**Web Applications**

**1. What is Network?**

- A computer network comprises of group of computers connecting with each other for sharing of information and

resources.

- ARPANET [Advance Research Projects Agency Network] is the first computer network introduces by US-DOD.

- Network is classified into various type group based on range and capacity.

a) LAN

b) MAN

c) WAN

**2. What is Internet?**

- Internet is a wide area network that connects computers across the globe.

- CERN labs introduced the concept of Internet.

[Council for European Research and Nuclear]

**3. What is Web?**

- Web is a portion of Internet with restricted access.

- "Tim Berners Lee" introduced the concept of web.

- Web standards are now maintained by a community "W3C".

[Word Wide Web Consortium] - w3.org

- Web Standards follow 4 basic principles

a) Accessibility

b) Internationalization

c) Privacy

d) Security

- The latest version of Web is "Web3".

**4. What web comprises of ?**

- A typical web comprises of

a) Website

b) Web Application

c) Blogs [Web-Log]

d) Micro Blogs

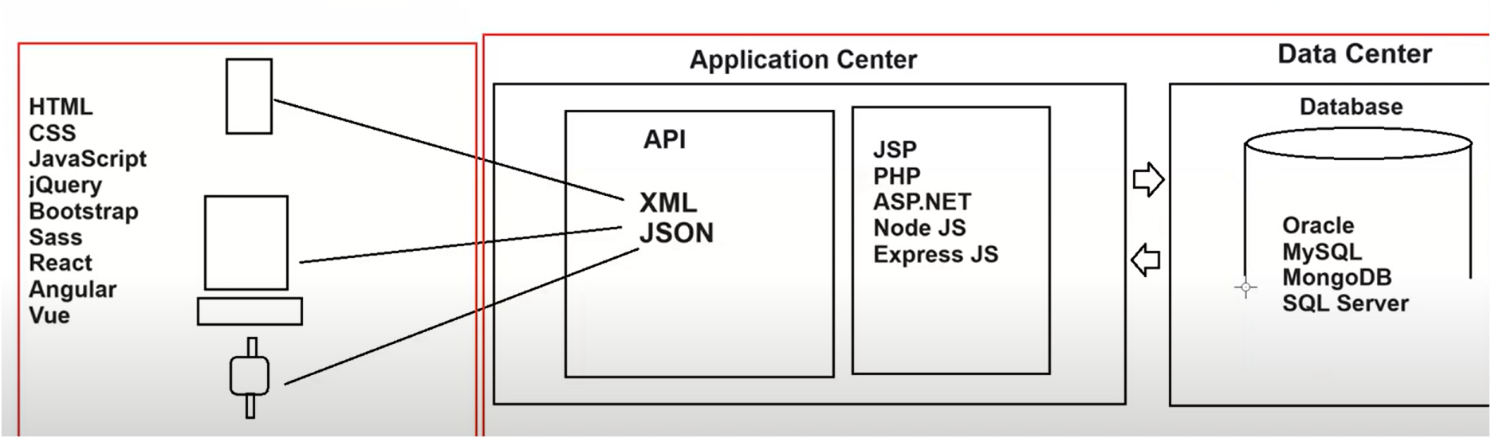
e) Wiki [Quick]

f) Podcasting

g) Widgets

etc..

**5. Web Application Architecture**



What is Network?

What is Internet?

What is Web?

Web Standards & Principles?

**Setup Environment for Web Development**

**1. Your device requires Window 8+ versions. You can also have other OS services like**

**Mac, Linux.**

**2. Download and Install "Node JS" on your PC.**

https://nodejs.org/en

- Node JS is a JavaScript runtime used by developers to build Servers,

Web Applications, Command Line Tools & Scripts.

- After installing open Command Prompt "run > cmd"

C:\> node -v // make sure that Node is above 20x version

C:\> npm -v // NPM is above 8x version

- NPM is "Node Package Manager".

- Package Manager is a software tool used by developers to install, update and

uninstall any library or framework required for project.

- There are various package manager tools like

a) NPM

b) Yarn

c) NuGet

d) RubyGEMS

e) Composer etc..

**3. Download and Install "Visual Studio Code" editor**

- Editor provides an IDE [Integrated Development Environment]

- It allows to build, debug, test and deploy applications.

- There are various types of editors

a) Webstrom

b) Sublime

c) Edit Plus

d) PyCharm

e) Visual Studio

f) Visual Studio Code etc..

https://code.visualstudio.com/

**4. Open Visual Studio Code on your PC and install following extensions**

a) Live Server [Ritwick Dey]

b) vscode-icons [vscodeicons.team]

c) IntelliSense for CSS class names in HTML

d) ESLint

- Live server provides a local server for hosting your web applications.

- Live server runs on "http://127.0.0.1" (or) "http://localhost" [Browser]

Run => ping -t 127.0.0.1

1. Install Node JS

C:\>node -v

C:\>npm -v

2. VS Code

3. Extensions

**Creating Web Application**

**FAQ: What is a Website or Web Application?**

Ans: Website is a virtual directory on server that provides access to resources on

server.

**FAQ: What is Web Server?**

Ans: Web Server resembles both hardware and software, it satisfies client request by

sending and receiving data. Local web server runs on "http://127.0.0.1".

**FAQ: Where the resources are kept?**

Ans: Web Application resources are kept in "Physical Path", which is accessed by using "Virtual Path".

D:\project => Physical Path

http://127.0.0.1/project => Virtual Path

http://127.0.0.1:5500 => Virtual Path

Every project runs on specific "Port" number.

**1. Create a new folder for your project at any location on your PC.**

D:\Flipkart

**2. Open Project folder in VS Code**

**3. Open Terminal in VS Code**

Terminal Menu => New Terminal

(or)

Ctrl + `

**4. Switch terminal to "Command Prompt" from "Power Shell"**

**5. Run the following command**

> npm init -y

It generates "package.json", which is a configuration file required for project.

It comprises of project meta data, which includes details like

a) Author

b) Project Name

c) Version Number

d) Test Commands

e) Entry Point

f) Dependencies etc..

**6. Add a new file into project by name "README.md". It is a help document designed**

**by developer for developer.**

**7. Add folders**

a) public

b) src

- public is used to keep all static resources like html, images, documents, videos,

spread sheet, ppt, etc.

- src is used to keep all dynamic resources like css, scss, js, ts, jsx, tsx etc.

D:\Flipkart

|

|\_public

| |\_images

| |\_videos

| |\_docs

|

|\_src

| |\_scripts

| |\_styles

| |\_scss

|

|\_package.json

|\_README.md

https://www.freepik.com/

https://www.canva.com/

https://copilot.microsoft.com/

**8. Click "Go Live" in the status bar of VS code**

**Web Page**

- Web Page is a Hyper Text Document that provides an UI for interacting with the resources in application.

- Hyper refers to the term "Beyond".

- A Hyper Text Document can display content and take the user beyond displayed content.

- Web Pages are classified into 2 types

a) Static Page

b) Dynamic Page

- Static Page comprises of same content to display as response across multiple requests. It have extensions ".html, .htm"

- Dynamic page have a customized response for every client request. It have extensions ".jsp, .asp, .aspx, .php"

- HTML is a language used for designing both static and dynamic pages.

**HTML**

- Hyper Text Markup Language

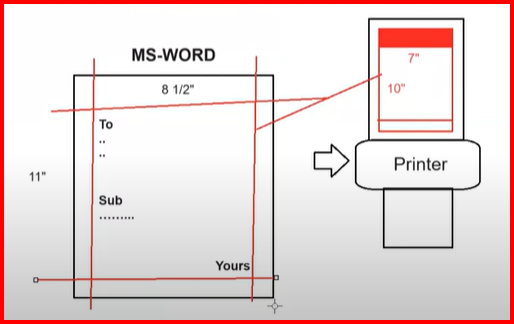
- Hyper means "Beyond".

- Hyper text navigates the user beyond what he can see on screen.

- Markup refers to the term "Marking Up", which is a process of preparing content to present on desired target

location.

- HTML is a markup language for presenting content on browser.



**Evolution of HTML:**

- Internet started with a browser called "Mosaic".

- CERN [Council for European Research and Nuclear] labs developed a language called GML [Generic Markup Language] for browser.

- Later new features were added to GML and improved as "SGML".

[Standard Generic Markup Language]

- "Tim Berners Lee" in early 1990 introduced HTML which is super to GML & SGML.

- IETF [Internet Engineering Task Force] developed HTML up to version 3.1.

- In 2004 "WHATWG" [Web Hyper Text Application Technology Work Group] took the responsibility of HTML and

started evolving and maintaining HTML till date.

- WHATWG start HTML4 in 2004, and developed a new version HTML5 2014.

- The latest available version of HTML is HTML5.

https://whatwg.org/

mdn - <https://developer.mozilla.org/en-US/>

**Browser Architecture**

- Browser is a software tool used by client to access and view web pages.

- Some of the popular browser softwares

\* Chrome

\* Edge

\* FireFox

\* Opera

\* Safari etc..

- Every browser comprises of following components

a) User Interface

b) UI Backend

c) Browser Engine

d) Rendering Engine

e) Networking

f) JavaScript Interpreter

g) Data Persistance

**User Interface & UI Backend:**

- UI comprises of buttons [ back, referesh, forward] and other elements for interaction.

- The functionality for UI is defined in UI Backend.



**Browser Engine:**

- It is responsible for translating HTML & CSS into browser understandable content.

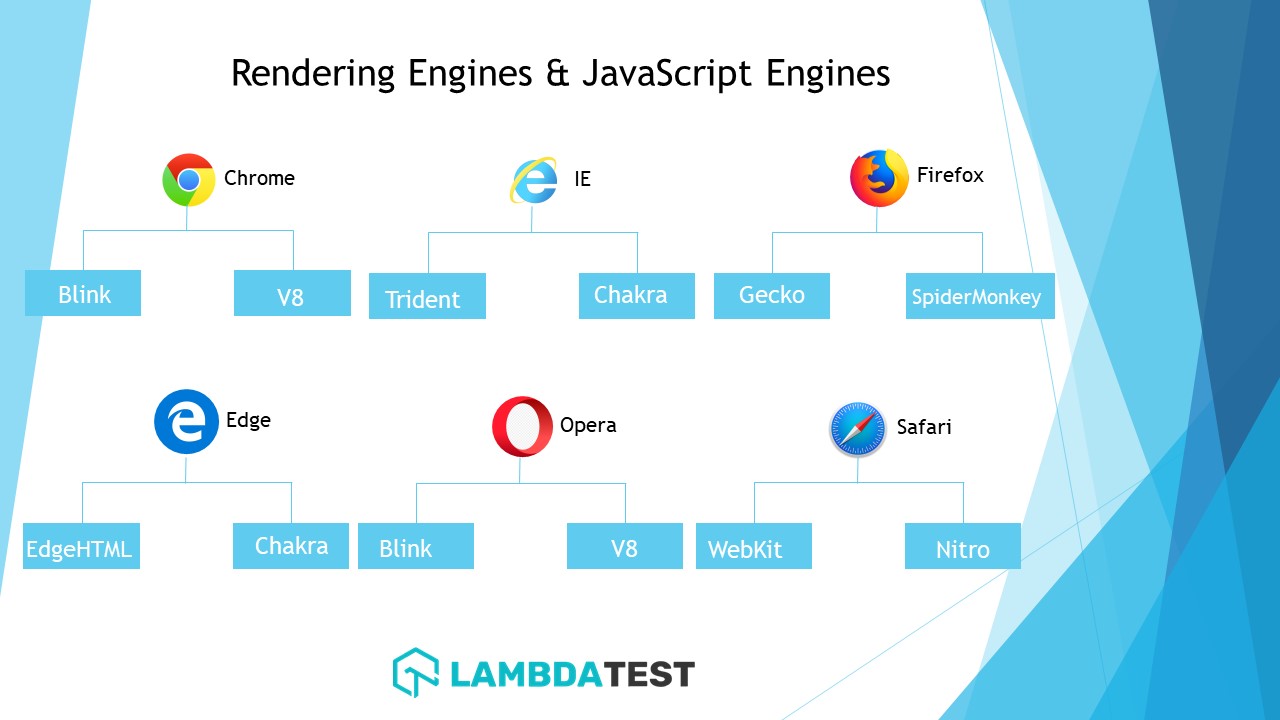
- Every browser have its own engine

Chrome V8, Blink

Safari Webkit

FireFox Spider Monkey, Gecko

Edge Chakra

Opera V8 

**Rendering Engine:**

- It is responsible for creating a layout and rendering the output.

