HTML

(Hyper Text Markup Language)

What is Hyper Text?

- Hyper means "beyond"
- Hyper text resembles text that contains content beyond what we see.

What is a Markup Language?

- The markup is derived from common computer terminology, where "marking up" is the process of preparing for presentation.
- Markup language is a presentation language.

Evolution of Markup Languages

- GML [Generic Markup Language] at "CERN" Labs
- SGML [Standard Generic Markup Language]
- Early 1990's "**Tim Berners Lee**" introduced "HTML" for "Mosaic" browser.
- IETF (Internet Engineering Task Force) **1993**
- **1995 HTML 2.0**
- **1997 HTML 3.2**
- **1997 HTML 4.0**

- **2014 HTML 5.0**
- **2017 HTML 5.2 [W3C and WHATWG]**
  Web Hypertext Application Technology Work
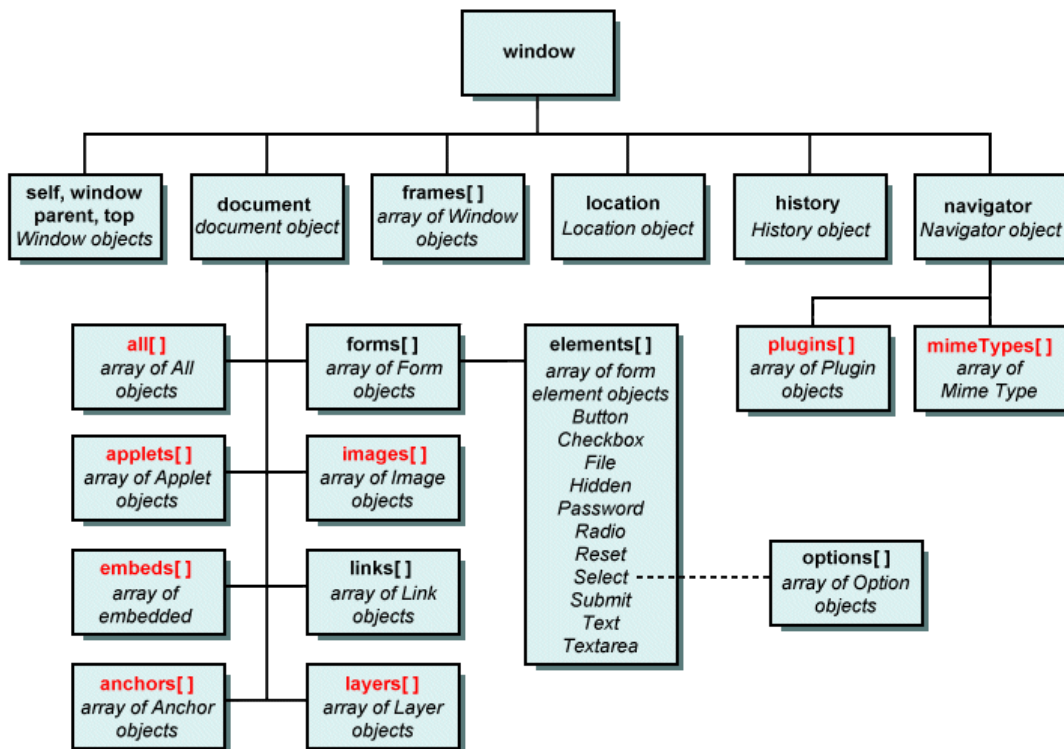 Group
  World Wide Web Consortium

What is DHTML?

- Dynamic HTML. [Obsolete – No Longer in use]

What is HTML?

- It is a markup language.
- It is used for presentation.
- HTML is used to present DOM.

What is DOM?

window

self, window parent, top *Window objects*

document *document object*

frames[ ] *array of Window objects*

location *Location object*

history *History object*

navigator *Navigator object*

all[ ] *array of All objects*

forms[ ] *array of Form objects*

elements[ ] *array of form element objects*
Button
Checkbox
File
Hidden
Password
Radio
Reset
Select
Submit
Text
Textarea

plugins[ ] *array of Plugin objects*

mimeTypes[ ] *array of Mime Type*

applets[ ] *array of Applet objects*

images[ ] *array of Image objects*

embeds[ ] *array of embedded*

links[ ] *array of Link objects*

options[ ] *array of Option objects*

anchors[ ] *array of Anchor objects*

layers[ ] *array of Layer objects*

- Browser presents content in a hierarchy called DOM.
- Document Object Model
- It is a hierarchy used to present contents in HTML.

What is Static DOM and Dynamic DOM?

- The DOM which is initially loaded by HTML is static.
- HTML can present static DOM.
- Static DOM can't handle interactions.
- JavaScript, jQuery, Angular JS, React etc. are used to convert the static DOM into dynamic DOM.

How HTML Presents the DOM?

- By using Elements

What are the elements used for presenting DOM?

- Normal Elements
- Void Elements
- RC Data Elements
- Raw Text Elements
- Foreign Elements

Element Type	Description
Normal Elements	- Elements which return a presentation directly on call back [without any additional attributes]. - Elements in HTML are built by using tags. - Normal Elements require a start tag and end tag. - Normal Elements will start returning presentation but can't stop implicitly. - They require explicit end tag.

	- Usually require start and end tags. Ex: ** Bold **
Void Elements	- The term void refers to element that doesn't return any presentation directly on call back. - Void means no return type. - They can return only the specific content and stop implicitly. - Void elements doesn't require "End Tag". Ex: **<img> tag Image – Element**
RC Data Elements	- Rich Content Elements - These elements will not allow any another element with in the context. Ex: **<textarea> </textarea>**
Raw Text Elements	- These elements are presented without a tag. Ex:

	© © ₹ ₹
Foreign Element	- These are HTML elements used in HTML but requires additional library. - Every browser can't understand these elements. - You have to import a library that makes the browser compatible with element. Ex: **SVG, MathML, Canvas**

What is Element and What is Tag?

- HTML presents using Elements.
- Elements are built by using Tags.

Image   **- Element**

<img>   **- Tag**

Anchor   **- Element**

<a>   **- Tag**

Bold   **- Element**

\<b\>   - Tag

What is difference between Attribute and Property?

- Attributes are used statically in Tags.
- Properties are use dynamically in Programming.

  var img = new Image();
  img.src = "shoe.jpg";   //src is property

- Every attribute of HTML tag doesn't have relative property.

Structure of HTML Page

- Every HTML page comprises of 2 sections at high level
    o Document Declaration
    o Document Scope

Document Declaration:

- It comprises of information about HTML version.
- It informs the parser that we are using HTML 5 to design web page.

- The document declaration in HTML 5 is defined by using the following Entity
  <!DOCTYPE html>

Note: Comments in HTML are written with in "<!-- your comments -->"

Document Scope:

- It specifies the boundary of HTML document.
- It defines the start and end of every document in browser.
- Document scope in HTML is defined by using
  <html>
  </html>
- Every document scope must specify which language content it is presenting.
- Language is defined by using the attribute **"lang"**
  <html lang="en-in">
  </html>

Sections in HTML document scope

- Every HTML document scope comprises of 2 major sections
  - o Head Section

o Body Section

Head Section:

- Head section comprises of content, which is ***intended to load into memory*** when page is requested by client.
- The content from memory of browser can be accessed by page or browser when ever required.
- Typically head section is defined with **<head> </head>**
- It comprises of contents like
    o Title
    o Link
    o Meta
    o Script
    o Style

Title Element:

- It comprises of title, which is displayed in the browser title bar.
- The title is also used in bookmarking the page.
    <html lang="en-IN">
     <head>
        <title>Amazon Shopping</title>
     </head>

</html>

Link Element:

- It is used to link external files to your web page.
- External files include short cut icons, stylesheets etc.

Ex: Link Shortcut Icon to Web Page [Favicon]

- Favicon must be an "icon" file with extension ".ico"
- Size of icon is between 16x16 pixels and 32x32 pixels

- Create a new folder by name "Icons" in your project.
- Add a new file into "Icons" folder by name "favicon.ico"
- Right Click on Icons folder and "Reveal in Explorer"
- Right Click on "icon file" and select "Open with Paint"
- Set the page size 32 x 32 pixels
- Design your icon
- Save
- Go to your web page and link the icon file
  <html lang="en-IN">
    <head>
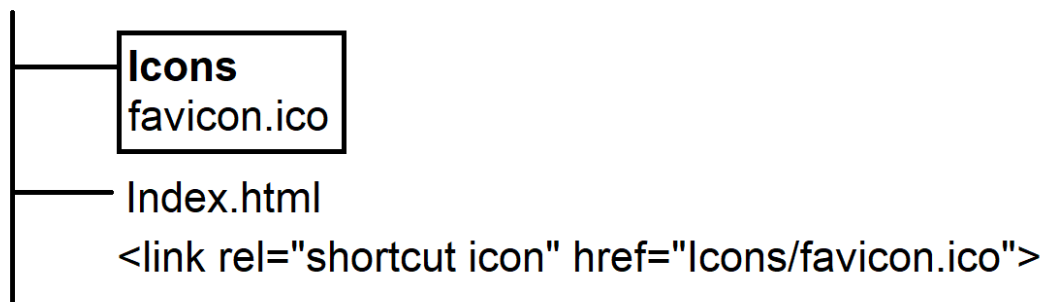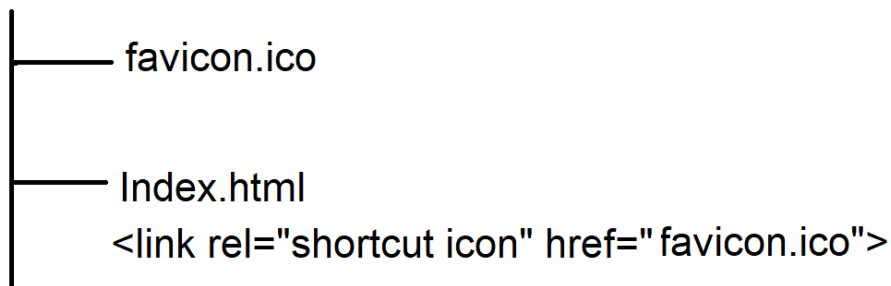   **<title>Amazon Shopping</title>**

```
        <link rel="shortcut icon"
href="Icons/favicon.ico">
        </head>
</html>
```
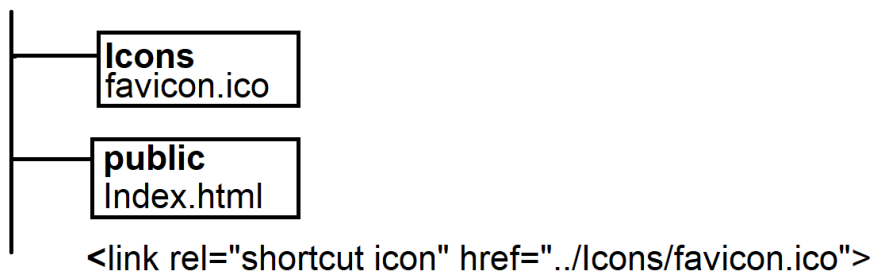
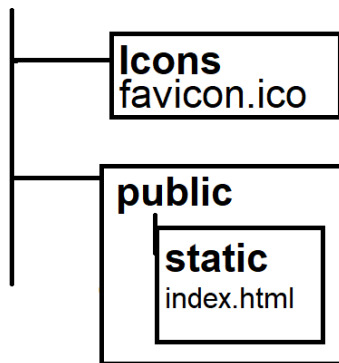**Note:** Never use physical path directly in web development.

FullStack-8PM

```
├───── Icons
│       favicon.ico
│
├───── Index.html
        <link rel="shortcut icon" href="Icons/favicon.ico">
```

FullStack-8PM

```
├───── favicon.ico

├───── Index.html
        <link rel="shortcut icon" href="favicon.ico">
```

FullStack-8PM

```
├───── Icons
│       favicon.ico
├───── public
        Index.html
        <link rel="shortcut icon" href="../Icons/favicon.ico">
```

FullStack-8PM

```
┌─────────────────────┐
│ Icons               │
│ favicon.ico         │
└─────────────────────┘

┌─────────────────────┐
│ public              │
│   ┌───────────────┐ │
│   │ static        │ │
│   │ index.html    │ │
│   └───────────────┘ │
└─────────────────────┘
```

<link rel="shortcut icon" href="../../Icons/favicon.ico">

FAQ: When to use "\" back slash "/" forward slash?

- Virtual Path: "/" forward slash
  "Icons/favicon.ico"
- Physical Path: "\" back slash
  "C:\Icons\Favicon.ico"

Meta in Head Section

- The terms meta refers to "Meta Data".
- Meta Data contains information about your page, which is provided to SEO [Search Engine Optimization] to make the page more SEO friendly.
- **Meta is one of the options used in SEO. It Is not only the option for SEO.**
- Meta is also used for Responsive Pages. **It is not only the options for Responsive.**

```html
<!--Document declaration-->
<!DOCTYPE html>
<!--Document Scope-->
<html lang="en-IN">
  <head>
    <title>Amazon Shopping</title>
    <link rel="shortcut icon" href="../Icons/favicon.ico">
    <meta charset="utf-8">
    <meta name="keywords" content="Best Software Traning, Best IT Training, in Hyd, Chennai, US">
    <meta name="description" content="something about your website..">
    <meta name="author" content="Author Name for Blog">
    <meta http-equiv="refresh" content="4">
  </head>
</html>
```

Body Section

- It comprises of content to display in browser workspace.
- The body section is configured by using "<body>" element.

