

• Case insensitive language.

HTML Editors

• Simple editor: Notepad

• Notepad++

• Atom

• Best editor: Sublime Text.

HTML Skeleton

<!DOCTYPE html>

<html>

<head> <title></title>

</head>

<body>

</body>

</html>

HTML Skeleton

<!DOCTYPE html>

Instruction to the browser about the HTML version.

<html>

Root element which acts as a container to hold all the code Browser should know that this a HTML document Permitted content: One head tag followed by one body tag.

<head>

Everything written here will never be displayed in the browser. It contains general information about the document - Title, definitions of css and script sheets, Metadata(information about the document).

<body>

• Everything written here will be displayed in the browser.

• Contains text, images, links which can be achieved through tags.

Examples:

• This is our first paragraph.

• Go To Google o <img src= “photo.jpg">

HTML Comments

• Comments don't render on the browser.

• Helps to understand our code better and makes it readable.

• Helps to debugging our code.

• Two ways to comment:

- Single line
- Multiple line

HTML Elements

Elements are created using tags.

Elements are used to define semantics.

• Can be nested and empty.

Basic Structure

 This is our first Paragraph

• Contains following things:

• Start tag:

• Attributes : color ="red"

• End tag : / optional

• Content: This is our first Paragraph

Element Types

Block Level:

• Takes up full block or width and adds structure in the web page.

• Always starts from new line, dividing a page into coherent blocks.

These elements can contain block-level as well as inline elements.

Example :

•

•

• <h1>...<h6>

• <0>

• <U>

Inline Level:

Takes up what is requires and adds meaning to the web page.

• Always starts from where the previous element ended.

Example :

•

•

•

• <img>

• <a>

File and Folder structure

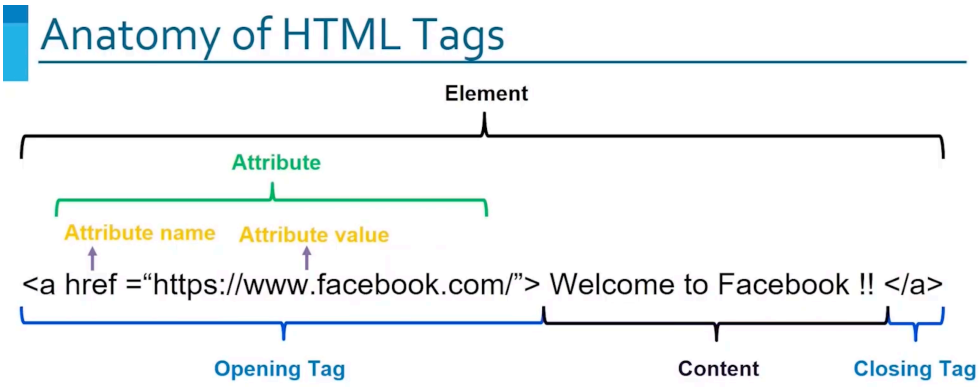
Project (Root) Folder: This is the main folder for the project and contains all other files and folders. On the web it's called the root folder.

HTML files: These are all of the files that end with .html. These should be directly in the Project/ Root folder and not in any sub folders.

CSS Folder: All Cascading Style Sheet files go here. They end in .css. You can name the folder css.

Images Folder: All images go here (jpg, png, gif, etc). You can name the folder images or img.

JavaScript Folder: All JavaScript files go here. They end in .is. You can name the folder javascript or js.



Attributes

• Properties associated with each tag.

<tag name="value"></tag> is the structure.

Global Attribute:

• Title : Add extra information (hover).

• Style : Add style information(font, background, color, size).

• <img src= "url" width = "100"5

src is the attribute used in image tag to define path.

• Width is attribute used to define width in pixels.

• Alt i.e alternate text if image is not loaded.

• Name of the link .

href used to define path of the link.

Basic Tags

• Enclosed within <>

• Different tags render different meaning.

<title> tag

• Whatever is written this tag comes up in the web page's tab.

• Defines the title of the page.

Syntax: <title>Home</title>

• tag

Defines the paragraph.