- The generated output is presented by using a process called "Painting".

**JavaScript Interpreter:**

- Interactions in a web application are designed by using Javascript.

- Javascript in browser is translated by "JavaScript Interpreter".

**Networking:**

- It identifies the requests.

- It returns various resources on request.

- It reports issues on requests.

- It tracks the load time of resources.

**Data Persistance:**

- It is the storage for browser.

- Client details can be stored in browser.

- It have various storage locations like

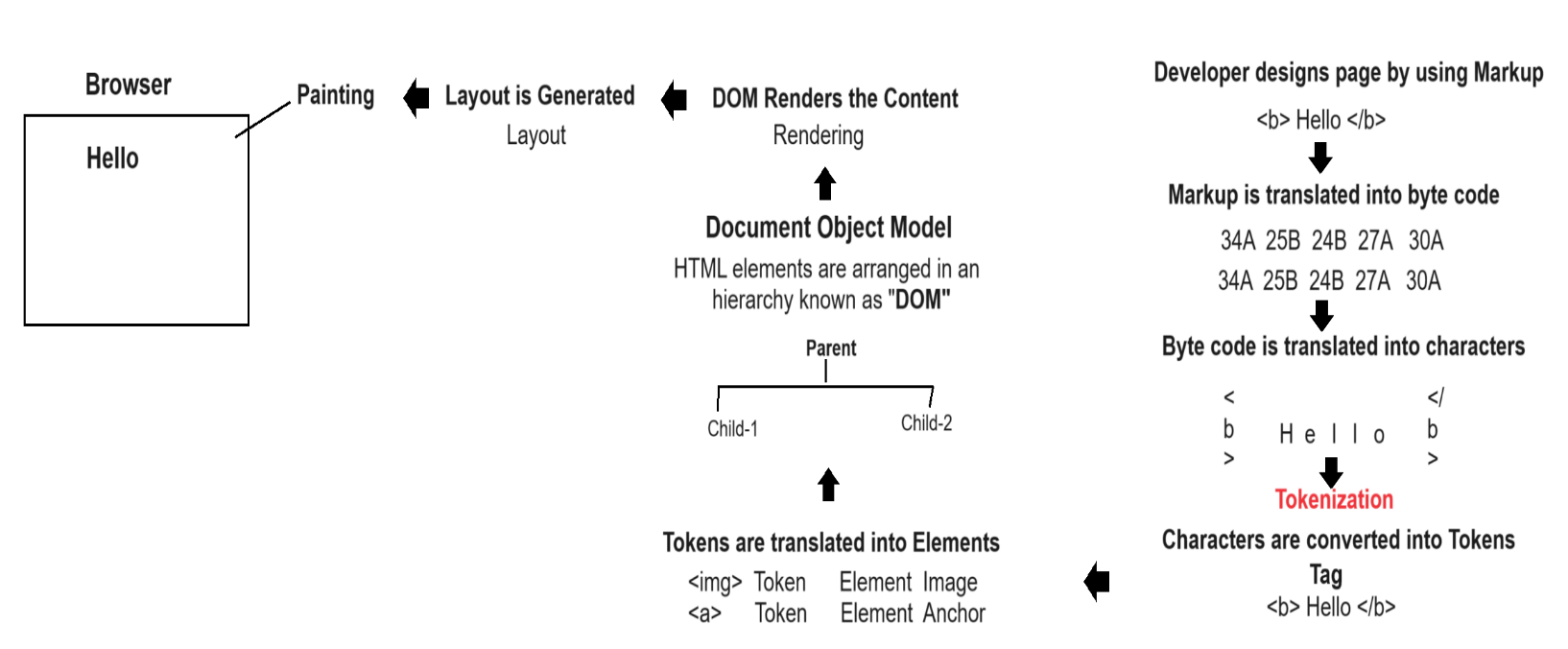
a) Cookies

b) Local Storage

c) Session Storage

etc..

**HTML Parsing**

**Markup => Bytes => Chars => Token => Node / Elements => DOM => Render => Layout => Paint**

- HTML comprises of set of elements arranged in a hierarchy called "DOM".

[Document Object Model]

- HTML elements are classified into 5 major groups

a) Normal Elements

b) Void Elements

c) RC Data Elements

d) Raw Text Elements

f) Foreign Elements

**Normal Element:**

- It returns a presentation directly on call back.

- It doesn't require additional attributes for initial presentation.

- It starts a presentation and can't stop implicitly.

- Explicitly it is stopped by using end token.

EX:

<b> Start Token

</b> End Token

**Void Element:**

- The term void refers to "no-return".

- Void element will not return any presentation directly on call back.

- It ends implicitly.

- Hence it doesn't require end token.

- It is a self ending element.

- It returns presentation by using additional attributes.

Ex:

<img>

**RC Data Type:**

- Rich content data type element.

- It only to display rich text content.

- It will not allow any another element within the context.

Ex:

<textarea> </textarea>

**Raw Text Elements:**

- Raw text is used for presentation.

- It doesn't require a token.

Ex:

&#8377;

&copy;

&deg;

**Foreign Elements:**

- A foreign element is an HTML element but requires special privilegations and credentials to use in browser.

- You have to import special libraries and extensions to run in browser.

Ex:

SVG

MATHML

Canvas

**FAQ's:**

**1. What are semantic and non-semantic elements?**

A. Semantic elements are used for a specific purpose.

Non-Semantics can used universally for any purpose.

<header>, <footer>, <h2> semantics

<span>, <div> non-semantics

**2. What are block level and inline elements?**

A. Block level element will not allow other element to wrap beside. You can display above or below.

Inline Elements will allow other elements to wrap beside.

HTML Page Structure:

**1. Page must have extension ".html or .htm"**

**FAQ: What is difference between .html & .htm ?**

Ans: Technically both are same.

".htm" is extension name according to the standards of OS.

**2. Every HTML page must have a document declaration. It is mandatory to defined document declaration from HTML 5 version.**

<!DOCTYPE html>

**FAQ: What is the role of document declaration?**

Ans: It notifies browser engine about version of HTML used in page design.

Document declaration is introduced from HTML 5 version.

Hence if there is no document declaration then it is HTML 4.

**3. HTML document scope is defined by using <html> element.**

**Syntax:**

<!DOCTYPE html>

<html>

</html>

**FAQ: Can we display multiple documents simultaneously at the same time in browser?**

Ans: Yes. Technically every document requires a scope to handle its elements.

**4. <html> element requires "lang" attribute to defines the regional language used for**

**web page. Browser handles date & time values, number and currency like reference**

**using language type.**

**Syntax:**

<!DOCTYPE html>

<html lang="en-in">

</html>

Note: "lang" is an attribute, technically attributes provide additional behaviour for element.

**5. Every HTML document have 2 sections at high level**

a) <head>

b) <body>

- Content in head section is defined to save "Round Trips".

- Content in body section uses round trips.

**FAQ: What is Round Trip?**

Ans: Round Trip is the process of accessing content from server on every request.

**FAQ: How to save round trip?**

Ans: By caching the data in browser memory we can save round trip.

Frequently requested data is fetched from memory instead of fetching from server.

**6. Every HTML page head section usually comprises of elements like**

a) <title>

b) <link>

c) <meta>

d) <style>

e) <script>

f) <base>

**Title:**

- It can display page title in browser title bar.

- It is used in bookmarking.

- It is used in SEO. [Search Engine Optimization]

**Syntax:**

<!DOCTYPE html>

<html lang="en-in">

<head>

<title> Flipkart | Shopping </title>

</head>

</html>



**HTML Page Structure**

- Document Declaration

- Document Scope

- Language for document

- Head Section

- Head Section Elements

a) Title

**2. Link**

- It can link an external document to web page.

- You can link shortcut icons, stylesheets etc.

**Ex:** Setup Favicon for Webpage

- Favicon must have extension ".ico"

- Make sure that the size is not maximum than 32pixels.

1. Open Ms-Paint on your PC

2. Go to File => Image Properties => Set size 32 x 32 pixels

3. Draw your icon and save into project physical path

D:\flipkart\public\images\favicon.png

4. Go to images folder in VS code and rename [F2] [fn + f2]

"favicon.ico"

5. Link the webpage

<head>

<title> Flipkart </title>

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

</head>

**Ex:** index.html

<!DOCTYPE html>

<html lang="en-in">

<head>

<title>Flipkart | Online Shopping</title>

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

</head>

</html>

**3. Meta**

- Meta refers to meta data.

- Meta data is information about your page given to browser or SEO.

- Meta provides options to make page

a) Responsive

b) SEO Friendly

**Meta Responsive:**

- Responsive allows the page to adjust its content according to the screen and device.

- To create a responsive web page several features are required.

- Meta is one of the feature to make page responsive.

<meta name="viewport" content="width=device-width, initial-scale=1">

a) view port : It identifies the device type and its screen width.

b) content : It specifies that your page content width is equal to device

width.

c) initial-scale : It is the default zoom level. 1=100%

Note: To test responsive page your can download and install "Mobile Simulator" for

google chrome browser.

<meta http-equiv="refresh" content="4">

a) http-equiv It defines the action to perform on browser.

"refresh" specifies that the page is requested at regular

intervals.

b) content It defines the time interval in seconds.

"4" specifies that page reloads every 4 seconds.

**Meta SEO:**

- SEO is Search Engine Optimization.

- Web Spiders and Web Crawlers are the robots used for searching and optimizing the results on Web.

- You have to design a page easily readable by ROBOTS, which is often called as SEO friendly.

- To make page SEO friendly meta provides various options

<meta name="keywords" content="some words used to search your business">

<meta name="description" content="something about your website">



<meta name="keywords" content="some keywords for finding page">

<meta name="description" content="something about your website">

<meta charset="utf-8">

a) UTF : Unicode Transformation Format

It used for defining memory for the type of language used for HTML.

b) 8 : It refers to 8 bit memory.

16 bit

32 bit

64 bit

**Ex:**

<!DOCTYPE html>

<html lang="en-in">

<head>

<title>Flipkart | Online Shopping</title>

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

<meta name="viewport" content="width=device-width, initial-scale=1">

<meta http-equiv="refresh" content="5" >

<meta name="keywords" content="some words">

<meta name="description" content="something about your website">

<meta charset="utf-8">

</head>

</html>

**4. Script & Style**

- <script> is used to embed client side and server side scripts into page.

- <style> is used to embed CSS styles into page.

**Summary:**

<head>

<title>

<link>

<meta>

<style>

<script>

</head>

**Body Section**

- It comprises of content to render in browser workspace.

- Content of body always require a round trip.

**Syntax:**

<body>

</body>

**Attributes:**

**1. bgcolor** : It sets a background color for page.

**2. text** : It sets color for text in page.

**HTML Colors:**

**1. Color Name**

**2. Shade Name**

**3. Hexadecimal code**

<body bgcolor="green">

<body bgcolor="lightgreen">

Note: Hexadecimal is a 3 or 6 chars value starting with "#".

Hexadecimal colors have RGB order. [Red Green Blue]

#RGB

#RRGGBB

R, G, B values can be "0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, f"

0 is dark

f is bright

**Syntax:**

<body bgcolor="#ff00ff" text="#fff">

**3. background** : It sets a background image for your page.

Note: Never use the physical path of any resource in web designing. You have to use

only the virtual path.

<body background="D:\MyProject\Photos\pic.jpg"> // invalid

<body background="./public/images/pic.jpg"> // valid

"\" => back slash it is used for physical path

"/" => forward slash it is used for virtual path

**CSS Background Styles:**

background-size : width, height in pixels or cover, contain

background-position : top, center, right, bottom, or you can use pixels

background-attachment : fixed, scroll

background-repeat : repeat, no-repeat, repeat-x, repeat-y

**Syntax:**

<head>

<style>

body {

background-size: 400px 400px;

background-repeat: no-repeat;

background-position: center center;

background-attachment: fixed;

}

</style>

</head>

<body background="./public/images/banner.jpg">

</body>

Note: You can set the body height in CSS "100vh" [Viewport Height] to fit the screen.

body {

height: 100vh;

width: 100vw;

}

Ex:

<!DOCTYPE html>

<html lang="en-in">

<head>

<title>Flipkart | Online Shopping</title>

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

<meta name="viewport" content="width=device-width, initial-scale=1">

<meta name="keywords" content="some words">

<meta name="description" content="something about your website">

<meta charset="utf-8">

<style>

body {

height: 100vh;

background-size: 400px 400px;

background-position: center center;

background-repeat: no-repeat;

background-attachment: fixed;

}

</style>

</head>

<body background="./public/images/banner.jpg" text="white">

</body>

</html>

**4. align** : It aligns the page content left, center, right or justify.

Syntax:

<body align="center | justify | left | right">

</body>

**5. leftmargin** ]

**6. rightmargin**  ] margin is the space between page and content border.

**7. topmargin** ] If there is no border then it is distance between page and

**8. bottommargin** ] content.

Syntax:

<body leftmargin="100" rightmargin="100" topmargin="50" bottommargin="50">

</body>

**9. alink** : It sets color for active links in page.

**10. vlink** : It sets color for visited links in page.

Syntax:

<body alink="red" vlink="#0d0">

<a href="https://www.amazon.in"> Amazon </a>

</body>

**Semantic and Non Semantic Elements to design page Layout:**

- HTML 4 uses tables to design page layout.