  Syntax:

  <body>

  Some content

  </body>
- Body tag comprises following attributes

Attribute	Description
bgcolor	It sets a background color for page.
text	It sets color for text in page. [Foreground color] Ex: **<body bgcolor="red"** **text="yellow">** **Welcome to Amazon** **Shopping** **</body>**
background	It sets a background image for body section. Ex:

	**<body background="../Images/banner3.jpg" text="white">
	     Welcome to Amazon
	  Shopping
	</body>**

alink	It defines color for active link.
vlink	It defined color for visited link. Ex: **<body vlink="green" alink="red"> Home Amazon </body>**
leftmargin rightmargin topmargin bottommargin	Sets the space between the content and browser window. Ex: <body leftmargin="50" rightmargin="50" topmargin="50" bottommargin="20"> Some paragraph.. </body>
align	It aligns the entire body content to left, center, right or justify

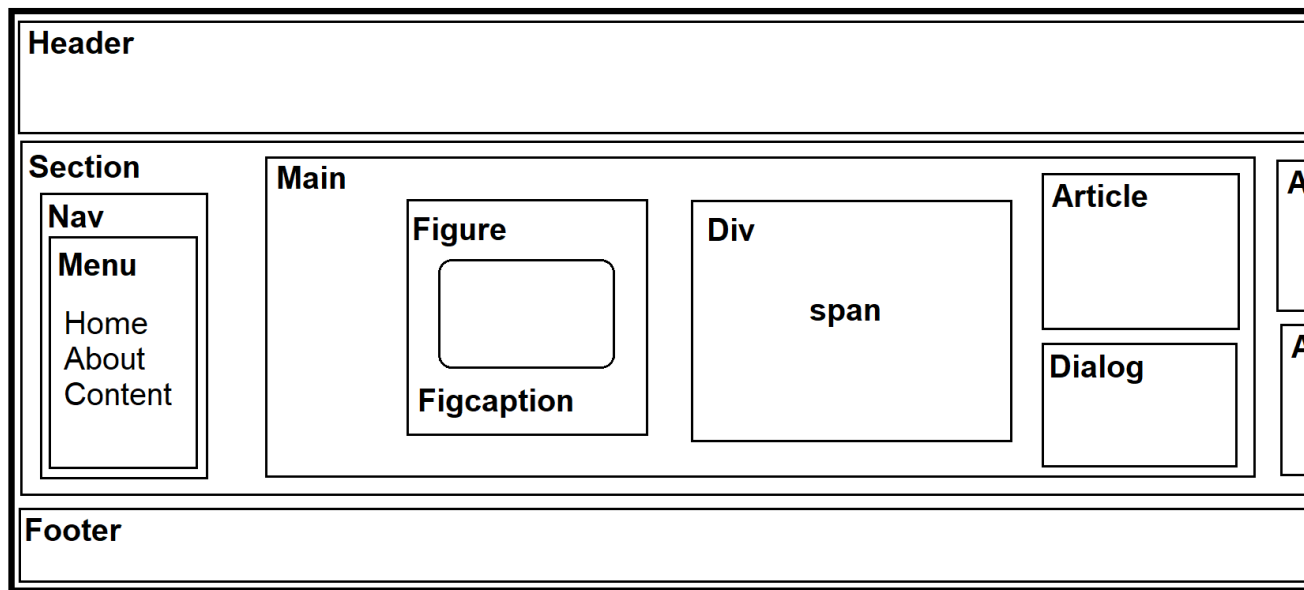|	Ex: <body align="justify"> </body>

Semantics of HTML Body

- Semantic elements are the elements used for a generic purpose.
- HTML 5 body section introduced new semantics that can make body content more SEO friendly.
- HTML 5 body section related semantic elements are container elements.
- A container comprises of content like text, headings, tables, pictures etc.

aside	It is a container used to define content, which is not relative to current website.
article	It is a container used to define content, which is relative to the current website and which summarizes the topics.
dialog	It is a container, which can popup and allow interactions with page.

figure	It is used to encapsulate any image with caption.
figcaption	It is used to define a caption for image.
header	It defines the content to display at the top margin of page.
footer	It defines the content to display at the bottom margin of page.
section	It defines the content between header and footer.
main	It defines the main content in section.
nav	It defines the navigation area.
menu	It defines the items used for navigation.
div	It is a container used for division of content in page.
span	It is a container used to span with existing content.

The layout diagram shows:
- **Header** (top bar)
- **Section** containing **Nav** with **Menu** (Home, About, Content)
- **Main** containing **Figure** with **Figcaption**, **Div** with **span**, **Article**, **Dialog**
- **Footer** (bottom bar)

Ex:

```
<!DOCTYPE html>
<html>
   <head>
      <title>Layout Design</title>
      <style>
         header
         {
            background-color: maroon;
            color:white;
            text-align: center;
            font-size: 24px;
```

```css
        border-radius: 30px;
}
footer
{
    background-color: maroon;
    color:white;
    text-align: center;
    font-style: italic;
    border-radius: 30px;
}
section {
    height: 500px;
}
main {
    text-align: center;
}
menu div
{
    width: 200px;
    background-color:maroon;
```

```css
        color:white;

        text-align: center;

        font-size: 23px;

        margin-top: 20px;

        padding: 10px;

        border-radius: 30px;
    }
    menu div:hover {

        background-color: black;

        color:white;

        cursor: grab;
    }
    main {

        font-size: 23px;
    }
    main span {

        background-color: yellow;

        color:red;

        font-size: 32px;

        font-weight: bold;
```

```css
        }
        aside {
            float:right;
            height: 40px;
            width: 100px;
            border:2px solid maroon;
            font-size: 20px;
        }
        article {
            text-align: center;
            margin-top: 100px;
            margin-left: 600px;
            position: absolute;
            border:2px dotted maroon;
            padding: 20px;
            border-radius: 20px;
            background-color: lightgreen;
        }
    </style>
</head>
```

```html
<body>
  <header>
    Amazon Shopping
  </header>
  <section>
    <aside>
      ads here..
    </aside>
    <article>
      <div>DEC Sale 70%</div>
      <div>Latest Updates</div>
      <div>News..</div>
    </article>
    <nav>
      <menu>
        <div>Home</div>
        <div>Electronics</div>
        <div>Footwear</div>
        <div>Fashion</div>
      </menu>
```

```html
        </nav>

        <main>

            Year End Sale. <span>Amazon offers 50%
OFF</span>. Ends on DEC - 30.

                <figure>

                    your image

                    <figcaption>Fig:1</figcaption>

                </figure>

            </main>

            <dialog open>

                Chat with HR

            </dialog>

        </section>

        <footer>

            <div>&copy; copyright 2020 Amazon</div>

            <div>Electronics | Footwear | Fashion |
Support</div>

        </footer>

    </body>

</html>
```
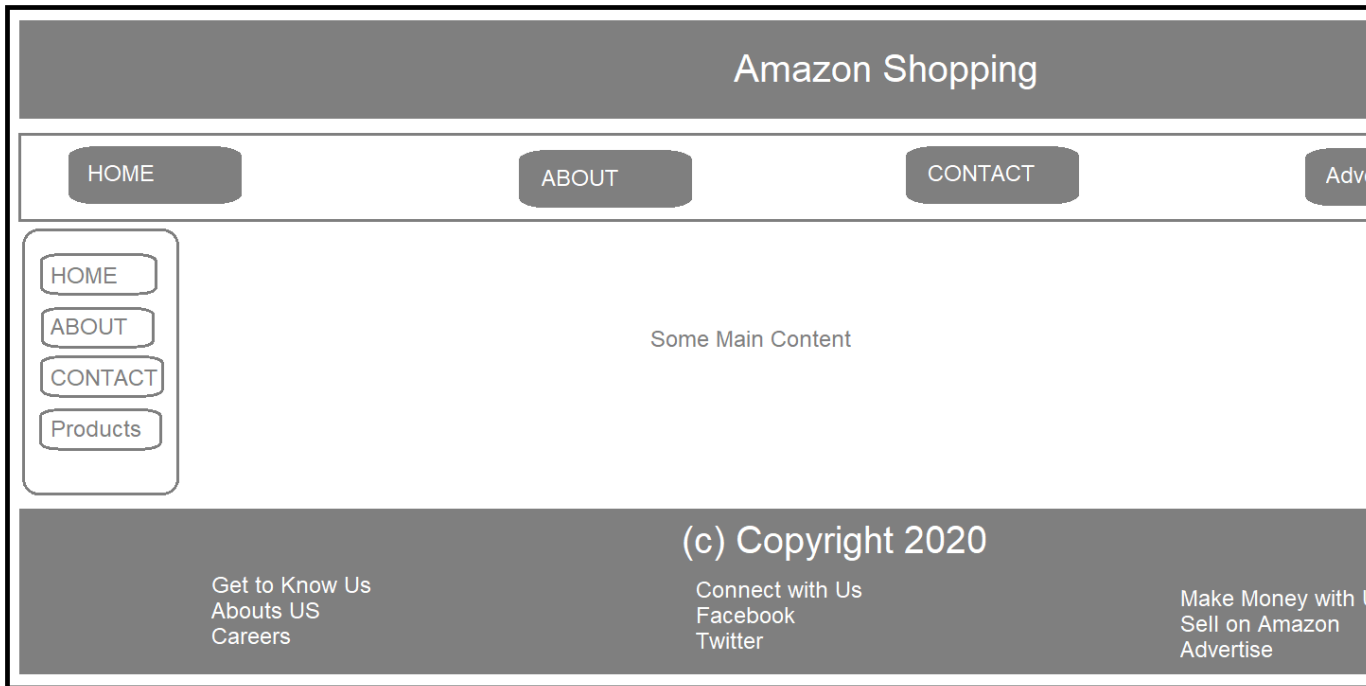
Task:

Amazon Shopping

HOME ABOUT CONTACT Adv

HOME
ABOUT
CONTACT
Products

Some Main Content

(c) Copyright 2020

Get to Know Us
Abouts US
Careers

Connect with Us
Facebook
Twitter

Make Money with
Sell on Amazon
Advertise

How to arrange content into columns?

- By using style attributes
  o column-count
  o column-rule
  o column-gap

Ex:

<!DOCTYPE html>

<html>

  <head>

    <title>News Online</title>

    <style>

```css
header {
    font-size: 30px;
    font-weight: bold;
    text-align: center;
    background-color: gray;
    color:white;
    padding: 10px;
}
section {
    margin-top: 20px;
    column-count: 5;
    column-gap: 30px;
    column-rule: dotted;
    text-align: justify;
}
footer {
    margin-top: 20px;
    column-count: 4;
    text-align: left;
    background-color:gray;
```

```
            color:white;

            padding: 20px;

        }

    </style>

</head>

<body>

    <header>

        THE HINDU

    </header>

    <section>

        <div>
```

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agreement that applies to you. You can review linked terms by pasting the (aka.ms/) link into a browser window.

```
    </div>
  </section>
  <footer>
    <div>
        <div>Movie News</div>
        <div>Sports</div>
        <div>Stock</div>
    </div>
    <div>
        <div>Facebook</div>
        <div>Twitter</div>
        <div>YouTube</div>
    </div>
    <div>
        <div>editor@hindu.com</div>
        <div>www.epaper.com/hindu</div>
        <div>www.thehindu.com</div>
    </div>
```

```
        <div>

            <div>editor@hindu.com</div>

            <div>www.epaper.com/hindu</div>

            <div>www.thehindu.com</div>

        </div>

    </footer>

  </body>

</html>
```

Ex:

```
<!DOCTYPE html>

<html>

  <head>

    <title>Menu</title>

    <style>

        menu div {

            width: 200px;

            height: 30px;

            padding: 10px;

            background-color: darkcyan;

            color:white;
```

```
            text-align: center;

            border-radius: 10px;

            display: inline;

            margin-top: 50px;

        }

    </style>

</head>

<body>

    <header>

        <nav>

            <menu>

                <div>Home</div>

                <div>About</div>

                <div>Contact</div>

                <div>Login</div>

            </menu>

        </nav>

    </header>

</body>

</html>
```

Basic HTML elements and Entities for presenting content in body section

- **Line Breaks**
    - Browser ignores the line breaks given in editor.
    - You have to manually add line break by using **"\
"** element.

Ex:

\<!DOCTYPE html>

\<html>

  \<head>

    \<title>Demo\</title>

  \</head>

  \<body>

    Welcome to HTML.\

    This is our static Page.\
 \

    Contents in body section \
 without semantics.

  \</body>

\</html>

**FAQ: What is difference between \
 and \
?**

- There is not such element called "<br/>" in HTML.
- Always use only
-
 is used to indicate that it is a self-ending or void element.

- **Blank Spaces**
  o Browser ignores additional spaces between words and characters.
  o Browser allows only one characters space between words or chars.
  o To add manual space, you have to use " " [non-breakable space].
  o It is "Raw Text Element"

Ex:

<!DOCTYPE html>

<html>

  <head>

    <title>Demo</title>

  </head>

  <body>

    H T M L

  </body>

</html>

- **Pre-formatted Text**
    - It is used to present the content exactly as defined in source code.
    - It will keep the spaces and line breaks are defined in editor.
    - The content must be defined with-in "<pre>" element.

Ex:

<!DOCTYPE html>

<html>

  <head>

    <title>Demo</title>

    <style>

      pre {

        background-color: lightgrey;

        border:2px solid black;

        padding:10px;

        width: 400px;

      }

    </style>

```
    </head>
    <body>
      <div>Sample C Program</div>
      <div>
        <pre>
        #include &lt;stdio.h&gt;
        main
        {
            printf("Welcome to HTML");
        }
        </pre>
      </div>
    </body>
</html>
```

- **Code Element**
    o <code> is an element used to define code snippet in web page.
    o It allows to browser and SEO to understand that the content enclosed in some computer code.

Ex:

```html
<!DOCTYPE html>
<html>
   <head>
      <title>Demo</title>
      <style>
         pre {
            background-color: lightgrey;
            border:2px solid black;
            padding:10px;
            width: 400px;
         }
      </style>
   </head>
   <body>
    <div>Sample C Program</div>
    <div>
       <pre>
       <code>
       #include &lt;stdio.h&gt;
       main
```

```
      {
         printf("Welcome to HTML");
      }
      </code>
      </pre>
   </div>
   </body>
</html>
```

Variables in HTML Code Presentation:

- You can <var> for variable in HTML.
- Variables are designated with <var> for code snippet.

Ex:

```
<!DOCTYPE html>
<html>
   <head>
      <title>Demo</title>
   </head>
   <body>
      <code>
```

```
        <var>x</var> = 10; <br>

        <var>y</var> = 20; <br>

        <var>z</var> = <var>x</var>  + <var>y</var>;

        </code>

    </body>

</html>
```

Address in HTML body

- The <address> element is used to define your contact details in web page.
- SEO uses the address and can display in search results.

Ex:

```
<!DOCTYPE html>

<html>

    <head>

        <title>Demo</title>

    </head>

    <body>

     <address>

         Naresh-I-Technologies <br>
```

hr@nareshit.in

phone: 040-59595842

</address>

</body>

</html>

Headings in HTML

- Headings need a different appearance in page.
- HTML provides pre-defined heading levels.
- HTML headings levels are defined by using <hn>.
- "n" refers to level number from 1 to 6.
  Syntax:
  <h1> </h1>
  <h2> </h2>

  ………………
  <h6> </h6>
- Heading levels from 1 to 6 will decrease the size.
- Heading can be defined with "align" attribute, which can align left, center, right or justify.

FAQ: Why to use heading element for headings?

- Heading elements will make your topics SEO friendly.