Syntax: This is our first Paragraph

<H1> - <H2>

Headings Are Important

1. Search engines use the headings to index the structure and content of your web pages.

2.Users often skim a page by its headings. It is important to use headings to show the document structure.

3.<h1> headings should be used for main headings, followed by <h2> headings, then the less important <h3>, and so on...

Note: Use HTML headings for headings only. Don't use headings to make text BIG or bold.

<pre>

The <pre> tag defines preformatted text.

Text in a <pre> element is displayed in a fixed-width font, and the text preserves both spaces and line breaks. The text will be displayed exactly as written in the HTML source code.

<pre>

Text in a pre element is displayed in a fixed-width font, and it preserves both spaces and line breaks

< pre>

<pre>

This text is in a fixed-pitch

font, and it preserves both spaces and line breaks

</pre>

Quotations, Abbreviations and Citations

1. <blockquote>

• To define along quotation or block quotation, <blockquote> tags are used.

• <blockquote> tag indents the quotation in browsers

2. <q>

• The HTML <g> tag defines a short quotation.

• Browsers normally insert quotation marks around the quotation.

3. <abbr>

• The HTML <abbr> tag defines an abbreviation or an acronym, like "HTML", "CSS", "Mr.", "Dr.", "ASAP", "ATM"

• Marking abbreviations can give useful information to browsers, translation systems and search-engines.

4. <address>

. The HTML <address> tag defines the contact information for the author/owner of a.document or an article.

- The contact information can be an email address, URL, physical address, phone number, social media handle, etc.

5. <cite>

- The HTML <cite> tag defines the title of a creative work (e.g. a book, a poem, a song, a movie, a painting, a sculpture, etc.).

6. <bdo>

• BDO stands for Bi-Directional Override.

- The HTML <do> tag is used to override the current text direction.

Text Tags

B element displays text in bold - and

I element displays text in italics » and

SMALL element makes the text appear smaller in browser » <small> and </small>

U element underlines a text -> <u> and </u>

DEL element encloses deleted text > <del> and </del>

INS element encloses inserted text -› <ins> and </ins>

STRONG element emphasizes the text - and

SUB element displays a text as subscript - «sub> and </sub>

SUP element displays a text as superscript - ^{and} em is used for emphasized text > and dfn is used for definition term » <dfn> and </dfn>

List of Self closing/Empty tags

• **<hr> tag**

• Stands for horizontal rule.

• Dividing the web page.

• **
 tag**

• Stands for break line.

• Moving to next line.

• **<img> tag**

• To add images in the web page.

• ** and tags**

• Both of these are used to group different tags .

• Acts like a container.

• Effective while styling.

Difference is block level and is inline level.

<img> tag

• Used to add images in a web page.

• Syntax: <img src="url"> o Self closing tag.

<a> tags

• Used to add links in a web page.

• Name of the link

List Tags

 tag

• Stands for ordered list.

• To define series of events that take place in some order.

• Example making a tea (like a flow chart).

• .....

• tag

• Stands for unordered list.

• To define series of events that take place where order is not important.

• Example your hobbies. o <ul>.....

• tag

Defines the list item.

• Used inside the ol and ul tag to define the events. o <I></i>

Nested list

Table

Rowspan

Colspan

HTML Forms

• <form>

• <input>

• <label>

<form>

<label for="fname">First name:</label>

<input type="text" id="fname" name="fname" value="Ritwik">
 <label for="Iname">Last name:</label>

<input type="text" id="Iname" name="Iname" value="Rai"> < /form>

<input tvpe="text"> Displays a single-line text input field

<input type="radio"> Displays a radio button (for selecting one of many choices)

<input type="checkbox"> Displays a checkbox (for selecting zero or more of many choices)

<input type="submit"> Displays a submit button (for submitting the form)

<input type="button">. Displays a clickable button

<form>

<input type="radio" id="male" name="gender" value="male"> <label for="male">Male</label>

<input type="radio" id="female" name="gender" value="female"> <label for="female">Female</label>

<input type="radio" id="other" name="gender" value="other"> <label for="other">Other</label>

</form>

1. <input>
2. <label>
3. <select>
4. <textarea>
5. <button>
6. <fieldset>
7. <legend>
8. <datalist>
9. <option>

What is CSS?