- Tables are not SEO friendly and lead to a situation called "Kiss-of-Death".

- HTML 5 introduces new semantics to design page layout so that is more SEO friendly and load content in an order.

- The semantics used for layout design are

<header>

<footer>

<section>

<aside>

<article>

<dialog>

<figure>

<figcaption>

<main>

<nav>

- The non semantics used for page design are

<div>

<span>

**FAQ: What is <div> ?**

Ans : It is a non semantic that defines the scope of any content in page.

A topic and sub topic can be separated with <div>, which is a division.

**FAQ: What is <span>?**

Ans: It is an non sematic that defines individual content within context of a topic.

It spans along with other content but accessible individually to highlight.

**CSS Border:**

{

border: size style color;

}

**size** : pixels

**style** : solid, double, dotted, dashed, groove etc.

**color** : colorName, code

EX:

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Home</title>

<style>

div {

border: 1px solid black;

padding: 20px;

margin: 10px;

}

span {

color:red;

}

</style>

</head>

<body>

<div>

Web Technologies

<div>

Front End

<div>

HTML <br>

It is a <span>markup</span> language.

</div>

<div>

CSS <br>

It define styles.

</div>

</div>

<div>

Back End

<div>

MongoDB <br>

It is database.

</div>

<div>

Node JS <br>

It is server side scripting.

</div>

</div>

</div>

</body>

</html>

**Header**

- It defines the content to display at top margin of page.

- Typically header comprises of

a) Brand Logo

b) Brand Title

c) Navbar

d) Search etc..

**Syntax:**

<header>

… your content …

</header>

https://www.getbootstrap.com => Themes

https://colorlib.com

**Setup Icons for project:**

1. Open terminal in your project

2. Run the command

> npm install bootstrap-icons --save

3. It will create a new folder by name "node\_modules" and install bootstrap icons library into node\_modules.

4. All icons are defined in file "bootstrap-icons.css", which you have to link to your web page.

<head>

<link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">

</head>

5. Bootstrap icons are configured under the reference of CSS class names. Class name

is defined by using "class" attribute.

<span class="bi bi-house"> </span>

<span class="bi bi-person"> </span>

<span class="bi bi-heart"> </span>

<span class="bi bi-facebook" > </span>

icons.getbootstrap.com

**Nav**

- It defines the navigation area in web page.

- Nav comprises of menu items used for navigation in application.

- It keeps nav item SEO friendly.

Syntax:

<nav>

<span> Home </span>

<span> About </span>

<span> Contact </span>

</nav>

**CSS Text Style Attributes:**

font-family : It defines font family name. [ Arial, Tahoma, Algerian …]

font-size : It sets text size

font-weight : It sets bold

font-style : It sets italics

color : It sets text color

Syntax:

{

font-family : Arial;

font-size: 20px;

font-weight: bold;

font-style: italics;

color: red;

}

**CSS Flex Display:**

display : flex It makes flexible alignment of content in a container.

flex-direction It aligns content in row or column. [by default it is row]

justify-content It keeps the content in container with

a) space-between

b) space-around

c) space-evenly

d) center

e) baseline [left]

f) end [right]

align-items It keeps the alignment of items in container

a) baseline

b) center

c) end

If container have more height then it can be

vertically top, center or bottom.

Syntax:

container

{

display: flex;

flex-direction: row;

justify-content: space-between;

align-items:center;

}

**Article**

- It is a semantic used for publishing highlights or latest trends of website.

- It keeps the trends of your site SEO friendly.

Syntax:

<article>

… offers …

</article>

**Section**

- It is a semantic used to display content between header and footer.

- Website related all content is kept inside section.

Syntax:

<header>

… top margin …

</header>

<section>

… page content …

</section>

<footer>

… bottom margin …

</footer>

Ex:

**shopper-template.html**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Shopper</title>

<link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">

<style>

header {

font-family: Segoe UI;

font-size: 22px;

display: flex;

flex-direction: row;

justify-content: space-between;

padding: 20px;

align-items: baseline;

}

.brand-title {

font-weight: bold;

font-size: 28px;

}

nav span {

margin-left: 10px;

margin-right: 10px;

}

.shortcuts span {

margin-right: 5px;

}

article {

background-color: black;

color:white;

text-align: center;

padding: 10px;

font-family: Segoe UI;

}

.bi-lightning-fill {

color:goldenrod;

}

</style>

</head>

<body>

<header>

<div>

<span class="brand-title">Shopper.</span>

</div>

<div>

<nav>

<span>Home</span>

<span>Catalog</span>

<span>Shop</span>

<span>Pages</span>

<span>Blog</span>

<span>Docs</span>

</nav>

</div>

<div class="shortcuts">

<span class="bi bi-search"></span>

<span class="bi bi-person"></span>

<span class="bi bi-heart"></span>

<span class="bi bi-cart2"></span>

</div>

</header>

<section>

<article>

<span class="bi bi-lightning-fill"></span>

<span> HAPPY HOLIDAY DEALS ON EVERYTHING </span>

<span class="bi bi-lightning-fill"></span>

</article>

</section>

<footer>

</footer>

</body>

</html>

**CSS Border & Radius**

border : It sets border size, style and color [all directions]

border-radius : It sets rounded border.

border-left

border-right

border-top

border-bottom

border-top-left-radius

border-top-right-radius

border-bottom-left-radius

border-bottom-right-radius

**Ex: Landkit**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Landkit</title>

<style>

header {

font-size: 22px;

font-family: Segoe UI;

display: flex;

flex-direction: row;

justify-content: space-around;

padding: 20px;

}

.title {

font-weight: bold;

color:blue;

font-size: 28px;

}

nav span {

margin-left: 20px;

margin-right: 20px;

}

.btn-buy {

background-color: blue;

color:white;

padding: 10px;

border-top-left-radius: 20px;

border-bottom-right-radius: 20px;

}

</style>

</head>

<body>

<header>

<div>

<span class="title">Landkit.</span>

</div>

<div>

<nav>

<span>Landings</span>

<span>Pages</span>

<span>Account</span>

<span>Documentation</span>

</nav>

</div>

<div>

<span class="btn-buy">Buy now</span>

</div>

</header>

</body>

</html>

Note: You can't change the width and height of any span element.

To control span width & height, you have to set the display style as "inline-block".

Syntax:

span {

display:inline-block;

width:30px;

height:30px;

border-radius:30px;

}



- Header

- Nav

- Section

- Article

**Footer**

- Footer defines the content to display at bottom margin of page.

- Typically footer comprises of

a) Services

b) Contact

c) Copyrights

d) Sitemap

e) Social Links etc..

**Aside**

- It is a semantic used to display content, which is not related to current context.

- It navigates the user outside current context to some other external services.

- Typically it contains ads, social links etc.

Syntax:

<aside>

<span> Facebook </span>

<span> Twitter </span>

</aside>

**CSS Grid:**

- It will set a fixed number of rows and columns.

- You can dynamically change the content of rows and columns.

- Grid is designed by using the attribute "display" set to "grid".

{

display: grid;

}

- Grid comprises columns defined using "grid-template-columns".

- Grid columns are defined with pixels [px] or fractions [fr].

- You can share among 1200px or 12fr.

Syntax:

{

display:grid;

grid-template-columns: 6fr 6fr;

}

Ex: Amazon Footer

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Amazon</title>

<link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">

<style>

.back {

background-color: grey;

color:white;

padding: 5px;

text-align: center;

font-family: Arial;

}

footer {

background-color: black;

color:white;

padding: 20px;

font-family: Arial;

display: grid;

grid-template-columns: 3fr 3fr 3fr 3fr;

}

footer span {

display: block;

margin-top: 20px;

}

.footer-title {

font-weight: bold;

font-size: 22px;

}

</style>

</head>

<body>

<div class="back">

Back to Top

</div>

<footer>

<div>

<span class="footer-title">Get to Know Us</span>

<span>About Us</span>

<span>Careers</span>

<span>Press Releases</span>

<span>Amazon Science</span>

</div>

<div>

<aside>

<span class="footer-title">Connect with Us</span>

<span class="bi bi-facebook"> Facebook</span>

<span class="bi bi-twitter-x"> Twitter</span>

<span class="bi bi-instagram"> Instagram </span>

</aside>

</div>

<div>

<span class="footer-title">Make Money with Us</span>

<span>Sell on Amazon</span>

<span>Sell under Amazon Accelerator</span>

<span>Protect and Build Your Brand</span>

<span>Amazon Global Selling</span>

<span>Supply to Amazon</span>

<span>Become an Affiliate</span>

<span>Fulfilment by Amazon</span>

<span>Advertise Your Products</span>

<span>Amazon Pay on Merchants</span>

</div>

<div>

<span class="footer-title">Let Us Help You</span>

<span>Your Account</span>

<span>Returns Centre</span>

<span>Recalls and Product Safety Alerts</span>

<span>100% Purchase Protection</span>

<span>Amazon App Download</span>

<span>Help</span>

</div>

</footer>

</body>

</html>

**Address**

- It is a semantic used for making contact details SEO friendly.

- Search engine can find the website contact details if they are defined in <address> element.

Syntax:

<address>

.. phone..

.. email..

</address>

Ex: Shopper-Template

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Shopper</title>

<link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">

<style>

header {

font-family: Segoe UI;

font-size: 22px;

display: flex;

flex-direction: row;

justify-content: space-between;

padding: 20px;

align-items: baseline;

}

.brand-title {

font-weight: bold;

font-size: 28px;

}

nav span {

margin-left: 10px;

margin-right: 10px;

}

.shortcuts span {

margin-right: 5px;

}

article {

background-color: black;

color:white;

text-align: center;

padding: 10px;

font-family: Segoe UI;

}

.bi-lightning-fill {

color:goldenrod;

}

section {

height: 100px;

}

footer {

background-color: black;

color:white;

font-family: Segoe UI;

padding: 20px;

}

.row-1 {

text-align: center;

}

.footer-title {

font-size: 24px;

font-weight: bold;

}

.row-2 {

text-align: center;

margin-top: 30px;

}

.email {

display: inline-block;

padding: 20px;

background-color: #888;

color:white;

width: 300px;

text-align: left;

}

.subscribe {

display: inline-block;

padding: 20px;

background-color: #444;

width: 150px;

margin-left: 20px;

}

.row-3 {

display: grid;

grid-template-columns: 2.4fr 2.4fr 2.4fr 2.4fr 2.4fr;

margin-top: 30px;

}

.col span {

display: block;

margin-top: 15px;

}

.col-title {

font-weight: bold;

font-size: 18px;

}

aside span {

padding-right: 10px;

padding-top: 20px;

display: inline-block;