- SEO can identify the topics on your page if they are defined in heading.

Note:

- Don't use headings for highlighting any word or sentence in a paragraph.
- Heading by default will have line break above and below.
- Don't use too many headings in a page. SEO can SPAM your page.

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Demo</title>
  </head>
  <body>
    <h1 align="center">HTML</h1>
    <h2>Web Terminology</h2>
    <h3>Web Site</h3>
    It is a virtual directory on web server.
    <h3>Web Page</h3>
```

It is a Hypertext document.

    </body>

</html>

Data List with Terms and Definitions:

- Data List is defined with <dl>
- Data list is a collection of terms defined with <dt> and definition defined with <dd>
  Syntax:
  <dl>
    <dt>Term</dt>
    <dd> Definition </dd>
    <dt> Term </dt>
    <dd> Definition </dd>
    <dd> Definition </dd>
  </dl>

Ex:

<!DOCTYPE html>

<html>

  <head>

    <title>Demo</title>

    <style>

```html
        dt {
            font-weight: bold;
            background-color: lightgrey;
        }
    </style>
</head>
<body>
    <h1 align="center">HTML</h1>
    <h2>Web Terminology</h2>
    <dl>
        <dt>Web Server</dt>
        <dd>It resembles software and hardware.</dd>
        <dd>It handle the request and response.</dd>
        <dt>Web Site</dt>
        <dd>It is a virtual directory.</dd>
        <dt>Web Page</dt>
        <dd>It is an hyper text document.</dd>
    </dl>
</body>
</html>
```

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Demo</title>
    <style>
      dt {
        font-weight: bold;
        background-color: lightgrey;
      }
    </style>
  </head>
  <body>
    <h2>Product Details</h2>
    <dl>
      <dt>Product Name</dt>
      <dd>Samsung TV</dd>
      <dt>Product Price</dt>
      <dd>45600.54</dd>
      <dt>Stock Status</dt>
```

```
        <dd>Available</dd>

      </dl>

    </body>

</html>
```

Details and Summary

- It is used to display the content in detail only when required.
- It allows to expand and collapse your content.
- It saves the screen space.
  Syntax:
  <details>
  <summary> Your Title </summary>
  some text…
  </details>
- You can specify "open" attribute to show the details.

Ex:

```
<!DOCTYPE html>

<html>

  <head>

    <title>Demo</title>
```

```html
    <style>
        dt {
            font-weight: bold;
            background-color: lightgrey;
        }
    </style>
  </head>
  <body>
    <h2 align="center">Web Development</h2>
    <details open>
      <summary>HTML</summary>
```

HTML is a markup language.Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note

that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.

</details>

<details>

    <summary>CSS</summary>

    CSS defines style for HTML elements.Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.

</details>

<details>

<summary>JavaScript</summary>

It is used to handling client side interactions. Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.

```
    </details>
  </body>
</html>
```

Ex:

```
<!DOCTYPE html>
```

```html
<html>
  <head>
    <title>Demo</title>
  </head>
  <body>
    <h2>Amazon Shopping</h2>
    <details>
      <summary>Electronics</summary>
      <dl>
        <dd>Televisions</dd>
        <dd>Cameras</dd>
        <dd>Watches</dd>
      </dl>
    </details>
    <details>
      <summary>Footwear</summary>
      <dl>
        <dd>Sports</dd>
        <dd>Sneakers</dd>
        <dd>Casuals</dd>
```

```
        </dl>

      </details>

   </body>

</html>
```

Field Set and Legends

- Field set is container with frame.
- Legend puts a caption for field set.
  Syntax:
  <fieldset>
    <legend> Title </legend>
    Your conten…
  </fieldset>

Ex:

```
<!DOCTYPE html>

<html>

   <head>

      <title>Demo</title>

      <style>

        legend {

           background-color:black;

           color:white;
```

```
            }
        fieldset {
            margin-top: 20px;
        }
    </style>
</head>
<body>
    <fieldset>
        <legend align="center">Annexure-1</legend>
        HTML is a markup language.
```

Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this

software is subject to your volume license agreement rather than this agreement.

    </fieldset>

    <fieldset>

        <legend align="center">Annexure-2</legend>

        JavaScript is used for client side interactions.

        Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.

    </fieldset>

  </body>

</html>

Paragraphs and Blockquotes

- HTML ignores the line breaks and paragraph marks.
- You have to manually add paragraphs by using <p> element.
- It supports "align" attribute, which can set text left, center, right or justified.
- Paragraphs will have a line break before and after.
  Syntax:
  <p>
  Your Content
  </p>
- **Blockquote** is similar to paragraph but have left and right indentation for text.
  [Indentation is space between margin and text]
- It is defined by using "<blockquote>" element.
- In SEO blockquote is used a summary for content in page.

Ex:

<!DOCTYPE html>

<html>

   <head>

       <title>Paragraph</title>

```html
        <style>
            blockquote {
                padding-left: 150px;
                padding-right: 150px;
                font-style: italic;
                border-top: 2px double darkcyan;
                border-bottom: 2px double darkcyan;
                width: 400px;
            }
        </style>
    </head>
    <body>
    <blockquote align="justify">
    Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and.
    </blockquote>
    <p align="justify">
    This agreement describes your rights and the conditions upon which you may use the Windows
```

software. You should review the entire agreement, including any supplemental license terms that accompany the software and any linked terms, because all of the terms are important and together create this agreement that applies to you. You can review linked terms by pasting the (aka.ms/) link into a browser window.

        </p>

        <p align="justify">

        Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.

        </p>

    </body>

</html>

Ordered and Unordered List

- **Order List** will add auto numbering for a list of options, which can update automatically when you add or delete items.
- **Orders List** is defined by using <ol> Element.
- **Items in list** are defined by using <li>.

Syntax:

 Item-1

 Item-2

Ex:

<body>

    <h2>Web Terminology</h2>

       Internet

       Web Server

       Web Site

       Web Page

</body>

- ** can be defined with following attributes**

Attribute	Description

Type	If specifies the numbering type, which can be:
	
	- a
	- A
	- i
	- I
	- 1
	
	Ex:
	`<ol type="a">`
	　　　`<li>Internet</li>`
	　　　`<li>Web Server</li>`
	　　　`<li>Web Site</li>`
	　　　`<li>Web Page</li>`
	　`</ol>`

start [number]	It defines the numbering level to start with.
	Ex:
	`<ol type="A" start="5">`
	　　　`<li>Internet</li>`
	　　　`<li>Web Server</li>`
	　　　`<li>Web Site</li>`
	　　　`<li>Web Page</li>`
	`</ol>`

reversed	It arranges the numbering in reverse order. It is not support on old version browser.
	Ex:
	<ol reversed start="5">
	Internet
	Web Server
	Web Site
	Web Page
	
lang	It specifies the numbering language according to specified region. It is supported only on modern browsers.
	Ex:
	<ol lang="hi" >
	Internet
	Web Server
	Web Site
	Web Page
	

Numbering can be defined in multi-level:

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Paragraph</title>
  </head>
  <body>
    <h2>Web Terminology</h2>
    <ol type="I">
      <li>
        HTML
        <ol type="1">
          <li>Normal Elements
            <ol type="a">
              <li>Bold</li>
              <li>Italic</li>
            </ol>
          </li>
          <li>Void Elements
            <ol type="a">
```

```
        <li>Line Break</li>
        <li>Image</li>
      </ol>
    </li>
  </ol>
</li>
<li>
  JavaScript
  <ol type="1">
    <li>Variables</li>
    <li>Data Types</li>
  </ol>
</li>
</ol>
</body>
</html>
```

- **Numbering will not continue the previous list once you end it.**

Ex:

```
<body>
```

```html
        <ol>
            <h2>Web Terminology</h2>
            <li>Web Site</li>
            <li>Web Page</li>
            <li>URL</li>
            <h2>Terms continued..</h2>
            <li>Internet</li>
            <li>Web</li>
        </ol>
    </body>
```

FAQ: How can we arrange list items side by side?

Ex:

```html
<!DOCTYPE html>
<html>
    <head>
        <title>Paragraph</title>
        <style>
            ol {
                display: flex;
```

```
        list-style: none;
      }
      li {
        margin-left: 40px;
        border:2px solid darkcyan;
        background-color: darkcyan;
        color:white;
        padding:5px;
        text-align: center;
        border-radius: 10px;
        width: 200px;
      }
    </style>
  </head>
  <body>
    <ol>
      <li>Home</li>
      <li>About</li>
      <li>Contact</li>
      <li>Signin</li>
```

```
        <li>Help</li>
    </ol>
  </body>
</html>
```

Unordered List

- It is used to define bulleted list.
- Bulleted list comprises symbol instead of numbering.
- Unordered list is defined by using "<ul>"
- List items are defined by using "<li>"
- The attribute "type" defines the symbol type, which can be
    - o disc
    - o circle
    - o square

Ex:

```
<body>
    <ul type="square">
        <li>Web Sever</li>
        <li>Web Site</li>
        <li>Web Page</li>
    </ul>
```

```
    </body>
```

FAQ: How to define custom symbol as bullet symbol?

- By using style attribute "list-style-image"
- It uses "url()" that specifies the name and location of image to display.

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>List</title>
    <style>
      ul {
        list-style-image: url("../icons/bullet.png");
      }
      li {
        font-size: 34px;
      }
    </style>
  </head>
  <body>
    <ul>
```

```
      <li>Web Sever</li>
      <li>Web Site</li>
      <li>Web Page</li>
    </ul>
  </body>
</html>
```

Unordered list can be nested:

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>List</title>
    <style>

    </style>
  </head>
  <body>
    <ul>
      <li>Web Sever
        <ul>
```

```
                <li>IIS</li>
                <li>Apache Tomcat</li>
            </ul>
        </li>
        <li>Web Site</li>
        <li>Web Page
            <ul type="square">
                <li>Static Page</li>
                <li>Dynamic Page</li>
            </ul>
        </li>
    </ul>
  </body>
</html>
```

List can be "Assorted" with combination of Ordered and Unordered:

Ex:

```
<body>
    <ol type="I">
        HTML
```

```
        <ol>
            <li>Normal Elements
                <ul type="circle">
                    <li>Bold</li>
                    <li>Italic</li>
                </ul>
            </li>
            <li>Void Elements
                <ul type="circle">
                    <li>Image</li>
                    <li>Break</li>
                </ul>
            </li>
        </ol>
    </li>
    <li>JavaScript</li>
  </ol>
</body>
```

Library for Icons and Symbols used in real-world application development

"Fontawesome"

- Visit the following URL
  https://fontawesome.com/how-to-use/on-the-web/setup/hosting-font-awesome-yourself
- Click on
  "Download Fontawesome Free for Web"
- It will download "fontawesome ZIP" folder
- Extract the ZIP folder and copy all its sub folders

📁 css
📁 js
📁 less
📁 metadata
📁 scss
📁 sprites
📁 svgs
📁 webfonts
📄 attribution
📄 LICENSE
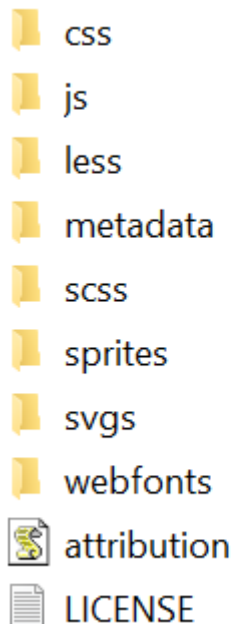
- Go to your project and create a new folder by name "Fonts"
- Paste all the copied sub folders into "Fonts" folder.
- Now your project is ready to use "Fontawesome"

Ex:

```html
<!DOCTYPE html>
<html>
  <head>
    <title>Menu</title>
    <link rel="stylesheet" href="../fonts/css/all.css">
    <style>
      ul {
        list-style: none;
      }
      li {
        margin-top: 20px;
        border:1px solid darkcyan;
        padding: 5px;
        width: 200px;
        background-color: lightcyan;
        color:blue;
      }
    </style>
  </head>
  <body>
```

```html
    <ul>

      <li> <span class="fa fa-home"></span>
<span>Home</span></li>

      <li> <span class="fa fa-tv"></span>
Electronics</li>

      <li> <span class="fa fa-tshirt"></span>
Fashion</li>

      <li> <span class="fa fa-shoe-prints"></span>
Footwear</li>

      <li> <span class="fa fa-bell"></span>
Notifications</li>

      <li> <span class="fa fa-user"></span> Login</li>

    </ul>

  </body>

</html>
```

Ex:

```html
<!DOCTYPE html>

<html>

  <head>

    <title>Fontawesome</title>

    <link rel="stylesheet" href="../fonts/css/all.css">
```

```html
<style>
    ul {
        list-style: none;
        width: 140px;
    }
    li{
        margin-top: 10px;
        border-bottom: 1px solid gray;
        padding: 10px;
    }
    li:hover {
        background-color: black;
        color:white;
        cursor:grab;
    }
</style>
</head>
<body>
    <ul>
```

```html
        <li><span class="fa fa-home"></span>
<span>Home</span> </li>
        <li><span class="fa fa-user-circle"></span>
<span>Profile</span> </li>
        <li><span class="fa fa-bell"></span>
<span>Notifications</span> </li>
    </ul>
  </body>
</html>
```

Text Formatting in HTML

- Text formatting includes changing the font, font style, size, color and effects etc.
- HTML provides the following elements for formatting the text.

Element	Description
<font>	It is used to configure the following options for text - **Face:** It defines font family like, Arial, Time New Roman, Sans-Serif etc. Ex:

	`<font face="Segoe Script">`
	Welcome to HTML
	`</font>`
	- **Size:** It defines the font size, which can be from 1 to 7 levels. [Default size is 3]
	- **Color:** It defines color for text.
	
	Note: `<font>` is deprecated [Obsolete] from HTML 5. It is recommended to define font only with CSS.

Ex:

```
<body>
    <font face="Arial" color="red" size="5">Welcome to HTML</font>
</body>
```

Ex:

```
 <body>
    <font size="4" color="red">W</font>
    <font size="5" color="blue">E</font>
    <font size="6" color="green">L</font>
```

