* HTML *

The length of url is limited (2048 characters)

What is HTML ?
- hyper text markup language
- standard markup language for creating web pages.
- describes the structure of web page
- consists the series of elements
- html elements tells the browser how to display the content
- HTML elements label pieces of content such as "this is heading", etc.

- <!DOCTYPE html> declaration defines that this document is an HTML5 document

<html> element is the root element of an HTML page.

<head> head element contains meta information about HTML page.

<title> element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)

<body> element defines the document's body, and is a container for all the visible contents such as headings, paragraphs, images, hyperlinks, tables, lists etc.

What is an HTML element ?
An Html element is defined by a start tag, some content, end tag.

Note:- some elements does not contain content

 empty elements.

* HTML headings -
<h1> to <h6> → most imp to least imp.

* HTML paragraphs -
<p> ..

* HTML links →

<a href = "www.something.com" > This is <las link

The link's destination is specified in the href attribute

* Attributes are used to provide additional information about html elements

* HTML images

<src → sourcefile

alt → alternative text

width

height

* Nested html elements

HTML elements can be nested (this means that elements can contain other elements).

* HTML is not case sensitive:

<p> <P> or <h1> <H1>.

* HTML attributes –

HTML attribute provide additional information about html elements.

- All html elements can have attributes.
- Attributes provide additional information about elements
- attributes are always specified in start tag.
- attributes usually come in name/value pairs like : name = "value".

i) the href

ii) src ——— absolute url
Relative url

iii) height

iv) width

v) alt

vi) style

vii) lang

viii) title
↓
defines some extra info about an element.

* HTML headings –

<h1> → most imp <h6> → least imp

for search engine optimization

Note → browser automatically add margin before and after a heading

→ only for headings not for bold or big

* HTML Paragraphs – .

A paragraph always start on a new line, and is usually a block of text.

* HTML horizontal Rules →

The <hr> tag defines a thematic break in an HTML, and is most often displayed as a horizontal rule.

<hr> ~~tag~~ element is used to seperate content (or define a change) in an HTML page.

The <hr> tag is an empty tag, which means that it has no end tag.

* The break tag (HTML line break)

The HTML
 element defines a line break.

* The HTML <pre> element. <pre>

preformatted text.

it preserves both spaces and line breaks

* HTML Styles

css css

<tagname style = "property : value;" >

* HTML formatting –

HTML contains several elements for defining text with a special meaning.

<b> → bold text

 → imp. text

<i> → Italic text

 → Emphasized text

<mark> → marked text

<small> → smaller text

<del> → deleted text

<ins> → inserted text

<sub> → subscript text

<sup> → superscript text

* HTML Quotations & citation Elements →

<blockquote> ⟶ element defines a section that is quoted from another source

<q> ⟶ tag defines the short quotation

<abbr> ⟶ tag defines an abbreviation or an acronym.] → use title attribute

<address> ⟶ tag defines the contact info for the author/owner of a document or an article.

<cite> ⟶ tag defines the title of a creative work.

<bdo> ⟶ bidirectional override

* HTML Comments -:

<!-- write your comment -->

can help document your HTML source code.

* HTML Colors →

RGB ⟶ rgb(red, green, blue). 0 to 255.

0, 0, 0 ⟶ black

255, 255, 255 → white

RGBA ⟶ rgba(red, green, blue, alpha)

↳ opacity.

0 to 1

↳ fully transparent

not at all

HEX ⟶ hexadecimal color

#RRGGBB

HSL → hue, saturation, Lightness

hue → degree on color wheel [0 to 360]

saturation → percentage value. 0% shade of gray & 100% is full color.

lightness → percentage
0% → black
100% → white

HSLA → hue, saturation, lightness, alpha.
↓ degree

* HTML CSS → 0 to 360

inline css
internal css
External css → <link rel="stylesheet"
href="styles.css">

* HTML Links →

The HTML <a> tag defines a hyper link.
↓ define the link address
 link text .