}

</style>

</head>

<body>

<header>

<div>

<span class="brand-title">Shopper.</span>

</div>

<div>

<nav>

<span>Home</span>

<span>Catalog</span>

<span>Shop</span>

<span>Pages</span>

<span>Blog</span>

<span>Docs</span>

</nav>

</div>

<div class="shortcuts">

<span class="bi bi-search"></span>

<span class="bi bi-person"></span>

<span class="bi bi-heart"></span>

<span class="bi bi-cart2"></span>

</div>

</header>

<section>

<article>

<span class="bi bi-lightning-fill"></span>

<span> HAPPY HOLIDAY DEALS ON EVERYTHING </span>

<span class="bi bi-lightning-fill"></span>

</article>

</section>

<footer>

<div class="row-1">

<span class="footer-title">Want style Ideas and Treats?</span>

</div>

<div class="row-2">

<span class="email">Enter Email\*</span>

<span class="subscribe"> Subscribe </span>

</div>

<div class="row-3">

<div>

<span class="brand-title">Shopper</span>

<aside>

<span class="bi bi-facebook"></span>

<span class="bi bi-twitter"></span>

<span class="bi bi-instagram"></span>

<span class="bi bi-youtube"></span>

<span class="bi bi-linkedin"></span>

</aside>

</div>

<div class="col">

<span class="col-title">Support</span>

<span>Contact Us</span>

<span>FAQs</span>

<span>Size Guide</span>

<span>Shipping & Returns</span>

</div>

<div class="col">

<span class="col-title">Shop</span>

<span>Men's Shopping</span>

<span>Women's Shopping</span>

<span>Kids' Shopping</span>

<span>Discounts</span>

</div>

<div class="col">

<span class="col-title">Company</span>

<span>Our Story</span>

<span>Careers</span>

<span>Terms & Conditions</span>

<span>Privacy & Cookie policy</span>

</div>

<div>

<address class="col">

<span class="col-title">Contact</span>

<span>1-202-555-0105</span>

<span>1-202-555-0106</span>

<span>help@shopper.com</span>

</address>

</div>

</div>

</footer>

</body>

</html>

Ex: Flipkart footer

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Flipkart</title>

<style>

footer {

height: 300px;

background-color: black;

color:white;

font-size: 25px;

padding: 10px;

display: grid;

grid-template-columns: 6fr 6fr;

}

.col-1 {

display: grid;

grid-template-columns: 3fr 3fr 3fr 3fr;

}

.col-2 {

display: grid;

grid-template-columns: 6fr 6fr;

border-left: 1px solid white;

padding-left: 20px;

}

</style>

</head>

<body>

<footer>

<div class="col-1">

<div>

1

</div>

<div>

2

</div>

<div>

3

</div>

<div>

4

</div>

</div>

<div class="col-2">

<div>

1

</div>

<div>

2

</div>

</div>

</footer>

</body>

</html>

**Ex: Bootstrap header**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Bootstrap</title>

<link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">

<style>

header {

background-color: #0033ff;

color:white;

padding: 20px;

font-size: 20px;

font-family: Segoe UI;

display: flex;

justify-content: space-between;

}

.bi-bootstrap {

font-size: 25px;

}

.search-bar {

display: flex;

width: 300px;

justify-content: space-between;

border:1px solid white;

padding: 5px;

}

.btn-ctrl {

font-size: 14px;

background-color: #0000aa;

padding: 2px;

}

nav span {

padding-left: 10px;

}

.shortcuts span {

padding-right: 10px;

font-size: 17px;

}

</style>

</head>

<body>

<header>

<div>

<nav>

<span class="bi bi-bootstrap"></span>

<span>Docs</span>

<span>Examples</span>

<span>Icons</span>

<span>Themes</span>

<span>Blog</span>

</nav>

</div>

<div>

<span class="search-bar">

<div>

<span class="bi bi-search"></span>

<span>Search</span>

</div>

<div>

<span class="btn-ctrl">CTRL K</span>

</div>

</span>

</div>

<div class="shortcuts">

<span class="bi bi-github"></span>

<span class="bi bi-twitter"></span>

<span class="bi bi-circle-half"></span>

<span class="">|</span>

<span> v5.3 <span class="bi bi-chevron-down"></span> </span>

<span>|</span>

<span class="bi bi-sun-fill"></span>

<span class="bi bi-chevron-down"></span>

</div>

</header>

</body>

</html>

**Semantics for Layout Design**

- header  
- footer  
- section  
- article  
- aside  
- address

   **Main**

- Main in computer programming refers to "Entry Point".  
- Website entry point is usually for new users.  
- A new user can start browsing or accessing resources from Main area.  
  
Syntax:  
    <main>  
        … entry point …  
    </main>  
  
- A page can have multiple entry points.  
  
**CSS Colors:**  
  
1. Color Name  
2. Shade Name  
3. Hexadecimal  
4. rgb()  
    - Red, Green, Blue  
    - Every color is derived from combination of RGB.  
    - It is a method that uses color value range from 0 to 255.  
  
Syntax:  
     h2 {  
        color: rgb(redValue, greenValue, blueValue);  
     }  
  
Ex:  
    h2 {  
        color: rgb(255, 0, 0);  
     }  
  
  
5. rgba()  
    - Red, Green, Blue, Alpha  
    - Alpha is used to set transparent color, its value range is 0 to 1.  
  
Syntax:  
    body {  
        background-color: rgba(250,0,0,0.5);  
     }  
  
6. hsl()  
    - Hue, Saturation, Lightness  
    - Hue is RGB shade from 0 to 360 deg.  
            0 - 120    Red  
            121-240    Green  
            241-360    Blue  
    - Saturation is Grey % in color from 1% to 100%  
    - Lightness is brightness in color from 1% to 100%  
  
Syntax:  
    body {  
           background-color: hsl(hue, sat, light);  
    }  
  
Ex:  
    body {  
        background-color: hsl(20deg, 50%, 40%);  
    }  
  
7. hsla()  
    - Hue, Saturation, Lightness, Alpha  
     
Syntax:  
    body {  
        background-color: hsla(5deg, 50%, 50%, 0.6);  
    }  
  
  
8. Gradient Colors  
    - You can apply gradient by using "background-image"  
    - Linear Gradient  
    - Radial Gradient  
    - Gradient is a combinations of multiple colors and shades.  
  
    a) linear-gradient()        horizontal, vertical and diagonal  
    b) radial-gradient()        from center  
  
Syntax:  
    body {  
        background-image:  linear-gradient(to top right, red 50%, yellow, green);  
    }  
  
Ex:  
Netflix.html  
  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Netflix</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
        body {  
            background-size: cover;  
        }  
        .shade {  
            height: 100vh;  
            background-color: rgba(0,0,0,0.6);  
            margin-top: -10px;  
            margin-left: -10px;  
            width: 101.4%;  
        }  
        header {  
            color:white;  
            padding: 20px;  
            display: flex;  
            justify-content: space-between;  
        }  
        .brand-title {  
            color:red;  
            font-size: 40px;  
            font-family: Arial;  
            font-weight: bold;  
        }  
        .language {  
            background-color: white;  
            color:black;  
            padding: 5px;  
            border-radius: 5px;  
            font-size: 18px;  
            font-family: Segoe UI;  
        }  
        .btn-signin {  
            background-color: red;  
            color:white;  
            padding: 5px;  
            border-radius: 5px;  
            margin-left: 20px;  
            font-size: 18px;  
            font-family: Segoe UI;  
            display: inline-block;  
            width: 80px;  
            text-align: center;  
        }  
        section {  
            text-align: center;  
            color:white;  
            margin-top: 150px;  
            font-family: Arial;  
        }  
        .title {  
            font-size: 50px;  
            font-weight: bold;  
            margin-bottom: 20px;  
        }  
        .subtitle {  
            font-size: 30px;  
        }  
        main {  
            margin-top: 40px;  
        }  
        .email {  
            padding: 20px;  
            display: inline-block;  
            background-color: rgba(0,0,0,0.5);  
            width: 300px;  
            border:1px solid white;  
            text-align: left;  
            margin-right: 10px;  
        }  
        .btn-start {  
            background-color: red;  
            display: inline-block;  
            width: 200px;  
            padding: 20px;  
            font-size: 20px;  
        }  
    </style>  
</head>  
<body background="./images/netflix-banner.jpg">  
  <div class="shade">  
      <header>  
          <div>  
             <span class="brand-title">NETFLIX</span>  
          </div>  
          <div>  
              <span class="language">  
                  <span class="bi bi-translate"></span>  
                  <span>English</span>  
                  <span class="bi bi-chevron-down"></span>  
              </span>  
              <span class="btn-signin">  
                    <span>Signin</span>  
              </span>  
          </div>  
      </header>  
      <section>  
          <div class="title">Unlimited movies, TV shows and more</div>  
          <div class="subtitle">Watch anywhere. Cancel anytime.</div>  
          <main>  
               <span class="email">Your email address</span>  
               <span class="btn-start"> Get Started <span class="bi bi-chevron-right"></span> </span>  
          </main>  
      </section>  
  </div>    
</body>  
</html>

<https://www.instagram.com/sharmatechgroup/>  
  
  
  
**Semantics for Body layout**  
1. <header>  
2. <footer>  
3. <section>  
4. <aside>  
5. <article>  
6. <address>  
7. <nav>  
8. <main>  
  
                               **Dialog**

- It is used for displaying a popup message.  
- Dialog is hidden by default, you have to set "open" attribute.  
  
Syntax:  
    <dialog open>  
  
        your content  
  
    </dialog>  
  
  
                           **Figure & Caption**  
- It is a container used for display graphics and images.  
- It keeps the images SEO friendly.  
  
Syntax:  
    <figure>  
        … your image …  
  
        <figcaption> Fig-1 </figcaption  
  
    </figure>  
  
**CSS Background Image:**  
- CSS provides background color and image attributes.  
- You can set a background image for any element.  
  
Syntax:  
      {  
       background-image: url ("path\_name");  
      }  
  
- You can control background image with attributes  
  
    background-size  
    background-position  
    background-repeat  
    background-attachment  
     
**CSS Box Shadow & Text Shadow:**  
- Box shadow is defined for containers like div, header, section etc..  
- Text shadow is for container that have text.  
- Shadow have 4 values.  
        a) horizontal  
        b) vertical  
        c) blur  
        d) color  
  
Syntax:  
    {  
      text-shadow : Hpx  Vpx  Bpx  color;  
    }  
  
**CSS Hover and Opacity:**  
- CSS provides opacity attribute to set transparent content.  
- Opacity can from 0 to 1.  
  
        {  
         opacity: 0.5;  
        }  
  
- CSS provides "hover" class, which defined effects to apply when mouse pointer is over the element.  
  
        div {                => normal state  
        }  
  
        div:hover {        => on mouse over  
        }  
  
Ex:  
**Shopper-template.html**  
  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Shopper</title>  
    < rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
        header {  
            font-family: Segoe UI;  
            font-size: 22px;  
            display: flex;  
            flex-direction: row;  
            justify-content: space-between;  
            padding: 20px;  
            align-items: baseline;  
        }  
        .brand-title {  
            font-weight: bold;  
            font-size: 28px;  
        }  
        nav span {  
            margin-left: 10px;  
            margin-right: 10px;  
        }  
        .shortcuts span {  
            margin-right: 5px;  
        }  
        article {  
            background-color: black;  
            color:white;  
            text-align: center;  
            padding: 10px;  
            font-family: Segoe UI;  
        }  
        .bi-lightning-fill {  
            color:goldenrod;  
        }  
  
        footer {  
            background-color: black;  
            color:white;  
            font-family: Segoe UI;  
            padding: 20px;    
        }  
        .row-1 {  
            text-align: center;  
        }  
        .footer-title {  
            font-size: 24px;  
            font-weight: bold;  
        }  
        .row-2 {  
            text-align: center;  
            margin-top: 30px;  
        }  
        .email {  
            display: inline-block;  
            padding: 20px;  
            background-color: #888;  
            color:white;  
            width: 300px;  
            text-align: left;  
        }  
        .subscribe {  
            display: inline-block;  
            padding: 20px;  
            background-color: #444;  
            width: 150px;  
            margin-left: 20px;  
        }  
        .row-3 {  
            display: grid;  
            grid-template-columns: 2.4fr 2.4fr 2.4fr 2.4fr 2.4fr;  
            margin-top: 30px;  
        }  
        .col span {  
            display: block;  
            margin-top: 15px;  
        }  
        .col-title {  
            font-weight: bold;  
            font-size: 18px;  
        }  
        aside span {  
            padding-right: 10px;  
            padding-top: 20px;  
            display: inline-block;  
        }  
        main {  
            display: grid;  
            grid-template-columns: 4fr 4fr 4fr;  
            height: 450px;  
            margin-top: 5px;  
            margin-bottom: 10px;  
        }  
        .women-fashion {  
            background-image: url("images/women-fashion.jpg");  
            background-size: cover;  
            display: flex;  
            flex-direction: column;  
            justify-content: space-evenly;  
            align-items: center;  
            opacity: 0.6;  
        }  
        .men-fashion {  
            background-image: url("images/men-fashion.jpg");  
            background-size: cover;  
            display: flex;  
            flex-direction: column;  
            justify-content: space-evenly;  
            align-items: center;  
            opacity: 0.6;  
        }  
        .kids-fashion {  
            background-image: url("images/kids-fashion.jpg");  
            background-size: cover;  
            display: flex;  
            flex-direction: column;  
            justify-content: space-evenly;  
            align-items: center;  
            opacity: 0.6;  
        }  
        .main-title {  
            color:white;  
            font-size: 50px;  
            font-family: Segoe UI;  
            font-weight: bold;  
            text-shadow: 2px 2px 2px black;  
        }  
        .btn-shop {  
            background-color: white;  
            padding: 10px;  
            font-family: Segoe UI;  
            width: 130px;  
            text-align: center;  
        }  
        .women-fashion:hover {  
            opacity: 1;  
        }  
        .men-fashion:hover {  
            opacity: 1;  
        }  
        .kids-fashion:hover {  
            opacity: 1;  
        }  
    </style>  
</head>  
<body>  
    <header>  
        <div>  
            <span class="brand-title">Shopper.</span>  
        </div>  
        <div>  
            <nav>  
                <span>Home</span>  
                <span>Catalog</span>  
                <span>Shop</span>  
                <span>Pages</span>  
                <span>Blog</span>  
                <span>Docs</span>  
            </nav>  
        </div>  
        <div class="shortcuts">  
            <span class="bi bi-search"></span>  
            <span class="bi bi-person"></span>  
            <span class="bi bi-heart"></span>  
            <span class="bi bi-cart2"></span>  
        </div>  
    </header>  
    <section>  
        <article>  
            <span class="bi bi-lightning-fill"></span>  
            <span> HAPPY HOLIDAY DEALS ON EVERYTHING </span>  
            <span class="bi bi-lightning-fill"></span>  
        </article>  
        <main>  
            <div class="women-fashion">  
                 