```
<font size="7" color="yellow">C</font>

<font size="6" color="green">O</font>

<font size="5" color="blue">M</font>

<font size="4" color="red">E</font>
</body>
```

FAQ: How to define colors in HTML?

- HTML allows 2 techniques for colors
  - Color Name / Color Shade Name
  - Hexadecimal Code

Colors in HTML

- **Color Names:**
  - HTML allows you to define 16 Million colors.
  - Only 17 colors are known by their name.
    - Aqua
    - Blue
    - Gray
    - Lime
    - Navy
    - Orange
    - Red
    - Teal

- Yellow
- Black
- Fuchsia
- Green
- Maroon
- Olive
- Purple
- Silver
- White
- Transparent
    - HTML also support hundreds of color shade names
        - Darkcyan
        - Lightcyan
        - Lightgreen etc..

Ex:

<body bgcolor="lightgreen"> </body>

- **Hexadecimal Color Code**
    - Hexadecimals colors are basically "RGB" color
    - R-Red, G-Green, B-Blue
    - Hexadecimal number system is 16 base number system, where we use 16 different values ranging from "0 to F".

- o Hexadecimal color can be defined in 3 or 6 chars followed by hash "#"
  - 3 Chars Code
    #RGB
  - 6 Chars Code
    #RRGGBB
- o Red, Green and Blue Value can be "0 to F"

  Hexa: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, f
  [0 is minimum, f is maximum]
  - First place is for Red
  - Second Place is for Green
  - Third place is for Blue

Ex:

#FF0000	- Red	#F00
#00FF00	- Green	#0F0
#0000FF	- Blue	#00F
#FFFF00	- Yellow	#FF0
#000000	- Black	#000
#FFFFFF	- White	#FFF

Ex:

<body bgcolor="#ff00ff"> </body>

Font Styles and Font Effects

Font Style	Tag
Bold	<b> <strong>
Italic	<i> <em> [Emphasized]
Font Effects	**Tag**
Underline	<u> <ins>
Strikeout	<strike> <del>
Super Script	<sup> Character position raised from base line
Sub Script	<sub> Character position lowered from base line

- HTML document is designed and reviewed by developer.
- Documents have 2 modes
    - o Design Mode
    - o Review Mode
- In review mode the design can be modified.
- Modifications are indicated using few review tags like <em> <ins> <del> <strong> etc.

Ex:

<!DOCTYPE html>

```html
<html>
  <head>
    <title>Font</title>
    <link rel="stylesheet" href="../fonts/css/all.css">
    <style>
      #rating {
        background-color: green;
        color:white;
        font-weight: bold;
        padding: 4px;
        border-radius: 5px;
      }
      li {
        margin-bottom: 5px;
      }
      ul {
        margin-left: -20px;
      }

    </style>
```

```html
</head>
<body>
    <table width="1000">
        <tr valign="top">
            <td>
                <div>
                    <img src="../Images/mobile.PNG">
                </div>
            </td>
            <td>
                <div>
                    <div>
                        <b><font face="sans-serif" color="blue" size="5">Realme 7 (Mist Blue, 64 GB)</font></b>
                        <br>
                        <font face="arial" color="gray">
                        <span id="rating">4.3 <span class="fa fa-star"></span> </span>
                        1,73,000 Ratings & 18,000 Reviews
                        </font>
                        <br>
```

```html
<font color="gray" face="arial">
  <ul>
    <li>6 GB RAM | 64 GB ROM | Expandable Upto 256 GB</li>
    <li>16.51 cm (6.5 inch) Full HD+ Display</li>
    <li>64MP + 8MP + 2MP + 2MP | 16MP Front Camera</li>
    <li>5000 mAh Lithium-ion Battery</li>
    <li>MediaTek Helio G95 Processor</li>
  </ul>
  </font>
  </div>
  </div>
  </td>
  <td>
    <div>
      <font face="arial" size="5">
        <b>
```

₹ 14,999

<strike>₹ 17,000</strike>

16% Off

Upto ₹ 13,200 off on Exchange.

</div>

</td>

</tr>

</table>

</body>

</html>

Images in HTML

- The HTML <img> tag is used to embed images into page.
- Browser can't support all image types.
- Whenever you are configuring images, browser verifies its "MIME" type.
- **MIME [Multipurpose Internet Mail Extension]**

    Ex:

    Flower.jpg   image/jpeg [MIME Type]

    Flower.jpeg

    Flower.jfif

    Flower.pjpeg

- You have to use only supported image types.
- HTML standard Image types

Abbreviation	File Format	MIME Type	File Extension
APNG	Animated Portable Network Graphics	Image/apng	.apng
BMP	Bitmap File	Image/bmp	.bmp
GIF	Graphics Interchange Format	Image/gif	.gif

ICO	Microsoft Icon	Image/x-icon	.ico, .cur
JPEG	Joint Photographic Expert Group	Image/jpeg	.jpg, .jpeg, .jfif, .pjpeg, .pjp
PNG	Portable Network Graphics	Image/png	.png
SVG	Scalar Vector Graphics	Image/svg+xml	.svg
TIFF	Tagged Image File Format	Image/tiff	.tiff, .tif
WebP	Web Picture Format	Image/webp	.webp

FAQ: Tell me about XML format Image in HTML?

- SVG is XML format image.
- This image format can't be blocked by firewall.
- XML format images can be available offline.
- Cross platform [Every Device]

A developer must know the type of image suitable for situation.

Image Type	Purpose
PNG	- High resolution - High definition - Occupy more space in memory - Hight pixel depth. - Good for providing image which user can download and use for later.
JPG	- Compressed Image format - Occupies less space. - Less pixel depth than PNG - High resolution - High definition - Loose the quality on ZOOM. - Good for on screen presentation.
GIF	- Low resolution - Low definition - Less pixel depth than JPG - Only 256 colors - Can have animation.

	- Good for logos, bullets, buttons.
SVG	- SVG is XML format image. - This image format can't be blocked by firewall. - XML format images can be available offline. - Cross platform [Every Device] - Vector Graphics [2D] - Not pixel based. - Zoom image – Quality increase
WebP	- It embeds image into page. - When you try to save image, it saves entire page. - It will not allow to capture the image separately.

- **If you are using images for advertisements then you have to configure the size also as per standards**

Leaderboard and height]	728 x 90	[pixels in width
Half Page	300 x 600	

Medium Rectangle   300 x 250

Large Rectangle   336 x 280

- **Photoshop** is the tool used for publishing and editing images.
- **The tag <img>** is used to embed image into page.
- It is a void element.
- <img> is configure with following attributes

Attribute	Description
alt	It defines the alternative text to display when image is unable to load.
src	It specifies the name path of image to display.
Width & height	It specifies the width and height in pixels or in percentage.
border	It specifies border for image in pixels.
title	It specifies the screen tip to display for image when mouse is over the image.
align	Align image left or right. Image will not support center. Align will wrap text around image.
Hspace	Horizontal space between text and image.
Vspace	Vertical space between text and image. Note:

	In latest versions of HTML "hspace and vspace" are obsolete.

Ex:

<!DOCTYPE html>

<html>

   <head>

      <title>Images in HTML</title>

   </head>

   <body>

        <img hspace="20" vspace="20" title="Copyright of Amazon" alt="Please Wait.. Enable Images on Browser" src="../Images/nike.jpg" align="left" border="10" width="200" height="200">

        <p>Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you

acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.

</p>

<p>Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.

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or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.

```
    </p>
  </body>
</html>
```

- Image attributes which are used with integration of server-side technologies.

Attribute	Description
crossorigin	It specifies the accessibility of resources from cross-origin. [**CORS – Cross Origin Resource Sharing**] - Allow Anonymous [Allow All to access] - Use Credentials [Need Authentication] Ex:

	`<img crossorigin="anonymous" src="https://cdn/Images/nike.jpg" width="200" height="200">`
decoding	It specifies how to load the image along with other content in page. - Sync: Synchronized, it will block other content while loading image. - Async: Allows to load image along with other contents. Ex: `<img decoding="async" src="../Images/nike.jpg" width="200" height="200">`
Importance	- It defines the priority for image. - It can be low, high or auto. - Images with high priority are loaded first. Ex: `<img importance="auto" src="../Images/nike.jpg" width="200" height="200">`

Ex:
`<!DOCTYPE html>`

```html
<html>
    <head>
        <title>Images in HTML</title>
        <style>
            .card {
                width: 250px;
                padding: 10px;
                border:2px solid darkcyan;
                border-radius: 10px;
                margin:30px;
            }
            .card-header {
                text-align: center;
                background-color:lightgoldenrodyellow;
                font-size: 26px;
                padding:3px;
            }
            .card-footer {
                text-align: center;
                background-color:lightgoldenrodyellow;
                padding: 3px;
            }
            .card-img {
                border:2px solid darkcyan;
                border-radius: 100px;
            }
```

```
        .card-body {
            text-align: center;
        }
        .card-deck {
            display: flex;
        }
        }
    </style>
</head>
<body>
    <div class="card-deck">
    <div class="card">
        <div class="card-body">
            <img class="card-img"
src="../Images/shoe.jpg" width="200"
height="200">
        </div>
        <div class="card-header">
            <h3>Nike Casuals</h3>
        </div>

        <div class="card-footer">
            <p>&#8377; 6700.66</p>
            <p>more..</p>
        </div>
    </div>
```

```html
<div class="card">
  <div class="card-header">
    <h3>Lee Boot</h3>
  </div>
  <div class="card-body">
    <img class="card-img" src="../Images/shoe1.jpg" width="200" height="200">
  </div>
  <div class="card-footer">
    <p>&#8377; 7000.66</p>
    <p>more..</p>
  </div>
</div>

<div class="card">
  <div class="card-header">
    <h3>Shirt</h3>
  </div>

  <div class="card-footer">
    <p>&#8377; 4000.66</p>
    <p>more..</p>
  </div>
  <div class="card-body">
```

```html
            <img class="card-img"
src="../Images/shirt.jpg" width="200"
height="200">
        </div>
        </div>

        <div class="card">
          <div class="card-header">
            <h3>Jeans</h3>
          </div>
          <div class="card-body">
            <img class="card-img"
src="../Images/jeans.jpg" width="200"
height="200">
          </div>
          <div class="card-footer">
            <p>&#8377; 3000.66</p>
            <p>more..</p>
          </div>
        </div>

        </div>
      </body>
</html>
```

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Card</title>
    <style>
      .card {
          width: 300px;
          border:2px solid black;
          border-top-left-radius:20px;
          border-top-right-radius: 20px;
          margin:30px;
      }
```

```
        .card-body {
            padding: 10px;
            text-align: justify;
            font-family: Arial;
        }
        .card-img {
            border-top-left-radius:20px;
            border-top-right-radius: 20px;
        }
        .card-deck {
            display: flex;
        }
    </style>
</head>
<body>
    <div class="card-deck">
        <div class="card">
            <div>
                <img class="card-img"
src="../Images/wild.jpg" width="100%" height="250">
```

```html
        </div>
        <div class="card-body">
          <h3>Wild Life</h3>
          <p>Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its </p>
        </div>
      </div>



      <div class="card">
        <div>
          <img class="card-img" src="../Images/wild.jpg" width="100%" height="250">
        </div>
```

```
<div class="card-body">
    <h3>Wild Life</h3>
    <p>Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its </p>
    </div>
    </div>
  </div>
  </body>
</html>
```
Ex:

Wild Life

Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its

Wild Life

Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its

```
<!DOCTYPE html>

<html>

    <head>

        <title>Card</title>

        <style>

            .card {

                width: 300px;

                border:2px solid black;

                border-top-left-radius:20px;
```

```css
        border-top-right-radius: 20px;

        margin:30px;

    }

    .card-body {

        padding: 10px;

        text-align: justify;

        font-family: Arial;

    }

    .card-img {

        border-top-left-radius:20px;

        border-top-right-radius: 20px;

    }

    .card-deck {

        display: flex;

    }

    </style>

</head>

<body>

    <div class="card-deck">

        <div class="card">
```

```html
<div>
    <img class="card-img" src="../Images/wild.jpg" width="100%" height="250">
</div>
<div class="card-body">
    <h3>Wild Life</h3>
    <p>Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its </p>
</div>
</div>



<div class="card">
    <div>
```

```html
            <img class="card-img"
src="../Images/wild.jpg" width="100%" height="250">
        </div>
        <div class="card-body">
         <h3>Wild Life</h3>
            <p>Depending on how you obtained the
Windows software, this is a license agreement
between (i) you and the device manufacturer or
software installer that distributes the software with
your device; or (ii) you and Microsoft Corporation (or,
based on where you live or, if a business, where your
principal place of business is located, one of its
affiliates) if you acquired the software from a retailer.
Microsoft is the device manufacturer for devices
produced by Microsoft or one of its </p>
        </div>
        </div>
    </div>
  </body>
</html>
```

Hyperlinks in HTML

- Link is clickable text, picture or graphic that navigates the user to any specified location when clicked.
- Hyperlink is clickable text, picture of graphics that navigates over "Http".
- Hyperlinks are required to design navigation in website.

Note: **According the Web Designing standards every website must have a proper navigation mechanism. User must able to reach to any topic just with one click.**

- HTML Hyperlinks are created by using "Anchor" Element.
- Anchor is designed by using "<a>" tag.
- Hyperlinks in Website are classified into 2 types
    o Intra document links
    o Inter document links

Intra document link

- It is a hyperlink that handles navigation from one location to another within the page.
- User can navigate to any location within the page.
- In order to navigate to any location within page, you have to define unique reference ID for the target element.

Ex:

<h2 id="electronics"> </h2>

<div id="footwear"> </div>

<img id="pic">

- The anchor element uses "href" attribute that specifies the target location.
- "href" will set the specified path in "URL".
- You can refer any ID by using "#"

Syntax:

FAQ: How to change color for Visited, Active and Normal Links?

- You can use <body> tag attributes
  - o alink
  - o vlink
- You can define with styles
  - o a:link { }
  - o a:visited { }
  - o a:active { }

FAQ: How to remove underline for Hyperlink?