By default, links will appear as follows in all browsers
- An unvisited link is underlined & blue
- A visited link is underlined & purple
- An active link is underlined & red.

target attribute specifies where to open the linked document
- self → Default: Opens the document in the same window/tab as it was clicked.
- _blank → opens the document in a new window or tab
- _parent → opens the document in the parent frame
- _top → opens the document in the full body of the window.

mailto: scheme inside the href attribute to create a link that opens the user's email program

* link colors –

```
<style>
a:link {
    color:
    background-color:
    text-decoration: none;
    }
a:visited {
        }
a:hover {
        }
a:active {
        }
</style>
```

* HTML Bookmarks –:

```
<h2 id = "c4" > Chapter 4 </h2>
<a href = "#c4" > Jump to chapter 4 </a>
```

* HTML Images –:

Images can improve the design and the apperance of a web page.

```
<img src = " " alt = " " >
```

Uses of map in image

```
<img src = " " alt = " " usemap = "#worldmap" >
<map name = "worldmap">
    <area shape = "rect" coords = " " alt = " " href = "
</map>
```

background-image: url(' '); in CSS

<picture> element allows you to display different pictures for different devices or screen sizes.

when to use the picture element?
1. Bandwidth 2. format support.

* HTML favicon –:
A favicon is small image displayed next to the page title in browser tab.

<link rel="icon" type="image/x-icon" href="/path">.
↳ defines the relationship b/w a document and an external resource.

* HTML tables –
HTML tables allow web developers to arrange data into rows and columns.

<table> → defines a table
<th> → Defines a header cell in a table
<tr> → Defines a row in a table
<td> → Defines a cell in a table
<caption> → defines table caption
<colgroup> → specifies a group of one or more columns in a table for formatting.
<col> → specifies column properties for each column within a <colgroup> element.
<thead> → Groups the header content in a table
<tbody> → Groups the body content in a table
<tfoot> → Groups the footer content in a table.

```
<table>
    <tr>
        <th> </th>
        <td> </td>  </tr> </table>
```

* table borders

```
table, th, td {
    border : 1px solid black;
}
border-collapse : collapse;
border-radius : 10px;
border-color : ;
```

solid → dotted, dashed, solid, double, groove, ridge, inset, outset, none, hidden

* table sizes :-

HTML tables can have different sizes for each column, row or the entire table.

width: → in css

* Padding & spacing -

HTML tables can adjust the padding inside the cells, and also space between the cells.

padding: → space between cell edges & the cell content.

border-spacing: → space between each cell

* colspan & rowspan *

colspan → to make a cell span over multiple columns

rowspan → to make a cell span over multiple rows

* Table styling → use css

<colgroup> → must be child element of table element

<col span="value of col" style="" >

</colgroup>

* HTML Lists →

HTML lists allow web developers to group a set of related items in lists.

unordered list →

```
<ul>
  <li></li>
<ul>
```

↓

list-style-type: (css)

- disc
- circle
- square
- none

ordered list

```
<ol>
  <li></li>
<ol>
```

↓

type =

- A
- a
- 1
- I

(start)

description list

```
<dl>
  <dt> → term
  <dd> → data
</dl>
```

* HTML Block & Inline Elements →

i) Block level elements →

- A block-level element always start on a new line, and the browser automatically add some space (a margin) before and after the element.)
- always takes up the full width available.

ii) Inline Elements → Cannot Contain block level element

- An inline element does not start on a new line.
- takes up as much width as necessary.

 → Defines a section in a document (block level)

 → Defines a section in a document (inline)

* HTML classes → (css stylesheet & javascript)

- The HTML class attribute is used to specify a class for an HTML element.
- multiple HTML elements can be share the same class.
- class is case sensitive

HTML id attribute –

- The HTML id attribute is used to specify a unique id for an HTML element.
- You cannot have more than one element with the same id in an HTML document.
- case sensitive
- cannot start with number and must not contain whitespaces.

* HTML Iframes →

An HTML iframe is used to display a web page within a web page.

<iframe src='url' title=" "></iframe>

* HTML Javascript →

Javascript makes HTML pages more dynamic & interactive

<noscript> → Browser does not support scripts then alternative msg shows by noscript tag/element.