                    <div class="main-title">Women</div>  
                    <div class="btn-shop">  
                        Shop Women <span class="bi bi-arrow-right"></span>  
                    </div>  
                 
            </div>  
            <div class="men-fashion">  
                <div class="main-title">Men</div>  
                <div class="btn-shop">  
                    Shop Men <span class="bi bi-arrow-right"></span>  
                </div>  
            </div>  
            <div class="kids-fashion">  
                <div class="main-title">Kids</div>  
                <div class="btn-shop">  
                    Shop Kids <span class="bi bi-arrow-right"></span>  
                </div>  
            </div>  
        </main>  
    </section>  
    <footer>  
        <div class="row-1">  
            <span class="footer-title">Want style Ideas and Treats?</span>  
        </div>  
        <div class="row-2">  
            <span class="email">Enter Email\*</span>  
            <span class="subscribe"> Subscribe </span>  
        </div>  
        <div class="row-3">  
            <div>                 <span class="brand-title">Shopper</span>  
                <aside>  
                    <span class="bi bi-facebook"></span>  
                    <span class="bi bi-twitter"></span>  
                    <span class="bi bi-instagram"></span>  
                    <span class="bi bi-youtube"></span>  
                    <span class="bi bi-linkedin"></span>  
                </aside>  
            </div>  
            <div class="col">  
                <span class="col-title">Support</span>  
                <span>Contact Us</span>  
                <span>FAQs</span>  
                <span>Size Guide</span>  
                <span>Shipping & Returns</span>  
            </div>  
            <div class="col">  
                <span class="col-title">Shop</span>  
                <span>Men's Shopping</span>  
                <span>Women's Shopping</span>  
                <span>Kids' Shopping</span>  
                <span>Discounts</span>  
            </div>  
            <div class="col">  
                <span class="col-title">Company</span>  
                <span>Our Story</span>  
                <span>Careers</span>  
                <span>Terms & Conditions</span>  
                <span>Privacy & Cookie policy</span>  
            </div>  
            <div>  
                <address class="col">  
                    <span class="col-title">Contact</span>  
                    <span>1-202-555-0105</span>  
                    <span>1-202-555-0106</span>  
                    <span>[help@shopper.com](https://mail.google.com/mail/?view=cm&fs=1&to=help%40shopper.com&authuser=0)</span>  
                </address>  
            </div>  
        </div>  
    </footer>  
</body>  
</html>

**Semantics and Entities for Body Content**

- Browser can't present the content exactly as defined in your editor.  
- Hence you have to use entities and semantics to display content as expected.  
  
**1. Line Break**<br> **2. Blank Space**        &nbsp;  
  
  
**FAQ: What is difference between <br>  &  <br /> ?**  
Ans:  
  - There is no <br /> in HTML.  
  - Browser can understand only <br>.  
  - <br /> is to represent self ending elements. [void]  
  
Syntax:  
         H &nbsp;&nbsp; T M L <br>  
         It is a markup language.  
  
  
**3. Preformatted**            <pre>         Keeps the formats as defined in editor **4. Code**                    <code>         To display code blocks or snippets  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        code {  
            color:white;  
        }  
        pre {  
            background-color: black;  
        }  
    </style>  
</head>  
<body>  
    <div>  
       <pre>  
        <code>  
            var createHelloWorld = function() {  
     
                return function(...args) {  
                     
                }  
            };  
        </code>  
       </pre>  
    </div>  
</body>  
</html>

**Body Semantic and Entities**

**1. Line Break**             <br>  
**2. Blank Space**        &nbsp;  
**3. Pre Formatted**       <pre>  
**4. Code**               <code>  
**5. Variables**             <var>  
  
Syntax:  
      var  <var> x </var> = 10;  
  
**6. Sample Text**         <samp>  
  
Syntax:  
     Write a program to print <samp> Hello ! World </samp>.  
  
**7. Big [Large Text]**<big>   
  
**8. Small [Small Text]**<small>  
  
Syntax:  
      <small> createHelloWorld </small>    
      <big> Hello ! World </big>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        var {  
            color:blue;  
        }  
        samp {  
            background-color: rgb(237, 236, 236);  
            padding: 2px;  
            border-radius: 2px;  
        }  
    </style>  
</head>  
<body>  
    <div>  
       Write a function <samp><small>createHelloWorld</small></samp> in JavaScript to print <samp><big>"Hello ! World"</big></samp>.  
       <pre>  
        <code>  
            var <var>createHelloWorld</var> = function() {  
     
                return function(...args) {  
                     
                }  
            };  
        </code>  
       </pre>  
    </div>  
</body>  
</html>  
  
**9. Headings**  
- Headings are used to summarize the content in page.  
- Headings make the topics SEO friendly.  
- Heading is defined with <hn> element, where "n" is level number from 1 to 6.  
  
Syntax:  
     <h1> Heading-1 </h1>  
     <h2> Heading-2 </h2>  
     …  
     …  
     <h6> Heading-6 </h6>  
  
**FAQ's:**  
**1. Why you need a heading element if you can define same appearance with styles?**A. To keep the topics SEO friendly.  
  
  
**2. What are the default styles applied for heading element?**  
A. font-size, font-weight, display:block.  
  
**3. How to remove any specific default style?**A. By using CSS style attributes defined for element, and set value as "unset".  
  
Syntax:  
    h1 {                             h1 {  
        font-weight:unset;  
        font-size:unset;                all : unset;  
        display:unset;  
    }                            }  
  
  
**4. Can we change the default style of heading?**A. Yes. By using style attributes.  
  
**Rules:**  
- Don't use too many headings in a page, it may SPAM the page.  
- Don't use headings to highlight any word or sentence in page.  
  
  
**10. Paragraphs and Blockquotes**  
- A paragraph is defined with <p> element.  
- Blockquote is similar to paragraph but used to summarize the detailed content.  
  
Syntax:  
    <p>  Paragraph </p>  
  
    <blockquote>  
       … your text...  
    </blockquote>  
  
- Blockquote have default padding left and right, which you can customize with styles.  
  
FAQ's:  
**1. How to set first line indent in paragraph or blockquote?**  
A. By using CSS attribute "text-indent"  
  
Syntax:  
    blockquote {  
        text-indent : 200px;  
    }  
  
**2. How to set a Dropcap?**  
A. By using CSS class "first-letter" and CSS attributes like "float, font-size, line-height".  
  
Syntax:  
    p::first-letter {  
            font-size : 45px;  
            font-weight: bold;  
        font-family: Arial;  
            float:left;  
        line-height:30px;  
    }  
  
**3. How to set space between lines, words and chars?**A. By using CSS attributes  
  
        a) line-height  
        b) letter-spacing  
        c) word-spacing  
  
Syntax:  
    p {  
       line-height : 40px;  
       letter-spacing: 2px;  
       word-spacing: 10px;  
    }  
  
**4. How to reduce the raggedness of right edge in a paragraph?**  
A. By using  
        a) text-align: justify  
        b) word-break:break-all  
  
Syntax:  
    p {  
        word-break: break-all ;  
    }  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        blockquote {  
            padding-left: 300px;  
            padding-right: 300px;  
            font-style: italic;  
            text-indent: 100px;  
            line-height: 40px;  
            word-spacing: 10px;  
            letter-spacing: 2px;  
        }  
        .para1::first-letter {  
            font-size: 60px;  
            font-weight: bold;  
            font-family: Algerian;  
            float: left;  
            line-height: 35px;  
            color:blue;  
        }  
        .para-2 {  
            word-break: break-all;  
        }  
    </style>  
   
</head>  
<body>  
    <h2 align="center">Sports News</h2>  
    <blockquote align="justify">  
        Lorem ipsum dolor sit amet consectetur adipisicing elit. Ut neque fugiat numquam consectetur ullam vero. Delectus ad officiis, repudiandae, sint dicta neque incidunt maxime accusantium eaque accusamus atque reprehenderit molestiae!  
    Lorem ipsum dolor sit amet consectetur, adipisicing elit. Nostrum veritatis dolores soluta, ipsam molestiae enim ullam quam tenetur laboriosam fuga? Quod odit dolores rerum? Esse, nisi numquam? Dignissimos, quod expedita?  
    </blockquote>  
    <p class="para1" align="justify">Lorem ipsum, dolor sit amet consectetur adipisicing elit. Soluta nostrum incidunt nesciunt veritatis aspernatur praesentium facilis labore iure adipisci fugiat! Id iure illo ratione blanditiis maxime ducimus facilis necessitatibus quidem?  
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        Lorem ipsum dolor sit amet consectetur, adipisicing elit. Fuga illum officiis optio quos, saepe ut, consequatur quidem at repudiandae perspiciatis laboriosam quaerat dicta incidunt ipsa facere debitis reprehenderit. Eveniet, architecto.  
        Lorem ipsum dolor sit amet, consectetur adipisicing elit. Doloribus voluptatem non sed minima officia nostrum id deleniti corrupti accusamus amet, modi cum itaque illum incidunt, hic quo alias? Voluptatibus, maiores?  
    </p>  
    <p class="para-2">  
        Lorem, ipsum dolor sit amet consectetur adipisicing elit. Aperiam est accusamus eligendi voluptates temporibus laudantium veniam. Pariatur quasi corrupti odio corporis at dolorum suscipit? Veritatis, itaque explicabo. Eligendi, ipsum et?  
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    dolor sit amet consectetur adipisicing elit. Minima molestias delectus qui pariatur animi veritatis error distinctio, et eligendi ut! Porro eligendi recusandae repellat mollitia molestias voluptas, vero dolores officiis.  
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  </p>  
</body>  
</html>  
  
**5. How to design scrollable paragraph?**  
A. By using CSS attribute "overflow" set to scroll.  
    To define overflow container width and height must be less than the content length.  
  