- You can use "style"
- text-decoration:none

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Intra Document Navigation</title>
    <link rel="stylesheet" href="../fonts/css/all.css">
    <style>
      .container {
        display: flex;
        column-count: 2;
        column-gap: 60px;
      }
      .content {
        height: 400px;
        overflow: scroll;
      }
      ul {
        list-style: none;
      }
```

```css
        li {
            width: 100px;
            margin-top: 20px;
            border:2px solid darkcyan;
            padding: 5px;
            border-radius: 5px;
            background-color: darkcyan;
            color:white;
        }
        a{
            color:white;
            text-decoration: none;
        }
        a:hover {
            text-decoration: underline;
        }
    </style>
</head>
<body>
  <div class="container">
```

```html
<div class="navbar">
  <ul>
    <li> <a href="#electronics"><span class="fa fa-tv"></span> Electronics</a> </li>
    <li> <a href="#footwear"><span class="fa fa-shoe-prints"></span> Footwear</a></li>
    <li> <a href="#fashion"><span class="fa fa-tshirt"></span> Fashion</a></li>
  </ul>
</div>
<div class="content">
  <h2 id="electronics">Electronics</h2>
  <img src="../Images/speaker.jpg" width="100" height="100">
  <img src="../Images/earpods.jpg" width="100" height="100">
  <p>Depending on <span><a style="color:blue" href="#wild">See:Wild Life</a></span> how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a
```

business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.</p>

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<p>Depending on how you obtained the Windows software, this is a license agreement

between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.</p>

<h2 id="footwear">Footwear</h2>

<img src="../Images/shoe.jpg" width="100" height="100">

<img src="../Images/shoe1.jpg" width="100" height="100">

<p>Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your

principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.</p>

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<p>Depending on how you obtained the Windows software, this is a license agreement

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      <h2 id="fashion">Fashion</h2>

      <img src="../Images/jeans.jpg" width="100" height="100">

      <img src="../Images/shirt.jpg" width="100" height="100">

      <p>Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your

principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.</p>

        <div id="wild">

         <img src="../Images/wild.jpg" width="200" height="200">

        </div>

        <p>Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume

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 </div>

 </div>

 </body>

</html>

- **Intra document links can use target selector of "css" in order to highlight the target content if it is not scrollable.**

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Intra Document Links</title>
    <style>
      ul {
        list-style: none;
        display: flex;
        margin-left: -60px;
      }
      li {
        margin-left: 30px;
        border:2px solid darkcyan;
        background-color: darkcyan;
        width: 200px;
        padding: 5px;
        text-align: center;
```

```css
        }
        a {
            color:white;
            text-decoration: none;
        }
        .topic {
            border:2px solid darkcyan;
            padding: 10px;
            background-color: darkcyan;
            color:white;
            margin-top: 20px;
        }
        .topic:target {
            background-color: black;
            color:white;
        }
    </style>
</head>
<body>
    <header>
```

```html
      <nav>
        <ul>
          <li><a href="#html">HTML</a></li>
          <li><a href="#css">CSS</a></li>
          <li><a href="#js">JavaScript</a></li>
        </ul>
      </nav>
    </header>
    <div id="html" class="topic">
      <h2>HTML</h2>
      <p>It is a markup language..</p>
    </div>
    <div id="css" class="topic">
        <h2>CSS</h2>
        <p>It defines styles for HTML</p>
    </div>
    <div id="js" class="topic">
        <h2>JavaScript</h2>
        <p>It is a language.</p>
    </div>
```

```html
    </body>
</html>
```

- **You can handle Scrolling of content in a page with a "Sticky Position".**

Ex:

```html
<!DOCTYPE html>
<html>
    <header>
        <title>Accordion</title>
        <style>
            dt {
                background-color: black;
                padding:10px;
                color:white;
                font-weight: bold;
                font-size: 24px;
                top:0px;
                position: sticky;
            }
```

```html
        </style>
    </header>
    <body>
        <h1 align="center">Tutorial Online</h1>
        <dl>
            <dt>HTML</dt>
            <dd>Void Elements</dd>
            <dd>Normal Elements</dd>
            <dd>RC Data Elements</dd>
            <dd>Raw Text Elements</dd>
            <dd>Void Elements</dd>
            <dd>Normal Elements</dd>
            <dd>RC Data Elements</dd>
            <dd>Raw Text Elements</dd>
            <dd>Void Elements</dd>
            <dd>Normal Elements</dd>
            <dd>RC Data Elements</dd>
            <dd>Raw Text Elements</dd>
            <dd>Void Elements</dd>
            <dd>Normal Elements</dd>
```

```html
<dd>RC Data Elements</dd>
<dd>Raw Text Elements</dd>
<dd>Void Elements</dd>
<dd>Normal Elements</dd>
<dd>RC Data Elements</dd>
<dd>Raw Text Elements</dd>
<dd>Void Elements</dd>
<dd>Normal Elements</dd>
<dd>RC Data Elements</dd>
<dd>Raw Text Elements</dd>
<dd>Void Elements</dd>
<dd>Normal Elements</dd>
<dd>RC Data Elements</dd>
<dd>Raw Text Elements</dd>
<dt>CSS</dt>
<dd>Selectors</dd>
<dd>Transitions</dd>
<dd>Responsive Design</dd>
<dd>Selectors</dd>
<dd>Transitions</dd>
```

<dd>Responsive Design</dd>

<dd>Selectors</dd>

<dd>Transitions</dd>

<dd>Responsive Design</dd>

<dd>Selectors</dd>

<dd>Transitions</dd>

<dd>Responsive Design</dd>

<dd>Selectors</dd>

<dd>Transitions</dd>

<dd>Responsive Design</dd>

<dd>Selectors</dd>

<dd>Transitions</dd>

<dd>Responsive Design</dd>

<dd>Selectors</dd>

<dd>Transitions</dd>

<dd>Responsive Design</dd>

<dd>Selectors</dd>

<dd>Transitions</dd>

<dd>Responsive Design</dd>

<dt>JavaScript</dt>

<dd>Variables</dd>

<dd>Data TypeScript</dd>

<dd>Operators</dd>

<dd>Statements</dd>

<dd>Variables</dd>

<dd>Data TypeScript</dd>

<dd>Operators</dd>

<dd>Statements</dd>

<dd>Variables</dd>

<dd>Data TypeScript</dd>

<dd>Operators</dd>

<dd>Statements</dd>

<dd>Variables</dd>

<dd>Data TypeScript</dd>

<dd>Operators</dd>

<dd>Statements</dd>

<dd>Variables</dd>

```
        <dd>Data TypeScript</dd>

        <dd>Operators</dd>

        <dd>Statements</dd>

    </dl>

  </body>

</html>
```

Inter Document Links

- Hyperlinks that handle navigation to any URL or any another page in website.
- It also refers Hyperlink which can invoke email and call clients.
- Navigation can be to
    o File [word document, presentation, pdf]
    o URL
    o Email Client
    o Mobile Dial application
    o HTML Page

Ex:

```
<!DOCTYPE html>

<html>

  <head>

    <title>Inter Document Links</title>
```

```html
</head>
<body>
  <ol>
    <li><a href="newsonline.html">News Online</a></li>
    <li><a href="../Images/shoe.jpg">Nike Casuals</a></li>
    <li><a href="../docs/cssdemo.pdf">CSS Tutorial PDF</a></li>
    <li><a href="http://www.amazon.in">Amazon Shopping</a></li>
    <li>Contact : <a href="mailto:hr@nareshit.in">hr@nareshit.in</a></li>
    <li>Call : <a href="tel:+919876543210">+919876543210</a></li>
  </ol>
</body>
</html>
```

Note:

- Every file that you configured as target in Hyperlink can't open in browser. Files require special plugins to open the content and show in browser.
- If plugin is missing on not available then the linked file will be downloaded.

FAQ: How to download any file through a link without opening it in browser?

- We can use "**download**" attribute for Hyperlink.

 Ex: CSS Tutorial PDF

 CSS Tutorial PDF

FAQ: How to open link target in a new Tab?

- Usually, the link target opens in the same browsing tab.
- You can define link with "target" attribute with value "_blank" to open in a new tab.

Syntax:

Nike Casuals

FAQ: How to open link target in a new Window?

- You have to use JavaScript "window.open()" method for hyperlink.

Syntax:

```
<a href="javascript:window.open('../Images/shoe.jpg','Nike','width=500 height=400')"> Nike Casuals</a>
```

FAQ: How to open link target in the same window along with existing content?

- You can embed the link target into same window along with existing content by using "iFrame"
- Iframe allows to embed any external linked document into the page at specified location.

Ex:

```
<iframe src="https://www.youtube.com/embed/si-KFFOW2gw" width="600" height="500"></iframe>
```

Ex:

- **Add "Pages" folder in your project**
- **Add following files into folder**
    - Home.html

- o Electronics.html
- o Footwear.html
- o Fashion.html
- **Add another file in "public" folder**
  - o Index.html

"Code you can find in Pages attached to notes"

Frames in HTML

[Obsolete – No Longer in use]

- HTML provides <frameset> that can split the browser window into multiple windows.
- <frameset> is a collection of "frames".
- Every frame is designed by using <frame>.

Note: It is not embedding the content into page. It is splitting the window into horizontal or vertical panes.

- The document that is designed with frame can't contain body section.

Syntax:

<!DOCTYPE html>

<html>

  <head>

    <title>Shopping | Online</title>

```
    </head>
    <frameset rows="15%, 70%, 15%">
        <frame></frame>
        <frame></frame>
        <frame></frame>
    </frameset>
</html>
```

- You can't add any content directly inside frame.
- Frame can handle only a document [Picture, PDF, text, HTML] by using "src" attribute.

Syntax:

```
<!DOCTYPE html>
<html>
    <head>
        <title>Shopping | Online</title>
    </head>
    <frameset rows="15%, 70%, 15%">
        <frame></frame>
        <frame src="../Pages/home.html"></frame>
        <frame></frame>
    </frameset>
```

```
</html>
```

Ex:

1. Add following files into "Pages"
   a. Menu.html
   b. Footwer.html
   c. Home.html
   d. Electronics.html
   e. Footwear.html
   f. Fashion.html
2. Menu.html

```
<head>
<link rel="stylesheet" href="../fonts/css/all.css">
<style>
   ul {
      list-style: none;

   }
   li {
      width: 100px;
      padding:10px;
      margin-top: 30px;
      background-color: darkcyan;
      color:white;
   }
   a {
      text-decoration: none;
```

```html
        color:white;
      }
    </style>
  </head>
  <body>
    <ul>
      <li><a href="../Pages/home.html"
target="frameBody"> <span class="fa
fa-home"></span> Home</a></li>
      <li><a href="../Pages/electronics.html"
target="frameBody"> <span class="fa
fa-tv"></span> Electronics</a></li>
      <li><a href="../Pages/footwear.html"
target="frameBody"> <span class="fa
fa-shoe-prints"></span> Footwear</a></li>
      <li><a href="../Pages/fashion.html"
target="frameBody"> <span class="fa
fa-tshirt"></span> Fashion</a></li>
    </ul>
  </body>
```

3. Index.html
```html
<!DOCTYPE html>
<html>
  <head>
    <title>Shopping | Online</title>
  </head>
```

```html
        <frameset cols="15%, 70%, 15%" noresize>
            <frame src="../Pages/menu.html"></frame>
            <frame name="frameBody"
    src="../Pages/home.html"></frame>
            <frame src="../Pages/footer.html"></frame>
        </frameset>
    </html>
```

Ex: Image Link

```html
<!DOCTYPE html>
<html>
    <head>
        <title>Image Links</title>
        <style>
            .container {
                display: flex;
                column-count: 2;
                column-gap: 40px;
            }
            iframe {
                border:none;
            }
```

```
img {
    border:2px solid;
}
.rightPanel {
    width: 1000px;
}
</style>
</head>
<body>
<div class="container">
 <div class="leftPanel">
  <h3>Preview</h3>
  <div>
    <a href="../Images/earpod1.png" target="frameBody">
      <img src="../Images/earpod1.png" width="50" height="50">
    </a>
  </div>
  <div>
```

```html
        <a href="../Images/shoeanimated.gif"
target="frameBody">
            <img src="../Images/shoeanimated.gif"
width="50" height="50">
        </a>
      </div>
    </div>
    <div class="rightPanel">
      <iframe name="frameBody" width="100%"
height="500">

      </iframe>
    </div>
  </div>
  </body>
</html>
```

Tables in HTML

- Tables are used to organize the data in rows and columns.
- HTML uses tables to present content in rows and columns.

- Early version of HTML [4] used tables for designing entire document.
- HTML 5 introduced new elements and attributes for designing tables.
- HTML 5 table elements are

Element	Description
<table>	It is a collection of rows and columns.
<caption>	It sets caption for table.
<thead>	It defines the table header section.
<tbody>	It defines the table body section.
<tfoot>	It defines the table footer section.
<th>	It defines column heading content.
<tr>	It defines the table row.
<td>	It defines the table cell content.
<colgroup>	It groups a set of columns to define effects.

caption

<table>	<thead> <tr> <th> </th> <th> </th> <th> </th>		
<colgroup>	<tbody> <tr> <td> </td>	<td> </td> <td> </td> <td> </td> </tr	
	<tr> <td> </td>	<td> </td> <td> </td> <td> </td> </tr	
	<tr> <td> </td>	<td> </td> <td> </td> <td> </td> </tr	
</table>	<tfoot> <tr> <td> </td> <td> </td> <td> </td> </t		

Ex:
```
<!DOCTYPE html>
<html>
  <head>
    <title>Tables</title>
  </head>
  <body>
    <table width="400" border="1">
      <caption>Products Table</caption>
      <colgroup span="2"
style="background-color: yellow;" ></colgroup>
      <thead>
       <tr>
         <th>Product Id</th>
         <th>Name</th>
```

```html
            <th>Price</th>
            <th>Preview</th>
        </tr>
    </thead>
    <tbody>
        <tr>
            <td>1</td>
            <td>JBL Speaker</td>
            <td> &#8377; 5600.55</td>
            <td>
                <img src="../Images/speaker.jpg" width="50" height="50">
            </td>
        </tr>
        <tr>
            <td>2</td>
            <td>Nike Casuals</td>
            <td>&#8377; 3000.44</td>
            <td>
                <img src="../Images/shoe.jpg" width="50" height="50">
            </td>
        </tr>
    </tbody>
    <tfoot>
        <tr>
```

```
            <td></td>
            <td>&copy; copyright 2021</td>
            <td></td>
            <td></td>
         </tr>
      </tfoot>
    </table>
  </body>
</html>
```

Formatting Tables in HTML

- Table element provides several attributes that are used to configure and format the table appearance.

Border, Frame and Rules:

Frame	Frame is defined for entire table. Frame uses the values:
	- Box
	- Void
	- Above
	- Below
	- Rhs
	- Lhs
	Syntax:

	<table frame="box">
Rules	It is defined for rows and columns. Rules can use following values: - All - None - Groups - Rows - Cols Syntax: <table frame="box" rules="groups">
Border	It is defined for table cell. Border can use only 0 or 1. 0 – without border 1- with border Note: Border can't be applied if table is defined with rules. Syntax: <table border="1" frame="void"> <table border="1" rules="all"> **border will not be applied to table.**

Cell Spacing and Padding

cellspacing	It sets space between cells.

cellpadding	It sets space between border and cell content.