• CSS stands for Cascading Style Sheets.

• If HTML is the structure of the house then CSS is the look and feel of the house.

• It's the language to make our web pages presentable.

• Designed to make style sheets for web

Now let's try to break the acronym:

Cascading: Falling of Styles

Style: Adding designs/Styling our HTML tags

Sheets: Writing our style in different documents

History of CSS

1994 : First Proposed by Hakon Wium Lie on 10th October

1996: CSS was published on 17th November with influencer Bert Bos

Later he became co-author of CSS

1996: CSS became official with CSS was published in December

1997: Created CSS level 2 on 4th November

1998: Published on 12th May

CSS Editors

• Atom

• Brackets

• Espresso(Mac user)

Notepad++(Great for HTML & CSS)

• Komodo Edit (Simple)

• Sublime Text

CSS Basic Structure

```
Selector {
Property1: value;
Property2: value;
Property3: value;
}
```

• Selector: selects the element you want to target.
• There are few basic selectors like tags, id's, and classes.
• All forms this key - value pair.
• Keys: properties(attributes) like color, font-size, background, width, height etc.
• Value : values associated with these properties.
• Always remains same whether we apply internal or external styling.

CSS Comments

Comments don't render on the browser.
• Helps to understand our code better and makes it readable.
• Helps for debugging our code.
• Two ways to comment:
• Single line
• Multiple line

Types of CSS

There are 3 ways to write CSS in our HTML file.
• Inline CSS
• Internal CSS
o External CSS

Priority order

• Inline > Internal > External

Inline CSS

Before Css this was the only way to apply styles

Not an efficient way to write as it has lot a redundancy

• Self contained

• Uniquely applied on each element

• Idea of separation of concerns was lost

• Example:

<h3 stvle=" color:red"> Have a great day </h3>

 I did this, I did that

Internal CSS

• With the help of style tag we can apply styles within the HTML file

• Redundancy is removed

• But idea of separation of concerns still lost

• Uniquely applied on single document

• Example:

< style>

h1{

color:red;

</stvle>

<h3> Have a great day </h3>

External CSS

With the help of <link> tag in head tag we can apply styles

• Reference is added

• File saved with .css extension

• Redundancy is removed

• Idea of separation of concerns is maintained

• Uniquely applied on each document

• **Example:**

<link rel="stylesheet" type="text/css" href="')

h1{

color:red; //.css file

}

Selectors

Selector are used target elements and apply CSS

Five simple selectors

- Element Selector
- Id Selector
- Class Selector
- Group Selector
- Universal Selector

Priority of Selectors

Id > Class > Element

Element selector

• Used to select HTML elements by its name

• How do we do it ?

h1

color: red;

We selected the heading tag and then changed the color property ie text color to red. Now whatever is written in this tag (content) will have the text color as red

ID selector

• Id attribute is used to select HTML element

• Used to target specific or unique element

• How we do it

#unique

{

Color: red;

}

<h1 id="unique"> Hi </p>

We selected id and then changed the color property i.e text color to red. Now whatever is written in this tag (content) will have the text color as red

class selector

• Class attribute is used to select HTML element

• Used to target specific class of element

• How we do it

.group

{

Color: red;

<h1 class="group"> Hi </p>

We selected class and then changed the color property i.e text color to red. Now whatever is written in this tag (content) will have the text color as red

CSS Color

• There are different coloring schemes in CSS.

• 2 widely used techniques are as follows :-

o RGB

• This starts with rgb and takes 3 parameter

• 3 parameter basically corresponds to red, green and blue

• Value of each parameter may vary from 0 to 255.

•Eg: rgb(255,0,0); means color red

o HEX

• Hex code starts with # and comprises of 6 numbers which is further divided into 3 sets

Sets basically corresponds to Red, Green and Blue

• A single set value can vary from 00 to ff

• Eg: #ff0000 ; means color red

CSS Background

• Background-image

The background-image property is used to set an image as a background of an element. By default the image covers the entire element.

• Background-repeat

By default, the background-image property repeats the background image horizontally and vertically.

Some images are repeated only horizontally or vertically.