Syntax:  
       .container {  
        height: 200px;  
        width: 400px;  
        border:1px solid gray;  
        padding:10px;  
        overflow: auto;  
        text-align:justify;  
    }  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
       .container {  
         border:1px solid gray;  
         padding: 10px;  
         width: 500px;  
         height: 200px;  
         text-align: justify;  
         overflow: auto;  
       }  
    </style>  
   
</head>  
<body>  
    <h3>Terms of Service</h3>  
    <div class="container">  
        <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Deserunt, beatae delectus! Dicta, architecto id

sed accusantium corporis placeat eius impedit deleniti vero assumenda doloribus vel deserunt! Quaerat

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        </p>  
        <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Deserunt, beatae delectus! Dicta, architecto id sed accusantium corporis placeat eius impedit deleniti vero assumenda doloribus vel deserunt! Quaerat recusandae dignissimos quos?  
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            Lorem ipsum dolor sit amet consectetur adipisicing elit. In voluptate repellendus ipsam aspernatur magni natus quo? Quasi nostrum iste dignissimos dicta labore excepturi beatae fugiat mollitia ducimus fuga, impedit assumenda.  
        </p>  
         
    </div>  
</body>  
</html>

**6. How to define ellipsis in paragraph?**  
A.  
     - Set  "nowrap" using  "white-space" attribute.  
     - Set  "width" for paragraph.  
     - Set  "overflow" to hidden.  
     - Set  "text-overflow" as "ellipsis"  
  
Syntax:  
    p {  
         width: 300px;  
         border: 1px solid gray;  
         padding: 2px;  
         white-space: nowrap;  
         overflow: hidden;  
         text-overflow: ellipsis;  
    }  
  
**7. How to define screen tips?**  
A. By using "title" attribute for any container.  
  
Syntax:  
        <span title="Hyper Text Markup Language"> HTML </span>  
  
EX:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        p {  
            width: 350px;  
            border:1px solid gray;  
            padding: 2px;  
            white-space: nowrap;  
            overflow: hidden;  
            text-overflow: ellipsis;  
        }  
    </style>  
   
</head>  
<body>  
   <p title="Lorem ipsum dolor sit amet consectetur adipisicing elit. Sequi mollitia explicabo neque! Eveniet, harum itaque qui voluptas repudiandae quidem autem ipsum quisquam possimus fugit, consequuntur alias tempora, porro facere deserunt!">Lorem ipsum dolor sit amet consectetur adipisicing elit. Sequi mollitia explicabo neque! Eveniet, harum itaque qui voluptas repudiandae quidem autem ipsum quisquam possimus fugit, consequuntur alias tempora, porro facere deserunt!</p>  
</body>  
</html>  
  
**8. How to display paragraphs in multiple columns?**A. You can use "display:grid"  or  "columns" of CSS  
  
**9. What is difference between grid and columns?**  
A. Grid will not allow content of one column to span into another.  
     Columns allow continuous content, the content of one column will continue to next.  
  
**10. What are the attributes for columns?**  
A.  
**a) column**         : It defines the number of columns to display  
**b) column-gap**       : It sets space between columns  
    **c) column-width**     : It sets width for columns.  
    **d) column-rule**         : It sets a separator line between columns.  
                        [size , style and color]  
  
Syntax:  
    section {  
        columns : 4;  
        column-gap: 20px;  
        column-width: 200px;  
        column-rule: 1px dotted gray;  
    }  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        .title {  
            font-family: Arial;  
            font-size: 40px;  
            font-weight: bold;  
            padding: 10px;  
        }  
        .row-2 {  
            columns: 4;  
            column-rule: 2px dotted gray;  
            font-size: 12px;  
            text-align: justify;  
            column-gap: 20px;  
        }  
        section {  
            width: 60%;  
            border:15px groove black;  
            padding: 15px;  
        }  
        .row-1 {  
            margin-bottom: 10px;  
            text-align: center;  
            padding: 10px;  
        }  
        .service {  
            font-size: 15px;  
            text-align: center;  
            font-weight: bold;  
        }  
        .update {  
            background-color: black;  
            padding: 5px;  
            color:white;  
            text-align: center;  
            font-size: 15px;  
        }  
    </style>  
</head>  
<body>  
    <section>  
        <div class="row-1">  
            <span class="title">GHMC give thumbs-up to 7 projects</span>  
        </div>  
        <div class="row-2">  
            <div class="service">  
                  
            </div>  
            <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Quis ipsum ab qui quisquam perferendis, quo tenetur rem quia eveniet repellendus fugiat eius? Minima ullam sunt voluptas suscipit ipsa vitae deleniti. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Natus, fugit omnis. Neque illo et id cumque excepturi sunt optio aliquam quibusdam quia voluptatem nobis tempore mollitia, quae minus commodi perferendis. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Nihil eveniet ut officiis voluptatibus fuga eius explicabo nisi velit facilis obcaecati perferendis mollitia quis, illo, itaque, voluptate iste earum nobis id?</p>  
            <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Quis ipsum ab qui quisquam perferendis, quo tenetur rem quia eveniet repellendus fugiat eius? Minima ullam sunt voluptas suscipit ipsa vitae deleniti. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Natus, fugit omnis. Neque illo et id cumque excepturi sunt optio aliquam quibusdam quia voluptatem nobis tempore mollitia, quae minus commodi perferendis. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Nihil eveniet ut officiis voluptatibus fuga eius explicabo nisi velit facilis obcaecati perferendis mollitia quis, illo, itaque, voluptate iste earum nobis id?</p>  
            <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Quis ipsum ab qui quisquam perferendis, quo tenetur rem quia eveniet repellendus fugiat eius? Minima ullam sunt voluptas suscipit ipsa vitae deleniti. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Natus, fugit omnis. Neque illo et id cumque excepturi sunt optio aliquam quibusdam quia voluptatem nobis tempore mollitia, quae minus commodi perferendis. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Nihil eveniet ut officiis voluptatibus fuga eius explicabo nisi velit facilis obcaecati perferendis mollitia quis, illo, itaque, voluptate iste earum nobis id?</p>  
            <div class="update"> Latest Updates </div>  
            <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Quis ipsum ab qui quisquam perferendis, quo tenetur rem quia eveniet repellendus fugiat eius? Minima ullam sunt voluptas suscipit ipsa vitae deleniti. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Natus, fugit omnis. Neque illo et id cumque excepturi sunt optio aliquam quibusdam quia voluptatem nobis tempore mollitia, quae minus commodi perferendis. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Nihil eveniet ut officiis voluptatibus fuga eius explicabo nisi velit facilis obcaecati perferendis mollitia quis, illo, itaque, voluptate iste earum nobis id?</p>  
            <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Quis ipsum ab qui quisquam perferendis, quo tenetur rem quia eveniet repellendus fugiat eius? Minima ullam sunt voluptas suscipit ipsa vitae deleniti. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Natus, fugit omnis. Neque illo et id cumque excepturi sunt optio aliquam quibusdam quia voluptatem nobis tempore mollitia, quae minus commodi perferendis. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Nihil eveniet ut officiis voluptatibus fuga eius explicabo nisi velit facilis obcaecati perferendis mollitia quis, illo, itaque, voluptate iste earum nobis id?</p>  
            <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Quis ipsum ab qui quisquam perferendis, quo tenetur rem quia eveniet repellendus fugiat eius? Minima ullam sunt voluptas suscipit ipsa vitae deleniti. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Natus, fugit omnis. Neque illo et id cumque excepturi sunt optio aliquam quibusdam quia voluptatem nobis tempore mollitia, quae minus commodi perferendis. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Nihil eveniet ut officiis voluptatibus fuga eius explicabo nisi velit facilis obcaecati perferendis mollitia quis, illo, itaque, voluptate iste earum nobis id?</p>  
            <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Quis ipsum ab qui quisquam perferendis, quo tenetur rem quia eveniet repellendus fugiat eius? Minima ullam sunt voluptas suscipit ipsa vitae deleniti. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Natus, fugit omnis. Neque illo et id cumque excepturi sunt optio aliquam quibusdam quia voluptatem nobis tempore mollitia, quae minus commodi perferendis. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Nihil eveniet ut officiis voluptatibus fuga eius explicabo nisi velit facilis obcaecati perferendis mollitia quis, illo, itaque, voluptate iste earum nobis id?</p>  
            <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Quis ipsum ab qui quisquam perferendis, quo tenetur rem quia eveniet repellendus fugiat eius? Minima ullam sunt voluptas suscipit ipsa vitae deleniti. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Natus, fugit omnis. Neque illo et id cumque excepturi sunt optio aliquam quibusdam quia voluptatem nobis tempore mollitia, quae minus commodi perferendis. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Nihil eveniet ut officiis voluptatibus fuga eius explicabo nisi velit facilis obcaecati perferendis mollitia quis, illo, itaque, voluptate iste earum nobis id?</p>  
            <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Quis ipsum ab qui quisquam perferendis, quo tenetur rem quia eveniet repellendus fugiat eius? Minima ullam sunt voluptas suscipit ipsa vitae deleniti. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Natus, fugit omnis. Neque illo et id cumque excepturi sunt optio aliquam quibusdam quia voluptatem nobis tempore mollitia, quae minus commodi perferendis. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Nihil eveniet ut officiis voluptatibus fuga eius explicabo nisi velit facilis obcaecati perferendis mollitia quis, illo, itaque, voluptate iste earum nobis id?</p>  
            <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Quis ipsum ab qui quisquam perferendis, quo tenetur rem quia eveniet repellendus fugiat eius? Minima ullam sunt voluptas suscipit ipsa vitae deleniti. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Natus, fugit omnis. Neque illo et id cumque excepturi sunt optio aliquam quibusdam quia voluptatem nobis tempore mollitia, quae minus commodi perferendis. Lorem ipsum dolor, sit amet consectetur adipisicing elit. Nihil eveniet ut officiis voluptatibus fuga eius explicabo nisi velit facilis obcaecati perferendis mollitia quis, illo, itaque, voluptate iste earum nobis id?</p>  
        </div>  
    </section>  
</body>  
</html>  
  
**11. Text formatting in HTML**  
- Text formatting includes font and font effects.  
- The font is defined by using <font> element with size, color and face.  
  
Syntax:  
      <font  size=" "   face=" "   color=" ">   Text  </font>  
  
**a) size**        : It can be from 1 to 7 levels.  
**b) face**       : It refers to font family name.  
**c) color**      : It defines color name, shade or hexadecimal code.  
  
**FAQ: What are web-safe fonts?**  
Ans:    
     - If developer is using a font family installed on his device then other users  
       can watch using default font family.  
     - Web safe fonts are the default font family available across all devices.  
     - Standard web safe font families are  
            a) serif  
            b) sans-serif  
            c) monospace  
  
**Note: Don't use <font> element in modern web design.**  
  
- Text styles and effects are controlled by using the following elements  
  
**<b>**           Bold  
     **<strong>**        Strong - Bold  
**<i>**             Italics  
**<em>**         Emphasized - Italics  
     **<u>**             Underline  
     **<ins>**       Inserted - Underline  
**<strike>**         Strikeout  
**<del>**         Delete - Strikeout  
**<sup>**         Super Script  
**<sub>**         Sub Script  
  
**FAQ: What is difference between <b> and <strong> if both look similar?**  
Ans :  <b> is a design mode element to highlight.  
      <strong> is a review mode element to highlight.  
  
Note: Make sure that review elements are not present in page while publishing.  
  
Ex:  
<body>  
    Font style <b>Bold</b> is similar to <strong>Strong.</strong> <br>  
    Font style <i>Italics</i> is similar to <i> Emphasized.</i> <br>  
    Font effect <u>Underline</u> is similar to <ins>Inserted.</ins> <br>  
    Font effect <strike>Strikeout</strike> is similar to <del>Deleted.</del>  
</body>

**12. Data List with Terms and Definitions**  
- Data list defines with <dl>  
- List comprises terms defined with <dt>  
- Every term have definitions <dd>  
  
Syntax:  
    <dl>  
        <dt>Term </dt>  
        <dd> Definition </dd>  
    </dl>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        dt {  
            background-color: lightgray;  
            font-weight: bold;  
            padding: 5px;  
            margin-bottom: 5px;  
        }  
    </style>  
</head>  
<body>  
     <dl>  
        <dt>HTML</dt>  
        <dd>It is a markup language.</dd>  
        <dd>It is used for presentation.</dd>  
        <dt>CSS</dt>  
        <dt>Styles</dt>  
        <dd>It defines styles. </dd>  
        <dt>JavaScript</dt>  
        <dd>It manipulates DOM.</dd>  
     </dl>  
</body>  
</html>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        dt {  
            background-color: black;  
            font-weight: bold;  
            padding: 5px;  
            margin-bottom: 5px;  
            color:white;  
        }  
        dd {  
            background-color: lightgray;  
            padding: 5px;  
            margin-bottom: 5px;  
        }  
        dl {  
            display: grid;  
            grid-template-columns: 3fr 9fr;  
            width: 50%;  
        }  
    </style>  
</head>  
<body>  
     <dl>  
        <dt>Your Name</dt>  
        <dd>some text</dd>  
        <dt>Age</dt>  
        <dd>some age</dd>  
        <dt>City</dt>  
        <dd>some city</dd>  
        <dt>Email</dt>  
        <dd>[something@gmail.com](https://mail.google.com/mail/?view=cm&fs=1&to=something%40gmail.com&authuser=0)</dd>  
     </dl>  
</body>  
</html>  
  
**CSS Sticky Position:**  
- It keeps elements accordion to normal flow of document.  
- It allows to scroll up to specified position and stick to browser.  
- It allows other content to scroll in backdrop.  
  