Syntax:

<table width="600" cellpadding="10" cellspacing="10" border="1" frame="void">

Alignments

align	It aligns the content horizontally left, center, right or justify. Syntax: <table align="center"> <tbody align="center"> <tr align="center"> <td align="center">
valign	It aligns the content vertically top, center, bottom. Syntax: <tbody valign="top"> <tr valign="bottom"> <td valign="center">

Syntax:

<tbody align="center" valign="center">

Height and width

Height	It defines height for row. Syntax: <tr height="200"> <th height="200"> <td height="200">
Width	It defines cell width. <td width="200"> <th width="200">

Syntax:

<table width="300" height="100">

Merging or Rows and Columns

colspan	It can merge specified number of columns into single column.
rowspan	It can merge specifies number of rows into single row.

Ex:

<!DOCTYPE html>

<html>

  <head>

    <title>Tables</title>

```html
</head>
<body>
  <table border="1" width="400">
    <thead>
      <tr>
        <th rowspan="3">Head Section</th>
      </tr>
      <tr>
        <th colspan="2">Name</th>
        <th colspan="3">Address</th>
      </tr>
      <tr>
        <th>First Name</th>
        <th>Last Name</th>
        <th>City</th>
        <th>State</th>
        <th>Postal Code</th>
      </tr>
    </thead>
    <tbody>
```

```html
<tr>
    <th rowspan="5">Body Section</th>
</tr>
<tr>
    <td> </td>
    <td> </td>
    <td> </td>
    <td> </td>
    <td> </td>
</tr>
<tr>
    <td colspan="5" align="center">Table Split</td>
</tr>
<tr>
    <td> </td>
    <td> </td>
    <td> </td>
    <td> </td>
    <td> </td>
```

```html
        </tr>
        <tr>
          <td> </td>
          <td> </td>
          <td> </td>
          <td> </td>
          <td> </td>
        </tr>
      </tbody>
      <tfoot>
        <tr>
          <th rowspan="2">Footer Section</th>
        </tr>
        <tr height="50">
          <td align="center" colspan="5"><i>&copy; copyright 2021</i></td>
        </tr>
      </tfoot>
    </table>
  </body>
```

</html>

Head Section	Name		Address		
	First Name	Last Name	City	State	Postal Code
Body Section					
	Table Split				
Footer Section	© copyright 2021				

Background color and Image

bgcolor	It sets a background color for table, body, header, footer, cell, row.
Background	It sets background image.

Syntax:

<table background="../Images/shoeanimated.gif" border="1" width="500">

<table bgcolor="red">

<tr bgcolor="red">

Summary

Tags

- table
- thead
- tbody
- tfoot
- th
- tr
- td
- colgroup
- caption

Attributes

- frame
- border
- rules
- width
- height
- align
- valign
- bgcolor
- background
- cellspacing
- cellpadding
- colspan
- rowspan

Ex:

```html
<!DOCTYPE html>
<html>
   <head>
      <title>Products Catalog</title>
   </head>
   <body>
      <table align="center" width="100%" cellspacing="20" cellpadding="10" border="0">
         <tr bgcolor="lightgreen">
            <td colspan="2" align="center">
               <h1>Amazon Shopping</h1>
            </td>
         </tr>
         <tr>
            <td width="200">
               <img src="../Images/speaker.jpg" width="200" height="200">
            </td>
            <td>
               <table width="100%" height="100" border="1">
                  <colgroup span="1" style="background-color: yellow;"></colgroup>
                  <tr>
                     <td>Name</td>
                     <td>JBL Speaker</td>
```

```html
        </tr>
        <tr>
           <td>Price</td>
           <td>4600.55</td>
        </tr>
      </table>
     </td>
   </tr>
   <tr>
     <td width="200">
       <img src="../Images/shoe.jpg"
width="200" height="200">
      </td>
      <td>
       <table width="100%" height="100"
border="1">
          <colgroup span="1"
style="background-color: yellow;"></colgroup>
          <tr>
             <td>Name</td>
             <td>Nike Casuals</td>
          </tr>
          <tr>
             <td>Price</td>
             <td>4600.55</td>
          </tr>
```

```html
          </table>
        </td>
      </tr>
      <tr>
        <td width="200">
          <img src="../Images/shirt.jpg" width="200" height="200">
        </td>
        <td>
          <table width="100%" height="100" border="1">
            <colgroup span="1" style="background-color: yellow;"></colgroup>
            <tr>
              <td>Name</td>
              <td>Shirt</td>
            </tr>
            <tr>
              <td>Price</td>
              <td>4600.55</td>
            </tr>
          </table>
        </td>
      </tr>
      <tr bgcolor="lightgreen">
        <td colspan="2" align="center">
```

```
                <i>&copy; copyright 2021</i>
            </td>
        </tr>
    </table>
</body>
</html>
```

Ex:


```
<!DOCTYPE html>

<html>

    <head>
```
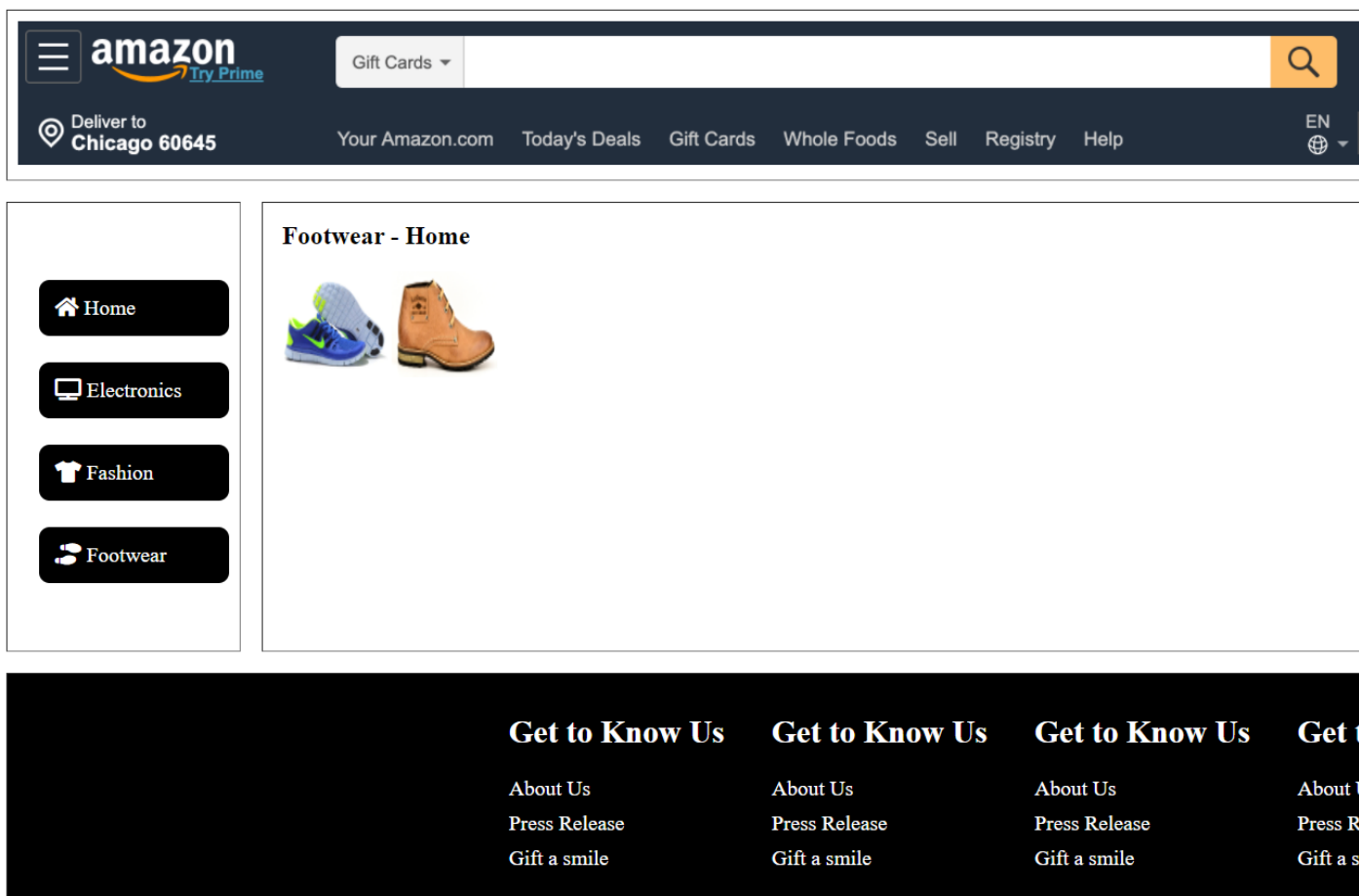
```html
<title>Table Layout</title>
<link rel="stylesheet" href="../fonts/css/all.css">
<style>
    ul {
        list-style: none;
    }
    ul > li {
        font-size: 20px;
        color:white;
        margin-top: 10px;
    }
    ol {
        list-style: none;
        margin-left: -20px;
    }
    ol > li {
        width: 150px;
        border:2px solid black;
        padding:13px;
        margin-top: 25px;
```

```css
            font-size: 20px;

            background-color: black;

            color:white;

            border-radius: 10px;

        }

        iframe {

            border:none;

        }

        a {

            color:white;

            text-decoration: none;

        }

    </style>

  </head>

  <body>

    <table frame="void" border="1" width="100%"
cellspacing="20" cellpadding="10">

        <tr height="100">

            <td colspan="3">

                <img src="../Images/amazon-header.png"
width="100%">
```

```html
        </td>
      </tr>
      <tr height="400">
        <td width="200">
          <ol>
            <li>
              <a href="../Pages/home.html" target="frameBody"> <span class="fa fa-home"></span> Home</a>
            </li>
            <li>
              <a href="../Pages/electronics.html" target="frameBody"> <span class="fa fa-tv"></span> Electronics</a>
            </li>
            <li>
              <a href="../Pages/fashion.html" target="frameBody"> <span class="fa fa-tshirt"></span> Fashion</a>
            </li>
            <li>
```

```html
            <a href="../Pages/footwear.html"
target="frameBody"> <span class="fa
fa-shoe-prints"></span> Footwear</a>
            </li>
         </ol>
      </td>
      <td>
         <iframe src="../Pages/home.html"
name="frameBody" width="100%"
height="400"></iframe>
      </td>
      <td width="160">
          <img src="../Images/hpBanner.png"
height="400" width="160">
      </td>
   </tr>
   <tr height="50">
      <td bgcolor="black" colspan="3">
         <table align="center">
            <tr>
               <td>
```

```html
      <ul>
         <li>
             <h2>Get to Know Us</h2>
         </li>
         <li>About Us</li>
         <li>Press Release</li>
         <li>Gift a smile</li>
      </ul>
   </td>
   <td>
    <ul>
         <li>
             <h2>Get to Know Us</h2>
         </li>
         <li>About Us</li>
         <li>Press Release</li>
         <li>Gift a smile</li>
     </ul>
   </td>
   <td>
```

```html
    <ul>
      <li>
          <h2>Get to Know Us</h2>
      </li>
      <li>About Us</li>
      <li>Press Release</li>
      <li>Gift a smile</li>
    </ul>
   </td>
   <td>
    <ul>
      <li>
          <h2>Get to Know Us</h2>
      </li>
      <li>About Us</li>
      <li>Press Release</li>
      <li>Gift a smile</li>
    </ul>
   </td>
  </tr>
```

```
            </table>
        </td>
      </tr>
    </table>
  </body>
</html>
```

Task:

Indian players pose with the winning trophy after defeating Australia by three wickets on the final day of the fourth cricket test match at the Gabba, Brisbane in Australia on Tuesday. — AP

Forms in HTML

- Form provides an UI from where user can interact with our application.
- Interaction includes insert, update, delete, query etc.
- Form is a container with collection of elements like button, textbox, checkbox, radio, list box etc.

- HTML form is created by using following elements
    o <form>
    o <input>
    o <select>
    o <option>
    o <datalist>
    o <textarea>
    o <meter>
    o <progress> etc.

Form Container

- Form container is defined by using <form> tag.
- A web page can contain multiple forms. Hence you have to define a start and end tag.
Syntax:
<form>

</form>
- A page can submit the details only when they are enclosed a form.
- You have to make sure that the form elements are present inside <form> container.
Syntax:
Name : <input type="text" name="Name">   //
Not good

<form>

Name : <input type="text" name="Name">   // OK
</form>
- **HTML form element provides following attributes**

Attribute	Description
Id	It defines a unique ID for form.
name	It defines a reference for form.
class	It defines a CSS class for form.
method	It indicates the request method for form, which can be: - GET - POST The default form method is GET
action	It specifies the target where the data is submitted. It refers to the server-side page to submit form data. Ex: page.jsp, page.aspx, page.php, page.asp Syntax: <form method="post" action="page.aspx">

target	It can open the target page in a new tab or in a frame. Syntax: <form method="post" action="page.aspx" target="_blank">
novalidate	- HTML 5 introduced validations. - Validation is the process of verifying the user input and restrict to specific type or range. - Some of the validations provided by HTML 5 are not suitable for our requirements. Hence we have to by-pass [Ignore] the validations by using "novalidate". Ex: <form novalidate> Email: <input type="email" name="Email"> <button>Submit</button> </form>

Note: Always use "Camel Case" for naming. [camelCase]

Prefix must speak about object type

Suffix must speak about its purpose.

btnDelete, frmRegister

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Forms in HTML</title>
    <style>
      .form-login {
          width: 300px;
          height: 100px;
          border:2px solid;
          padding:20px;
      }
```