* Best Practices → relative Paths

* HTML Head –

<head> → container for metadata (data about data)

* HTML Layout –

websites often display content in multiple columns (like a magazine or a newspaper)

* HTML Layout Elements —:

<details>
<summary>

Semantic HTML tags

* HTML layout techniques —:

1) css framework
2) css float property
3) css flex box
4) css grid

* <code> </code>

* HTML style Guide —

1) Always declare document type
2) Use lowercase element names
3) close all html elements
4) use lowercase attribute names
5) always quote attribute values
6) always specify alt, width, and height for images
7) spaces & equal signs
8) Avoid long code lines
9) Blank lines & Indentation
10) Never skip the title element.
11) Do not ommit <html> </body>, <head>
12) close empty elements it optional
    XML & XHTML keep close empty elements
13) Add lang attribute

14) Meta Data →

To ensure proper interpretation & correct search engine indexing, both the langauges and character encoding. should be defined as early as possible in an HTML document:

15) Setting The viewport

The viewport is the user's visible area of a web page. It varies with the device- it will be smaller on mobile phone than on a computer screen.

```
<meta name = "viewport" content = "width = device-width,
                                   initial-scale : '1.0' >
```

(15) Use HTML comments

(16) using stylesheet -:

(17) loading Javascript in HTML *

* HTML Uniform Resource Locators -

```
https://www.w3schools.com/html/default.asp
scheme://prefix.domain:port/path/filename
```

scheme — defines the type of Internet service

prefix — defines a domain prefix

domain — defines the internet domain name

port — defines the port number at host

path → defines a path at the server

filename → defines the name of a document or resource

* HTML Vs XHTML * Extensible

XHTML is a stricter, more XML-based version of HTML.

* HTML forms →

```
<form>
    <input id = name = type = >
    <label for = 'name' > </label>.
<form>
```

<text area>

<fieldset>

- An HTML form is used to collect user input. The user input is most often sent to server for processing.

- If name attribute is ommited then value of the input field will not be sent at all.

* HTML form attributes —

1) Action —
The action attribute defines the action to be performed when the form is submitted. Usually, the form data is sent to a file on the server when user clicks on submit button.

2) Target

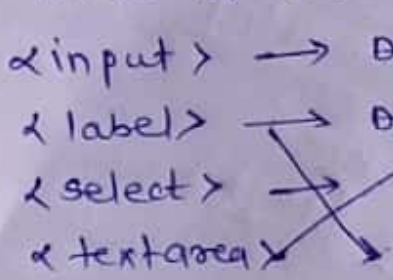
3) Method → Get, post.

4) Autocomplete → autocompletes

5) novalidate → does not validate

* HTML form elements :-

The HTML <form> element can contain one or more of the following form elements.



<input> → Defines an input control
<label> → Defines an multiline input control
<select> → dropdown
<textarea> → label for input
<button> → clickable button
<fieldset> → Groups related elements in form
<legend> → name caption for field set
<datalist> → list of pre-defined options
<output> → result of a calculation
<option> → option in dropdown list
<optgroup> → groups related options.

* HTML multimedia →

(1) Video tag —

```
<video controls autoplay muted loop>
  <source src="" type="" >
</video>
```

(2) Audio

```
<audio controls autoplay muted loop>
  <source src="" type="" >
</audio>
```

<tracks> → Defines the text tracks in media players.

* HTML Plugins →

<object data = " " > </object>

<embed> → embeded

<embed src = " " > .

* HTML Youtube → .

<iframe width = " " height = " "

src = " / ?autoplay = 1 & muted = 1

& playlist = id & loop = 1 .

& controls = 0 .

</iframe> .

* HTML Graphics →

(1) Canvas –

The HTML canvas element is used to draw graphic on a web page (need javascript to make it work)

< canvas id = " " width = " " height = " " > </canvas>

(2) SVG → Scalable vector Graphics

<svg> </svg> .

canvas	svg
- Resolution dependent	- Resolution independent
- No support for event handlers	- support for event handlers
- poor text rendering capabilities	- Best suited for application with large rendering areas
- You can save the resulting images as .png or .jpg	- slow rendering if complex
- well suited for graphic-intensive games	- no suited for game appl.