Syntax:  
    dt {  
        position:sticky;  
        top:0px;  
    }  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        dt {  
            background-color: black;  
            font-weight: bold;  
            padding: 5px;  
            margin-bottom: 5px;  
            color:white;  
            position: sticky;  
            top: 0px;  
        }  
        dd {  
            background-color: lightgray;  
            padding: 5px;  
            margin-bottom: 5px;  
        }  
        dl {  
            width: 200px;  
        }  
    </style>  
</head>  
<body>  
     <dl>  
        <h2>Amazon</h2>  
        <dt>Electronics</dt>  
        <dd>Televisions</dd>  
        <dd>Mobiles</dd>  
        <dd>Watches</dd>  
        <dd>Watches</dd>  
        <dt>Footwear</dt>  
        <dd>Casuals</dd>  
        <dd>Sneakers</dd>  
        <dd>Boots</dd>  
        <dt>Fashion</dt>  
        <dd>Kids</dd>  
        <dd>Women</dd>  
        <dd>Men</dd>  
        <dd>Kids</dd>  
        <dd>Women</dd>  
        <dd>Men</dd>  
        <dd>Kids</dd>  
        <dd>Women</dd>  
        <dd>Men</dd>  
        <dd>Kids</dd>  
        <dd>Women</dd>  
        <dd>Men</dd>  
        <dd>Kids</dd>  
     </dl>  
</body>  
</html>  
  
**13. Fieldset with Legend**  
- Fieldset is a frame used to define a container with a category of content.  
- Legend is a caption defined for fieldset.  
  
Syntax:  
    <fieldset>  
        <legend> Title </legend>  
  
        … your content...  
  
    </fieldset>  
  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        dt {  
            background-color: black;  
            font-weight: bold;  
            padding: 5px;  
            margin-bottom: 5px;  
            color:white;  
            position: sticky;  
            top: 0px;  
        }  
        dd {  
            background-color: lightgray;  
            padding: 5px;  
            margin-bottom: 5px;  
        }  
        dl {  
            display: grid;  
            grid-template-columns: 3fr 9fr;  
        }  
        fieldset {  
            border:2px solid black;  
            margin: 20px;  
            box-shadow: 4px 4px 2px gray;  
            width: 600px;  
        }  
        legend {  
            text-align: center;  
            background-color: black;  
            color:white;  
            font-size: 16px;  
            font-family: Arial;  
            padding: 5px;  
            width: 150px;  
            border-radius: 5px;  
            box-shadow: 2px 2px 2px gray;  
        }  
    </style>  
</head>  
<body>  
     <fieldset>  
        <legend>Personal Details</legend>  
        <dl>  
            <dt>First Name</dt>  
            <dd>some name</dd>  
            <dt>Last Name</dt>  
            <dd>some Name</dd>  
            <dt>Age</dt>  
            <dd>some age</dd>  
         </dl>  
     </fieldset>  
  
     <fieldset>  
        <legend>Address Details</legend>  
        <dl>  
            <dt>City</dt>  
            <dd>some city</dd>  
            <dt>State</dt>  
            <dd>some state</dd>  
            <dt>Postal</dt>  
            <dd>some code</dd>  
         </dl>  
     </fieldset>  
</body>  
</html>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        fieldset {  
            width: 50%;  
            text-align: center;  
            font-size: 12px;  
            border-left: none;  
            border-right: none;  
            border-bottom: none;  
            border-top: 1px solid gray;  
            display: flex;  
            justify-content: center;  
        }  
        legend {  
            padding-left: 10px;  
            padding-right: 10px;  
        }  
        .btn {  
            border : 1px solid black;  
            border-radius: 5px;  
            padding: 5px;  
            width: 60%;  
            margin-top: 10px;  
        }  
    </style>  
</head>  
<body>  
     <fieldset>  
         <legend>New to Amazon?</legend>  
         <div class="btn">  
            Create your Amazon acocunt  
         </div>  
     </fieldset>  
</body>  
</html>  
  
**14. Details and Summary**  
- Details is a container that allows to expand and collapse the content dynamically.  
- Summary is caption for details container.  
  
Syntax:  
    <details>  
  
        <summary> Title </summary>  
     
         …. your content ….  
  
    </details>  
             
- You can keep any details opened by default using "open" attribute.  
  
Syntax:  
    <details open>  
  
        <summary> Title </summary>  
  
    </details>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
</head>  
<body>  
    <h1>Frequently Asked Questions</h1>  
    <details open>  
          <summary>What is Netflix?</summary>  
          <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Deleniti cupiditate fugiat voluptatibus fugit voluptatum autem quibusdam tempora sit repudiandae eligendi at, labore magnam est porro accusamus, iste earum! Blanditiis, magnam? Lorem ipsum dolor sit, amet consectetur adipisicing elit. Aliquam assumenda debitis, nesciunt quod asperiores illum possimus eaque dolorum placeat provident optio vel veniam quasi veritatis adipisci natus corrupti, eius tempora?</p>  
          <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Deleniti cupiditate fugiat voluptatibus fugit voluptatum autem quibusdam tempora sit repudiandae eligendi at, labore magnam est porro accusamus, iste earum! Blanditiis, magnam? Lorem ipsum dolor sit, amet consectetur adipisicing elit. Aliquam assumenda debitis, nesciunt quod asperiores illum possimus eaque dolorum placeat provident optio vel veniam quasi veritatis adipisci natus corrupti, eius tempora?</p>  
    </details>  
    <details>  
         <summary>How much does Netflix cost?</summary>  
         <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Deleniti cupiditate fugiat voluptatibus fugit voluptatum autem quibusdam tempora sit repudiandae eligendi at, labore magnam est porro accusamus, iste earum! Blanditiis, magnam? Lorem ipsum dolor sit, amet consectetur adipisicing elit. Aliquam assumenda debitis, nesciunt quod asperiores illum possimus eaque dolorum placeat provident optio vel veniam quasi veritatis adipisci natus corrupti, eius tempora?</p>  
    </details>  
    <h1>Signin</h1>  
    <details>  
          <summary>Need Help?</summary>  
          <dl>  
             <dd>Forgot Password</dd>  
             <dd>Change Password</dd>  
          </dl>  
    </details>  
</body>  
</html>  
  
**15. Ordered and Unordered List**

**Ordered List**   
- Ordered list is auto numbering for a list.  
- Numbering updates automatically when you add or remove items.  
- <ol> is used for ordered list.  
- <li> is used for list item.  
  
Syntax:  
    <ol>  
        <li>HTML</li>                1. HTML  
        <li>CSS </li>                2. CSS  
    </ol>  
  
- You can change the numbering type by using  "type" attribute.  
  
Syntax:  
    <ol type="1, A, a, i, I">  
  
    </ol>  
  
- You can configure numbering from any level by using "start" attribute.  
- "start" refers to level number.  
  
Syntax:  
    <ol type="A"  start="5">  
    </ol>  
  
- HTML 5 supports new attribute "reversed", which is a reversed numbering style.  
  
Syntax:  
    <ol type="1"  reversed>  
    </ol>  
  
- You can create a nested list, but make sure that the child list is defined inside <li>  
  element.  
  
Syntax:  
    <ol>  
          <li> Parent  
             <ol>  
            <li> Child </li>  
             </ol>  
          </li>  
    </ol>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
</head>  
<body>  
    <ol type="1">  
        <li>HTML  
            <ol type="a">  
                <li>Normal Elements</li>  
                <li>Void Elements</li>  
            </ol>  
        </li>  
         
        <li>JavaScript  
            <ol type="a">  
                <li>Variables  
                    <ol type="i">  
                        <li>var</li>  
                        <li>let</li>  
                        <li>const</li>  
                    </ol>  
                </li>  
                <li>Operators</li>  
                <li>Statements</li>  
            </ol>  
        </li>  
         
    </ol>  
</body>  
</html>  
  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        .child-list {  
            margin-top: 20px;  
            columns: 2;  
        }  
        li {  
            margin-top: 10px;  
        }  
    </style>  
</head>  
<body>  
     <ol type="1">  
          <li>  
                &lt;br&gt is \_\_\_\_\_\_\_\_\_\_ element.  
                <ol type="a" class="child-list">  
                    <li>Void Element</li>  
                    <li>Normal Element</li>  
                    <li>RC Type</li>  
                    <li>Raw Text</li>  
                </ol>  
          </li>  
     </ol>  
</body>  
</html>

**Unordered List**

- It sets a bullet symbol of list item instead of numbering.  
- List is defined by using <ul>  
- Items are defined by using <li>  
- The type attribute can use values as  "circle, disc & square".  
  
Syntax:  
    <ul  type="circle">  
        <li> Item-1 </li>  
        <li> Item-2 </li>  
    </ul>  
  
**FAQ: How to set custom icon as bullet?**  
Ans:  You can use "list-style-image" attribute of CSS.  
                      (or)      
      You can apply bootstrap icons of <li> element.  
  
Ex:  
1. Open ms-paint and set Image properties : 30pixels size  
2. Draw and save image in into project by name  
            "bullet" [type as GIF]  
3. Set Image with CSS attribute  
  
        ul {  
            list-style : none;  
            list-style-image: url ("./images/bullet.gif");  
            font-size: 30px;  
        }  
  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        ul {  
            list-style: none;  
            list-style-image: url("images/star-bullet.gif");  
            font-size: 30px;  
        }  
    </style>  
</head>  
<body>  
     <ul>  
        <li>HTML</li>  
        <li>CSS</li>  
        <li>JavaScript</li>  
     </ul>  
</body>  
</html>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
        ul {  
            list-style: none;  
        }  
    </style>  
</head>  
<body>  
     <ul>  
        <li class="bi bi-person-circle"> <span>Profile</span> </li>  
        <li class="bi bi-gift"> <span>Rewards</span> </li>  
        <li class="bi bi-search"> <span>Search</span> </li>  
     </ul>  
</body>  
</html>  
  
**FAQ: Can we set numbering for <ul> and symbol for <ol>?**  
Ans:  Yes. By using CSS "list-style" attribute.  
  
Syntax:  
        ol {  
             list-style: disc;  
        }  
  
        ul {  
             list-style : lower-alpha;  
         }  
  
**FAQ: How to create scrollable list?**  
Ans:  By controlling height and overflow.  
  
Syntax:  
     ol {  
        height: 50px;  
        width: 200px;  
        overflow: auto;  
        border:1px solid gray;  
      }  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
       ol {  
          height: 50px;  
          border:1px solid gray;  
          padding: 10px;  
          overflow: auto;  
          list-style: none;  
          width: 200px;  
       }  
    </style>  
</head>  
<body>  
     <ol>  
        <li>HTML</li>  
        <li>CSS</li>  
        <li>JavaScript</li>  
        <li>HTML</li>  
        <li>CSS</li>  
        <li>JavaScript</li>  
        <li>HTML</li>  
        <li>CSS</li>  
        <li>JavaScript</li>  
     </ol>  
</body>  
</html>

**Images in HTML**

- Images are of various types in computing technologies.  
- Web will not support all types of images.  
- The image types popularly used for web are shown below  
  
Type        Description                         MIME             extension  
---------------------------------------------------------------------------------------------------------------------  
**APNG**    Animated Portable Network Graphics         image/apng         .apng  
  
**PNG**     Portable Network Graphics               image/png         .png  
  
**JPEG**     Joint Photographic Expert Group            image/jpeg         .jpg, .jpeg, .jfif  
  
**GIF**        Graphic Interchange Format                 image/gif            .gif  
  
**TIFF**        Tagged Image File Format                 image/tiff             .tiff  
  
**BMP**        Bitmap                                 image/bmp         .bmp  
  
**ICO**        Microsoft Icon                             image/ico             .ico  
  
**SVG**        Scalar Vector Graphics                   application/xml     .svg  
  
**Webp**    Web Picture                             application/webp     .webp  
  
  
  
**Note: "MIME" is  Multipurpose Internet Mail Extension.  
       Every MIME type have multiple extensions used for multiple purpose.**  
  
  
**PNG & APNG:**  
- They are HD images.  
- They have more pixel depth.  
- They occupy more memory.  
- Always use PNG and APNG for downloadable images.  
  
**JPEG**:  
- They are HD images.  
- Less pixel depth than PNG  
- They are compressed images.  
- Occupy less memory when compared to PNG.  
- Good for on screen presentation.  
  
**GIF**:  
- They are images with 256 colors.  
- Not HD images.  
- But can be animated.  
- Memory is same as PNG.  
- Good for transporting via network.  
- Good for bullets, buttons, logos etc.  
  