```
    </style>

  </head>

  <body>

    <form id="frmLogin" class="form-login"
name="frmLogin">


    </form>

  </body>

</html>
```

GET vs POST

GET	POST
GET method is used to fetch [Access] data from server. - If you are designing a form to get data from server and display in page, then use GET method.	POST method is used to submit data to server. - If you are designing a form to submit the client data to server, then use POST method.
If submit form data on GET request it will be added into URL as **Query String**.	Data will be in **Form Message Body**

Any one can view your data.	It is not appended into URL, it is not visible to users.
It is not safe.	It is safe
It is easy to hack data.	It is hard to hack data.
It allows to bookmark the data.	It can't be bookmarked.
It is stored in browser logs. [history]	It is not stored in browser history.
You can't submit complex data, like binary data. It allows only ASCII type.	It can submit complex data.
You can submit limited data. Query string allows 2048 chars.	There is no limit for submitting data.
The data can be cached. It will store data in cache and saves round trip.	Data can't be cached.

FAQ: Can we submit form data on GET request?

A.Yes. But not recommended.

Form Input Elements

- HTML <input> element allows to input any type of value.
- HTML <label> element is used to set a label for fields.

Text Input / String Input:

HTML <input> can use the attribute "type" to define the type of value to accept as input. You can use "type=text" if you want to allow string type.

HTML provides several attributes for input element. The attributes suitable for text input are:

Attribute	Description
Id	It defines a unique ID
name	It defines a reference name.
class	It specifies the classes to implement.
value	It specifies the default value to display in side textbox. Syntax: <input type="text" value="David" name="txtName">
placeholder	It defines the water mark text for input element. The water mark can't display if there is a value defined.

autofocus	It can set focus to the text box automatically on page load. Only one element in "Form" can be set with autofocus. Syntax: `<input type="text" placeholder="Last Name" autofocus>`
readonly	It will not allow to change value. It will not allow to input value. If you want to display a value but should not allow to modify the value, then you can mark it as readonly. Syntax: `<input type="text" readonly name="txtId" value="101">`
disabled	It will not allow to input or change value. It will not submit value. Syntax: `<input type="text" disabled name="txtId" value="101">` Disabled vs Readonly - Readonly can submit the value - Can't submit the value

required	- It will not allow to submit empty. - It is used for mandatory fields. - If textbox is not defined with value, then it will not allow to submit the form. - However if form is defined with "novalidate" then you can submit empty. Syntax: `<input type="text" name="txtId" required>`
minlength	It ensures that the input value minimum length matches the lower bound value.
maxlength	It restricts the input value to specified maximum number of chars. You can restrict the length of string in textbox by using minlength and maxlength. Syntax: `<input name="txtName" type="text" required minlength="4" maxlength="10">`

| size | It is used to define the width of textbox. The default width is 20.

Syntax:
<input type="text" size="2" name="txtPin" maxlength="10"> |
|------|---|
| list | - It uses a data list that contains options to display as autocomplete text.
- Data list is designed by using <datalist> element
- Data list contains a set of options defined by using <option> element. |
| pattern | - It is used to verify the format of input value and restrict the value to specific format.
- Pattern uses "Regular Expression" to verify the input value.
- Regular Expression is built by using meta character and quantifiers. |

Note: Form element can't submit its value if not defined with "name" attribute. Hence name is mandatory to submit the element value.

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Forms in HTML</title>
    <style>
      form {
        display: flex;
        padding:5px;
        border:2px solid darkcyan;
        border-radius: 10px;
      }
      form > div {
        margin-left: 5px;
      }
    </style>
  </head>
  <body>
```

```html
    <form>
      <div>
        Home | About | Contact
      </div>
      <div>
        <input type="text" placeholder="First Name">
      </div>
      <div>
        <input type="text" placeholder="Last Name">
      </div>
      <div>
        <button>Submit</button>
      </div>
    </form>
  </body>
</html>
```

FAQ: Can we change the color of placeholder?

A.Yes. By using "CSS – Placeholder Selector"

Syntax:

```css
    input::placeholder {
```

```
        color:red;

        font-weight: bold;

        font-family: Arial;

    }
```

FAQ: Can we change the effect for element in focus?

   A.Yes. By using CSS – Focus selector.

Syntax:

```
    input:focus {

        border:none;

        box-shadow: 2px 3px 4px green;

    }

        2px      - horizontal

        3px      - vertical

        4px      - blur
```

Ex: **Textbox with Data list**

```
<!DOCTYPE html>

<html>

  <head>

    <title>Google</title>

  </head>
```

```html
<body>
  <form>
    <div>
      <h1 align="center">Google</h1>
    </div>
    <div align="center">
      <input type="text" size="40" list="terms" >
      <datalist id="terms">
        <option>JavaScript Examples</option>
        <option>JavaScript Tutorial</option>
        <option>CSS Examples</option>
        <option>CSS Tutorial</option>
      </datalist>
    </div>
  </form>
</body>
</html>
```

Pattern for Input Element

[Regular Expression]

- Regular Expression is used to verify the format of input value.

- Regular Expression is built by using Meta Characters and Quantifiers.
- Pattern uses a Regular Expression to verify format of input value.

Syntax:

<input type="text" pattern="regExp">

Meta Character	Description
?	It defines zero or one occurrence of a character. Ex: <input pattern="colou?r" placeholder="color / colour" type="text" name="txtTest">
*	It defines zero or more occurrences of a character. Ex: <input pattern="colou*r" type="text" name="txtTest"> **[color, colour, colouur, coloruuur etc..]**
+	It defines one or more occurrences of a character. Ex: <input pattern="colou+r" type="text" name="txtTest"> **[colour, colouur…]**

. [dot]	Matches any single character in the specified string. Ex: <input pattern="b.y" type="text" name="txtTest"> **[buy, boy]** Ex: <input pattern=".y" type="text" name="txtTest"> **[by, my]** Ex: cow, toy, boy [pattern=".o."] Ex: cat, bat, mat, rat [pattern=".at"]
\	It is used as escape sequence character for special chars. [Chars used by parser] \+91 = +91
\d	It allows only numeric value, any single digit [0-9]. Ex: <input pattern="\d\d" type="text" name="txtTest"> [any 2 digits number] **Ex:**

	`<input pattern="\d?\d" type="text" name="txtTest">` [**one or 2 digits**] Ex: `<input pattern="[0-9]" type="text" name="txtTest">`
\D	Not a digit [^0-9] or \D only non-digit. [^0-9] Any value other than number. ^ Exclude Ex: `<input pattern="\D\D" type="text" name="txtTest">`
\w	Matches alpha numeric characters with underscore. Equivalent to [A-Za-z0-9_] Ex: `<input pattern="\w\w" type="text" name="txtTest">`
\W	Matches any character that is not a word character. [^A-Za-z0-9_] Ex:

	`<input pattern="\W" type="text" name="txtTest">` [%$#@&]
^	Exclude specified
\s	Match a single white space character. Including space, tab, form feed, line feed, and other Unicode chars. \n – line feed \f – form feed \t – horizontal tab \v – vertical tab Ex: `<input pattern="\w\s\w" type="text" name="txtTest">`
left|right	The "|" is used as OR. We can configure multiple by using OR. It can match with any of the specified. Ex: `<input pattern="green|red|blue" type="text" name="txtTest">`
[A-Z]	Only uppercase letters allowed
[a-z]	Only lowercase letters allowed
[0-9]	Only numeric allowed.
[a-zA-Z]	Both upper and lowercase allowed.
[a-Z]	Both upper and lowercase allowed.

[a-zA-Z0-9]	Alpha numeric allowed
[a,d,s]	Only specified chars allowed.
[^a,d,s]	Excluding the specified all others allowed.
[a-mA-M4-9]	Only chars in specified range allowed.
[^a-mA-M4-9]	Excluding specified chars range all others allowed.
(abc)	Exactly the specified group allowed in specified order.
$	Matches the end of input. "Ends with".
\^	Matches the beginning of input. "Starts with".

Quantifiers are used to define the range of value

Quantifier	Description
{n}	Exactly specified number of chars. n – refers to number. {8}
{n,m}	Minimum-n and Maximum-m {4,10} - 4 to 10
{n, }	Minimum-n and Maximum-any {4, }

Write a pattern to validate Name?

[Name can alpha numeric with lower, upper and underscore between 4 to 15 chars]

Ex: \w{4,15}

Write a pattern to validate "XX-0000-XX"?

<input pattern="\^[A-Z]{2}-[0-9]{4}-[A-Z]{2}$" type="text" name="txtTest">

Write a pattern to validate UK mobile number?

+447890-6970-69

\^\+44\d{4}-\d{4}-\d{2}$

\^\+44[0-9]{4}-[0-9]{4}-[0-9]{2}$

Write a pattern to allow only alpha numeric with _ 4 to 15 chars but

Atleast one or many characters can be Uppercase.

John_123N

(?=.*[A-Z])\w{4,15}

Ex:

<input pattern="(?=.*[A-Z])\w{4,15}" type="text" name="txtTest">

Number Input:

- HTML can use input type as "number".

- It allows only numeric values.
- All basic attributes are similar to text input.
- Instead of max length and min length number uses "Min and Max".
- Min: specifies the minimum range of value.
- Max: specifies the maximum range of value.
- Step: specifies the increment and decrement step value. [By default it is 1]

Syntax:

```
<input type="number" min="15" max="35" step="5" value="17" name="txtAge">
```

```
<input type="number" min="1.5" max="5.5" step="0.1" value="1.5" name="txtAge">
```

Date Input:

- HTML allows to input date value by using the "type=date".
- It is not supported on all browsers. hence we have to implement using jQuery.
    - **date**
    - **datetime-local**
    - **month**
    - **week**

Syntax:

```
<input type="date" min="2021-01-28"
max="2021-03-20" name="txtDob">
```

```
<input type="date" min="2021-01-28"
value="2021-01-29" max="2021-03-20"
name="txtDob">
```

- You can also use "type=datetime-local" which allows both date and time input.

```
<input type="datetime-local"  name="txtDob">
```

- You can also use "type=month" for month input.
- You can use "type=time" for time input.

Range Input:

- It will display a slider that allows to select a range of values.
- Its attributes are similar to number.
- Slider value you can show using JavaScript.
- **Slide value can be submitted but can't display on page in every browser.**

```
<input type="range" min="1000" value="1000"
max="10000"  name="txtDob">
```

Password Input:

- It is similar to text in all attributes.
- It will mask the text with password char "*"
- You can configure by using "type=password"

Syntax:

<input required pattern="[A-Z]{4,10}" type="password" name="txtPwd">

URL Input:

- It validates URL format.
- If you want the user to input website address [URL] and restrict to URL format the you can define "type=url"

Syntax:

<input type="url" name="txtUrl">

Email Input:

- It validates email address format.
- You can define "type=email"

Syntax:

<input type="email" name="txtEmail">

Color Input:

- HTML provides a color picker by using "type=color".
- It allows to select a color for color panel.
- The color code/name is submitted.

Syntax:

`<input type="color" name="txtColor">`

File Input:

- It allows the client to browse and select any file from computer to upload into server.
- However it is just a control for selecting file, upload logic we have to write by using "JavaScript/JQuery".
- You can define by using "type=file".
- You can use "multiple" attribute to enable selection for multiple files.

Syntax

`<input type="file" multiple name="txtPhoto">`

- You can configure specific type dynamically using MIME type or you can also use attribute "accept" for filtering the file type.

Syntax:

```
<input type="file" accept=".jpg" multiple
name="txtPhoto">
```

Radio Buttons:

- Radio buttons are used to exhibit "Mutex" [Mutual Exclusion] mechanism.
- Radio buttons allow to select one or multiple.
- Once radio button is checked, it can't be unchecked.
- To uncheck the radio button, you have to reload the page or configure "Mutex"
- "Mutex" is a multi-threading mechanism that loads all tasks into memory but allow only one task in process.
- To configure mutex all radios must run on same thread, which you can define by using "common name".
- "Checked" attribute is used to select radio.
- By default, radio submits "ON" as value.
- You can define a value to submit.

Ex:

<!DOCTYPE html>

```html
<html>
   <head>
      <title>Regular Expression</title>
   </head>
   <body>
      <form>
         <div>
            <label>Upload Photo</label>
            <div>
               <input type="radio" value="Male" name="gender" checked> Male
               <input type="radio" value="Female" name="gender"> Female
               <button>Submit</button>
            </div>
         </div>

      </form>
   </body>
</html>
```

CheckBox

- Checkbox allows user to select and deselect any option.
- You can use checkbox for selecting one or multiple options from a group of choices.
- The attributes are same as radio buttons
    - Id
    - Name
    - Class
    - Value
    - Checked etc.
- It is defined by using input attribute "type=checkbox".

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Regular Expression</title>
  </head>
  <body>
    <form>
      <div>
```

```html
        <label>Select Courses</label>
        <div>
            <input type="checkbox" name="course"
value="Java" checked> Java
            <input type="checkbox" name="course"
value=".NET"> .NET
            <button>Submit</button>
        </div>
      </div>
    </form>
  </body>
</html>
```

Ex: Apply effects checkbox checked property with CSS

```html
<!DOCTYPE html>
<html>
  <head>
    <title>CheckBox</title>
    <style>
      .container {
        width: 500px;
        height: 200px;
```

```html
        padding:5px;

        background-color: lightgray;

      }

      .terms+span {

        color:red;

      }

      .terms:checked+span {

        color:green;

      }

    </style>

  </head>

  <body>

    <form>

      <div>

        <label>Terms of Service</label>

        <div>

          <div class="container">

            <p>Depending on how you obtained the
Windows software, this is a license agreement
between (i) you and the device manufacturer or
software installer that distributes the software with
```

your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. Note that if you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.</p>

        </div>

        <div>

            <input class="terms" type="checkbox"> I Accept

        </div>

      </div>

    </div>

    </form>

  </body>

</html>

FAQ: How to design a checkbox list?

- HTML is not provided with checkbox list control, you have to design with CSS overflow technique.