• Background-position

The background-position property is used to define the initial position of the background image. By default, the background image is placed on the top-left of the webpage.

```
<style>
body {
background: url(images/download.jpg);
background-repeat: no-repeat; background-attachment: fixed; background-position: center;
background-size: cover;
}
```

CSS Text and Font

Text Color

The color property is used to set the color of the text.

Text Alignment

The text-align property is used to set the horizontal alignment of a text.

A text can be left or right aligned, centered, or justified.

Text Decoration

The text-decoration property is used to set or remove decorations from text.

The value text-decoration: none; is often used to remove underlines from links.

Text Transformation

The text-transform property is used to specify uppercase and lowercase letters in a text

CSS Text and Font

CSS Font property is used to control the look of texts

The font-style property is mostly used to specify italic text.

CSS Font color: This property is used to change the color of the text. (standalone attribute)

CSS Font family: This property is used to change the face of the font.

CSS Font size: This property is used to increase or decrease the size of the font.

CSS Font style: This property is used to make the font bold, italic or oblique.

CSS Font variant: This property creates a small-caps effect.

CSS Font weight: This property is used to increase or decrease the boldness and lightness of the font

Font Family:

Serif: Serif fonts include small lines at the end of characters. Example of serif: Times new roman, Georgia etc.

Sans-serif: A sans-serif font doesn't include the small lines at the end of characters. Example of Sans-serif: Arial, Verdana etc

Font Style:

The font-style property is mostly used to specify italic text.

This property has three values:

normal - The text is shown normally italic - The text is shown in italics

oblique - The text is "leaning" (oblique is very similar to italic, but less supported)

Font Size:

The font-size property sets the size of the text. pixel/16 = 1 em.

CSS Font Variant:

CSS font variant property specifies how to set font variant of an element. It may be normal and small-caps.

Code for the editor:

<style>

p { font-variant: small-caps; } h3 < font-variant: normal;

< style>

CSS Font Weight:

CSS font weight property defines the weight of the font and specify that how bold a font is. The possible values of font weight may be normal, bold, bolder, lighter or number (100, 200..... upto 900).

Code for the editor:

This font is bold. This font is bolder. This font is lighter.

Pseudo classes

CSS pseudo-classes

A pseudo-class can be defined as a keyword which is combined to a selector that defines the special state of the selected elements. It is added to the selector for adding an effect to the existing elements based on their states.

Syntax

A pseudo-class starts with a colon (:). Let's see its syntax.

selector: pseudo-class {

property: value;

Pseudo-class

:active - It is used to add style to an active element.

:hover - It adds special effects to an element when the user moves the mouse pointer over the element.

:link - It adds style to the unvisited link.

:visited - It adds style to a visited link.

first-child - It adds special effects to an element, which is the first child of another element.

Example

```
<body>
<h1>Hello world </h1>
<h2>This is an example of :hover pseudo class</h2>
 <h3>Click the following link to see the effect</h3>
 <a href="https://www.google.com">Click the link</a>
<a href="https://www.youtube.com">Click the link</a>
 </body>

<style>
body{
text-align:center;
}
h1:hover‹ color:red;
a:visited{
color: red;
}
a:active‹ color: yellow;
}
a:link{
color:green;
}
</style>
```

CSS Border

• Helps in setting up the border for HTML elements

There are 4 properties that can help in setting up of border:

• Width - sets the width of the border

• Style - sets the style of border; Eg: solid, dashed etc.

• Color - sets the color of the border

• Radius - determines the roundness of the border

• You can set the border for specifically top, right, bottom and left

• We can also club top and bottom together and same goes for left and right

• Eg: border-width: 2px 5px; sets top and bottom 2px; left and right 5px

• Border can also be set in a single line

• Eg: border : 2px solid blue;

CSS Box Model

Every element in CSS can be represented using BOX model

It helps developer to develop and manipulate the elements

• It consist of 4 edges

• Content edge - It comprises of the actual content

• Padding edge - It lies in between content and border edge

• Border edge - Padding is followed by the border edge

• Margin edge - It is outside border and controls margin of the element

• **Example:**

```
#styled{
border: 2px solid blue;
margin: 5px;
padding: 20px;
content: 50px;
}
```