```html
<!DOCTYPE html>
<html>
  <head>
    <title>Checkbox list</title>
    <style>
      ul {
        list-style: none;
        margin-left: -40px;
      }
      .container {
        border: 2px solid;
        width: 120px;
        height: 60px;
        overflow:auto;
      }
    </style>
  </head>
  <body>
```

```html
<h2>Select Courses</h2>
<div class="container">
    <ul>
        <li> <input type="checkbox"> Java </li>
        <li> <input type="checkbox"> .NET </li>
        <li> <input type="checkbox"> PHP </li>
        <li> <input type="checkbox"> UI </li>
        <li> <input type="checkbox"> Fullstack </li>
        <li> <input type="checkbox"> Oracle </li>
    </ul>
</div>
</body>
</html>
```

Dropdown list:

- It allows the user to select any one option from a group of choices.
- It shows the list of items using a dropdown menu.
- HTML provides the following elements for designing dropdown list:

<select>	It is used to configure a list.
<option>	It is used to configure a list item.
<optgroup>	It is used to group a set of options into one category.

- Every <option> comprises of following attributes
  - value
  - selected
  - disabled
- Every <option> comprises of following properties
  - value
  - text
  - selected
  - disabled
- Every option is RC data type

Ex:

<!DOCTYPE html>

<html>

  <head>

    <title>Dropdown</title>

  </head>

  <body>

    <h3>Select a Category</h3>

```html
    <form>
      <select name="lstCategories">
        <option>Select a Category</option>
        <option value="Ele101">Electronics</option>
        <option selected>Footwear</option>
        <option disabled>Fashion</option>
      </select>
      <button>Submit</button>
    </form>
  </body>
</html>
```

Ex: Option Group

```html
<!DOCTYPE html>
<html>
  <head>
    <title>Dropdown</title>
  </head>
  <body>
    <h3>Select a Product</h3>
```

```html
<form>
  <select name="lstProducts">
    <option>Select a Product</option>
    <optgroup  label="Electronics" >
      <option>Samsung TV</option>
      <option>LG Mobile</option>
    </optgroup>
    <optgroup label="Footwear">
      <option>Nike Casuals</option>
      <option>Lee Boot</option>
    </optgroup>
  </select>
  <button>Submit</button>
</form>
</body>
</html>
```

ListBox

- It everything same as dropdown list in elements and attribute.
- It allows to select one or multiple.

- To change the dropdown into listbox you have use the attribute "size or multiple"

Syntax:

```
<select size="3" multiple>
</select>
```

```
<!DOCTYPE html>
<html>
  <head>
    <title>Dropdown</title>
  </head>
  <body>
    <h3>Select a Product</h3>
    <form>
      <select size="3" multiple name="lstProducts">
        <optgroup  label="Electronics" >
          <option>Samsung TV</option>
          <option>LG Mobile</option>
        </optgroup>
        <optgroup label="Footwear">
```

```
            <option>Nike Casuals</option>
            <option>Lee Boot</option>
          </optgroup>
        </select>
        <button>Submit</button>
      </form>
   </body>
</html>
```

Textarea

- It is used to handle multiline input.
- It is similar to textbox but allows multiple lines.
- It is RC data element used to present plain text.
- Attributes are similar to text input, additionally uses
  - Rows
  - Cols

Syntax:

```
<textarea rows="4" cols="40>
    Your text… / optional
</textarea>
```

Ex:

```
<!DOCTYPE html>
```

```html
<html>
  <head>
    <title>Text Area</title>
    <style>
      dt {
        font-weight: bold;
      }
    </style>
  </head>
  <body>
    <dl>
      <dt>User Name</dt>
      <dd><input type="text"></dd>
      <dt>Address</dt>
      <dd>
        <textarea disabled rows="4" cols="40">
          <b>Your Address.. here..</b>
        </textarea>
      </dd>
      <dt>Comments</dt>
```

```
            <dd>

                <textarea rows="4" cols="40">


                </textarea>

            </dd>

        </dl>

    </body>

</html>
```

Meter Element

- It is used to display the grade meter.
- It can display a value range with
  - min
  - max
  - value
  - low
  - high

Syntax:

`<meter min="" max="" value="" low="" high="" id="" class="" name="">`

Ex:

`<!DOCTYPE html>`

```html
<html>
    <head>
        <title>Meter</title>
        <style>
            meter {
                width: 300px;
                height: 40px;
            }
        </style>
    </head>
    <body>
        <fieldset>
            <legend>Meter</legend>
            <dl>
                <dt>Normal Style</dt>
                <dd>
                    <meter></meter>
                </dd>
                <dt>Meter 40%</dt>
                <dd>
```

```
<meter min="1" max="100" value="40">

</meter>
</dd>
<dt>Meter 100%</dt>
<dd>
   <meter min="1" max="100" value="100">

</meter>
</dd>
<dt>Meter Poor</dt>
<dd>
    <meter min="1" max="100" value="100"
low="60" high="80">

</meter>
</dd>
<dt>Meter Weak</dt>
<dd>
    <meter min="1" max="100" value="100"
low="20" high="80"></meter>
```

```
            </dd>

        </dl>

      </fieldset>

  </body>

</html>
```

Progress Element:

- It is used to show the status of any task performed in the page.
- The task includes actions like
  - o Copying
  - o Downloading
  - o Uploading
  - o Connecting etc.
- It is used to display the time elapsed or the remaining to complete the task.
- Specially progress is used in pages that use "Ajax" [Asynchronous JavaScript And XML]
- Attributes used for progress
  - o Min
  - o Max
  - o Value

Syntax:

```
 <progress min="" max="" value="" name="">
</progress>
```

Ex:

```html
<!DOCTYPE html>
<html>
  <head>
    <title>Progress</title>
  </head>
  <body>
    <dl>
      <dt>Preparing for Download</dt>
      <dd>
        <progress></progress>
      </dd>
      <dt>80% Downloaded</dt>
      <dd>
        <progress min="1" value="80" max="100"></progress>
      </dd>
      <dt>Download Completed</dt>
      <dd>
```

```
            <progress min="1" max="100"
value="100"></progress>

        </dd>

    </dl>

  </body>

</html>
```

Form Output Element:

- It is a container element into which application can inject the result of a calculation or the outcome of user input.
- It is defined by using <output> tag.
- It requires a form event "oninput"

Ex:

```
<!DOCTYPE html>

<html>

  <head>

    <title>Output Element</title>

  </head>

  <body>
```

```html
<form oninput="total.value=qty.value*price.value">
    <dl>
        <dt>Name</dt>
        <dd><input type="text"></dd>
        <dt>Quantity</dt>
        <dd>
            <input type="number" id="qty" name="qty" value="1">
        </dd>
        <dt>Price</dt>
        <dd>
            <input type="text" id="price" name="price">
        </dd>
        <dt>Total</dt>
        <dd>
            <output name="total" for="qty price"></output>
        </dd>
    </dl>
```

```
        </form>

    </body>

</html>
```

Buttons:

- Buttons are used to confirm user actions.
    - o Record Actions
        - ▪ Insert, Update, Delete, Edit
    - o Record Navigation
        - ▪ Next, Previous, First, Last
    - o Miscellaneous Actions
        - ▪ Submit, Register, Login, Reset, Save, Open, Print, Cancel etc.
- **HTML 5** provides "button" element for designing button.
- Buttons in HTML are classified into 2 groups
    - o Generic Buttons
    - o Non-Generic Buttons
- **Generic Buttons have pre-defined functionality**
    - o Submit: Have the ability to submit "form".
      `<input type="submit">`
      `<button type="submit"> Text </button>`
      `<button> Text </button>`
    - o Reset: Have the ability to reset the form.
      `<input type="reset">`
      `<button type="reset"> Text </button>`

Note: HTML <button> Allows images and symbols.
HTML <input type="submit"> Will not allow symbols or images.

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Button</title>
    <link rel="stylesheet" href="/fonts/css/all.css">
  </head>
  <body>
    <form>
      <dl>
        <dt>Name</dt>
        <dd><input type="text" value="TV" name="txtName"></dd>
        <dt>Price</dt>
        <dd><input type="text" name="txtPrice"></dd>
        <dt>Stock</dt>
        <dd><input type="checkbox"> Available</dd>
```

```html
        </dl>
        <button>
            <span class="fa fa-user"></span>  Login
        </button>
        <button type="reset">
            <img src="/Images/cancel.png" width="40"
height="20">
        </button>
    </form>
  </body>
</html>
```

- **Non-Generic Button:** It is a simple button without any pre-defined functionality.

```html
        <input type="button">
        <button type="button">
```

Ex:

```html
<button type="button">
        <span class="fa fa-print"></span> Print
</button>
<input type="button" value="Save">
```

Note: Generic button can have the default functionality only when defined in "<form>" element.

Button size must be minimum 44x44 pixels.

Ex: Change Button Border Radius

```
<!DOCTYPE html>
<html>
  <head>
    <title>Button</title>
    <link rel="stylesheet" href="/fonts/css/all.css">
    <style>
      button {
        border:2px solid red;
        border-radius: 25px;
        height: 50px;
        background-color: lightpink;
      }
    </style>
  </head>
  <body>
```

```html
    <form>
      <dl>
        <dt>Name</dt>
        <dd><input type="text" name="txtName"></dd>
        <dt>Price</dt>
        <dd><input type="text" name="txtPrice"></dd>
        <dt>Stock</dt>
        <dd><input type="checkbox"> Available</dd>
      </dl>
      <button type="reset">Reset</button>
    </form>
  </body>
</html>
```

Ex: Amazon Login

```html
<!DOCTYPE html>
<html>
  <head>
    <title>Amazon Login</title>
```

```
<style>
    .container {
        border:1px solid gray;
        border-radius: 5px;
        width: 400px;
        height: 400px;
        justify-content: center;
        margin:auto;
        padding:40px;
    }
    h1 {
        font-family: sans-serif;
        font-weight:lighter;
    }
    label {
        font-weight: bold;
        font-family: Arial;
    }
    .form-control {
        width: 100%;
```

```css
        height: 30px;

        border-radius: 5px;

        border:2px solid orange;

        margin-top: 5px;

    }
    .btn {

        width: 100%;

        height: 40px;

        border-radius: 5px;

        background-color: lightyellow;

        margin-top: 10px;

    }
    .form-group {

        margin-bottom: 15px;

    }
    a {

        text-decoration: none;

        font-size: 18px;

    }
</style>
```

```html
</head>
<body>
    <div align="center">
        <img src="/Images/amazon.PNG" height="50" width="150">
    </div>
    <div class="container">
        <h1 align="left">Sign-in</h1>
        <div class="form-group">
            <label>Email or mobile phone number</label>
            <div>
                <input class="form-control" type="text">
            </div>
        </div>
        <div class="form-group">
            <button class="btn">Continue</button>
        </div>
        <div class="form-group">
            <p>By continuing, you agree to Amazon's <a
href="#">Conditions of Use</a> and Privacy
Notice.</p>
```

```
      </div>

      <div class="form-group">

        <details>

          <summary><a href="#">Need
Help?</a></summary>

            <p><a href="#">Recover Password</a></p>

            <p><a href="#">Edit Account
Details</a></p>

        </details>

      </div>

    </div>

  </body>

</html>
```

Multimedia in HTML

- Multimedia is all about animations, audio and video.
- HTML provides various elements for presenting animations, audio and video in page.

Marquee:

- It is used to display sliding and scrolling content in page.

- <marquee> is a container that can contain scrolling and sliding content.

    Syntax:

    <marquee>

      Your content

    </marquee>
- You can use the following attributes to handle marquee

Attribute	Description
Scrollamount	Control the marquee scrolling speed [1 to 100]. Syntax: <marquee scrollamount="15"> Flash.. Flash.. 70% OFF on electornics. </marquee>
direction	It specifies the scrolling directions, which can be left, right, up or down. Syntax: <marquee direction="up"> </marquee>
Width and Height	Sets the width and height for marquee content.

	Syntax: <marquee width="100" height="300"> </marquee>
behavior	It changes the marquee behaviour from scrolling to sliding. It can be defined as "alternate, scroll and slide". Ex: <marquee behavior="alternate" scrollamount="15"> Flash.. Flash.. 70% OFF on electornics. </marquee>
Loop	It specifies the number of time marquee content need to display. Ex: <marquee loop="3" scrollamount="15"> Flash.. Flash.. 70% OFF on electornics. </marquee>
Scrolldelay	It delays the start of marquee. <marquee scrolldelay="100"> </marquee>
Bgcolor	It sets background color for marquee area.

	Syntax: <marquee bgcolor="yellow"> </marquee>

Marquee Events are "onmouseover" and "onmouseout".

The methods "start()" is to start marquee and "stop()" to stop the marquee()".

Ex:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Marquee</title>
    <style>


    </style>
  </head>
  <body>
    <div>
      <marquee scrolldelay="10">
      Flash.. Flash.. 70% OFF on electornics.
```

```html
        </marquee>
        <marquee scrolldelay="25">
            Flash.. Flash.. 70% OFF on electornics.
        </marquee>
        <marquee scrolldelay="50">
            Flash.. Flash.. 70% OFF on electornics.
        </marquee>
        <marquee scrolldelay="100">
            Flash.. Flash.. 70% OFF on electornics.
        </marquee>
        <marquee scrolldelay="300">
            Flash.. Flash.. 70% OFF on electornics.
        </marquee>
    </div>
    <div>
        <marquee onmouseout="this.start()"
onmouseover="this.stop()" bgcolor="yellow"
width="100" scrollamount="10" direction="up">
            <div>
                <img src="../Images/speaker.jpg"
width="100" height="100">
```

```html
			</div>
			<div>
				<img src="../Images/shoe.jpg" width="100" height="100">
			</div>
			<div>
				<img src="../Images/shoe1.jpg" width="100" height="100">
			</div>
			<div>
				<img src="../Images/earpods.jpg" width="100" height="100">
			</div>
			<div>
				<img src="../Images/shirt.jpg" width="100" height="100">
			</div>
		</marquee>
	</div>
  </body>
</html>
```

Embed Audio and Video Content

- HTML can use "<embed>" element to embed any multi media content into page.
- HTML 5 introduces <video> and <audio> elements for embedding multi media.

Video Element:

- HTML Video Element <video> embeds a media player into web page.
- The media player will support video playback in document.
- You can embed "audio" content with <video> tag. But recommended to use <audio> tag for audio content, as it provides better attributes for audio.
- The commonly used attributes for "<video>" element

Attribute	Description
autoplay	It uses "boolean" value [true/false]. It enables auto play when set to true.
controls	It is used to define controls for media player. Controls can be like seekbar, and play/resume etc.
crossorign	It indicates whether to use CORS.

Height /width	To define width and height of media player.
Loop	It uses a boolean value, which allows to loop the video continuously.
Muted	It uses boolean value to mute the video on loading.
Poster	It is used as thumbnail for video before playback.
Src	It defines the name and location of video content.

Syntax:

<video muted src=""" poster="""">

  Message – Is displayed when browser is unable to use video element.

</video>

Note: **You can also use <source> tag for configuring video source. This technique is used to embed multiple videos.**

Syntax:

   <video attributes>

```html
            <source src="name.avi"> </source>
            <source src="name.ogg"> </source>
        </video>


Ex:
<!DOCTYPE html>
<html>
    <head>
        <title>Video</title>
    </head>
    <body>
        <h2>Video Element</h2>
        <video controls width="300" height="200"
src="../docs/class.mp4">
            <p>Video is not supported on your browser</p>
        </video>
    </body>
</html>


Ex:
```

```html
<!DOCTYPE html>
<html>
  <head>
    <title>Video</title>
  </head>
  <body>
    <h2>Video Element</h2>
    <video poster="../Images/amazon.PNG" width="300" height="200">
        <source src="../docs/class.mp4" >
        <p>Video is not supported on your browser</p>
    </video>
    <h2>Video Embed</h2>
    <embed src="../docs/class.mp4" >
  </body>
</html>
```

Note: Audio element is also similar to video. [mp3, MIDI**]**

Syntax:

```html
 <audio controls>
   <source src="music.mp3">
```

```
</audio>
```

Poster can't be defined for audio on various browsers.