**TIFF**:  
- It is sliced image format.  
- It is HD  
- It occupies more memory.  
- It is good for scanned documents.  
  
**BMP**  
- It is binary format of image.  
- It is HD  
- It is good for storing in binary format. [database]  
- It is good for transport.  
- It is heavy.  
- Firewalls block BMP.  
  
**SVG**  
- It is not pixel based.  
- It is vector based image.  
- It is designed using XML as language.  
- XML is Extensible Markup Language.  
- It is good for architectural diagrams, icons, maps etc.  
  
  
**Webp**  
- It is web picture.  
- It an image embedded into page.  
- It will not allow to separate image from page.  
- You can't save or download images from webp.

**HTML  Image Element**

- HTML provides <img> for images. It can embed image into page.  
- If you want images SEO friendly then you can keep in <figure> element with <figcaption>.  
  
Syntax:  
        <figure>  
            <img>  
            <figcaption> Caption </figcaption>  
        </figure>  
  
**Attributes:**  
  
    **1. src**        : It refers to the resource path and name. [image path]  
  
**2. alt**         : It defines alternative text to display when image fails to load.  
  
    **3. width/height**     : It sets width and height for image.  
  
    **4. title**         : It defines the tool tip to display when mouse is over.  
  
**5. border**         : It sets border for image.  
  
**6. align**        : It can align image left or right. It is used for wrapping text around  
                  image.  
  
**7. hspace**    : It sets horizontal space between image and text.  
  
**8. vspace**        : It sets vertical space between image and image.  
  
Syntax:  
  <img src="./images/pic.jpg" width="100" height="200" alt="alternative text"  title="Tooltip to display"  border="1" align="left" hspace="20" vspace="20">  
  
**FAQ: How to design fluid-images?**  
Ans:  By configuring the size in "%".  
     
    <img src="./images/pic.jpg"  width="50%" height="50%">  
  
**Cards Design with images:**  
  
Ex1: NareshIT Cards  
  
  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>NareshIT</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
  
        section {  
            display: flex;  
            flex-direction: row;  
        }  
  
        .card {  
            width: 250px;  
            margin: 20px;  
            border-radius: 10px;  
            border:1px solid black;  
            box-shadow: 5px 5px 2px gray;  
        }  
        .card-img {  
            width: 100%;  
            border-top-right-radius: 10px;  
            border-top-left-radius: 10px;  
        }  
        .card-header {  
            text-align: center;  
            padding: 10px;  
        }  
        .card-title {  
            font-size: 20px;  
            font-family: Arial;  
            font-weight: bold;  
            height: 50px;  
        }  
        .ratings {  
            color:goldenrod;  
        }  
        .card-body {  
            padding: 10px;  
            font-family: Arial;  
        }  
        dl {  
            display: grid;  
            grid-template-columns: 4fr 8fr;  
        }  
        dt {  
            font-size: 12px;  
            font-weight: bold;  
            margin-bottom: 20px;  
        }  
        dd {  
            font-size: 12px;  
            margin-bottom: 20px;  
        }  
        .card-footer {  
            display: grid;  
            grid-template-columns: 6fr 6fr;  
             
        }  
        .enroll {  
            background-color: blue;  
            color:white;  
            border-bottom-left-radius: 10px;  
            font-size: 20px;  
            font-family: Arial;  
            text-align: center;  
            padding: 10px;  
        }  
        .share {  
            background-color: whitesmoke;  
            color:black;  
            border-bottom-right-radius: 10px;  
            font-size: 20px;  
            font-family: Arial;  
            text-align: center;  
            padding: 10px;  
        }  
    </style>  
</head>  
<body>  
    <section>  
        <div class="card">  
            <img src="./images/ds.png" class="card-img">  
            <div class="card-header">  
                <div class="card-title"> FullStack Data Science & AI </div>  
                <div class="ratings">  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                </div>  
            </div>  
            <div class="card-body">  
                <dl>  
                    <dt class="bi bi-calendar-date"> Start Date </dt>  
                    <dd> 12 Aug 2024 </dd>  
                    <dt> By </dt>  
                    <dd class="bi bi-person"> Mr. Daniel </dd>  
                    <dt class="bi bi-clock"> Dur </dt>  
                    <dd> 4 months </dd>  
                </dl>  
            </div>  
            <div class="card-footer">  
                 <div class="enroll">Enroll</div>  
                 <div class="share"> <span class="bi bi-share"></span> Share </div>  
            </div>  
        </div>  
  
  
        <div class="card">  
            <img src="./images/testing.png" class="card-img">  
            <div class="card-header">  
                <div class="card-title"> FullStack Testing </div>  
                <div class="ratings">  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                </div>  
            </div>  
            <div class="card-body">  
                <dl>  
                    <dt class="bi bi-calendar-date"> Start Date </dt>  
                    <dd> 12 Aug 2024 </dd>  
                    <dt> By </dt>  
                    <dd class="bi bi-person"> Mr. Daniel </dd>  
                    <dt class="bi bi-clock"> Dur </dt>  
                    <dd> 4 months </dd>  
                </dl>  
            </div>  
            <div class="card-footer">  
                 <div class="enroll">Enroll</div>  
                 <div class="share"> <span class="bi bi-share"></span> Share </div>  
            </div>  
        </div>  
  
  
        <div class="card">  
            <img src="./images/java.png" class="card-img">  
            <div class="card-header">  
                <div class="card-title"> FullStack Java </div>  
                <div class="ratings">  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                </div>  
            </div>  
            <div class="card-body">  
                <dl>  
                    <dt class="bi bi-calendar-date"> Start Date </dt>  
                    <dd> 12 Aug 2024 </dd>  
                    <dt> By </dt>  
                    <dd class="bi bi-person"> Mr. Daniel </dd>  
                    <dt class="bi bi-clock"> Dur </dt>  
                    <dd> 4 months </dd>  
                </dl>  
            </div>  
            <div class="card-footer">  
                 <div class="enroll">Enroll</div>  
                 <div class="share"> <span class="bi bi-share"></span> Share </div>  
            </div>  
        </div>  
  
        <div class="card">  
            <img src="./images/django.png" class="card-img">  
            <div class="card-header">  
                <div class="card-title"> Django with API </div>  
                <div class="ratings">  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                    <span class="bi bi-star-fill"></span>  
                </div>  
            </div>  
            <div class="card-body">  
                <dl>  
                    <dt class="bi bi-calendar-date"> Start Date </dt>  
                    <dd> 12 Aug 2024 </dd>  
                    <dt> By </dt>  
                    <dd class="bi bi-person"> Mr. Daniel </dd>  
                    <dt class="bi bi-clock"> Dur </dt>  
                    <dd> 4 months </dd>  
                </dl>  
            </div>  
            <div class="card-footer">  
                 <div class="enroll">Enroll</div>  
                 <div class="share"> <span class="bi bi-share"></span> Share </div>  
            </div>  
        </div>  
    </section>  
</body>  
</html>  
  
Ex2: Amazon Cards  
  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Amazon Cards</title>  
    <style>  
        section {  
            display: grid;  
            grid-template-columns: 3fr 3fr 3fr 3fr;  
            margin-top: -250px;  
        }  
        .card {  
            padding: 5px;  
            margin: 10px;  
            height: 400px;  
            background-color: white;  
            font-family: Arial;  
            box-shadow: 2px 2px 2px gray;  
        }  
        .row {  
            display: grid;  
            grid-template-columns: 6fr 6fr;  
            grid-gap: 5px;  
            margin-bottom: 20px;  
            font-size: 12px;  
        }  
        .card-body {  
            padding: 5px;  
            height: 300px;  
        }  
        .card-header {  
            height: 50px;  
        }  
        .card-title {  
            font-family: Arial;  
            font-size: 20px;  
            font-weight: bold;  
        }  
        .footer-link {  
            color:blue;  
            text-align: center;  
        }  
    </style>  
</head>  
<body>  
    <header>  
        <img src="./images/amazon-banner.jpg" width="100%">  
    </header>  
    <section>  
        <div class="card">  
            <div class="card-header">  
                <div class="card-title">Starting ₹149 | Headphones</div>  
            </div>  
            <div class="card-body">  
                <div class="row">  
                    <div>  
                        <img src="./images/a1.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                    <div>  
                        <img src="./images/a2.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                </div>  
                <div class="row">  
                    <div>  
                        <img src="./images/a3.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                    <div>  
                        <img src="./images/a4.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                </div>  
            </div>  
            <div class="card-footer">  
                <div class="footer-link">See all offers</div>  
            </div>  
        </div>  
        <div class="card">  
            <div class="card-header">  
                <div class="card-title">Starting ₹149 | Headphones</div>  
            </div>  
            <div class="card-body">  
                <div class="row">  
                    <div>  
                        <img src="./images/a5.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                    <div>  
                        <img src="./images/a6.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                </div>  
                <div class="row">  
                    <div>  
                        <img src="./images/a7.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                    <div>  
                        <img src="./images/a8.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                </div>  
            </div>  
            <div class="card-footer">  
                <div class="footer-link">See all offers</div>  
            </div>  
        </div>  
        <div class="card">  
            <div class="card-header">  
                <div class="card-title">Starting ₹149 | Headphones</div>  
            </div>  
            <div class="card-body">  
                <div class="row">  
                    <div>  
                        <img src="./images/a9.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                    <div>  
                        <img src="./images/a10.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                </div>  
                <div class="row">  
                    <div>  
                        <img src="./images/a11.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                    <div>  
                        <img src="./images/a12.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                </div>  
            </div>  
            <div class="card-footer">  
                <div class="footer-link">See all offers</div>  
            </div>  
        </div>  
        <div class="card">  
            <div class="card-header">  
                <div class="card-title">Starting ₹149 | Headphones</div>  
            </div>  
            <div class="card-body">  
                <div class="row">  
                    <div>  
                        <img src="./images/a13.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                    <div>  
                        <img src="./images/a14.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                </div>  
                <div class="row">  
                    <div>  
                        <img src="./images/a15.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>   
                    <div>  
                        <img src="./images/a16.jpg" width="100%">  
                        <p>Starting ₹249 | boAt</p>  
                    </div>  
                </div>  
            </div>  
            <div class="card-footer">  
                <div class="footer-link">See all offers</div>  
            </div>  
        </div>  
    </section>  
</body>  
</html>

**Hyperlinks in HTML**

- Hyper means "Beyond".  
- A hyperlink is clickable text, picture or graphic that navigates the user from one location to another.  
- Hyperlinks are created by using anchor element "<a>".  
- Hyperlinks are categorized into 2 types  
    a) Intra Document Links  
    b) Inter Document Links  
  
**Intra Document Links:**  
- An intra document link navigates user from one location to another within the same page.  
- The target element must have an "ID".  
  
        <h1  id="top">  
        <img  id="pic">  
        <div id="details">  
  
- Anchor element <a> uses "href" as attribute to refer the ID.  
  
        <a href="#top"> Text  | Image .. </a>  
        <a href="#pic">  
        <a href="#details">  
  
**FAQ: What is difference between "src" & "href"?**  
Ans:  "src" is a getter, which is used to get the path of resource and use in page.  
      "href" is a setter, which is used to set path for the resource.  
  
Syntax:  
        <a href="#top">    => It sets  "#top" in the address bar by appending to URL.  
  
Ex: Intra Document Links  
  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Shopping</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
        header {  
            background-color: black;  
            color:white;  
            display: flex;  
            justify-content: space-between;  
            padding: 15px;  
            font-family: Arial;  
            font-size: 20px;  
        }  
        .title {  
            font-weight: bold;  
        }  
        header span {  
            margin-right: 20px;  
        }  
        section {  
            display: grid;  
            grid-template-columns: 3fr 9fr;  
        }  
        main {  
            height: 400px;  
            overflow: auto;  
        }  
        ul {  
            list-style: none;  
            margin-left: -20px;  
        }  
        li {  
            font-size: 20px;  
            font-family: Arial;  
            margin-bottom: 20px;  
            width: 150px;  
            background-color: black;  
            color:white;  
            padding: 5px;  
            text-align: left;  
            border-radius: 10px;  
        }  
        nav a {  
            color:white;  
            text-decoration: none;  
        }  
        pre {  
            background-color: lightgray;  
            padding: 10px;  
        }  
        a img {  
            border-radius: 100px;  
        }  
        li:hover {  
            background-color: red;  
        }  
    </style>  
</head>  
<body>  
    <header>  
        <div class="title">Shopper.</div>  
        <div>  
            <span><a href="#women"><img src="./images/women-fashion.jpg" width="100" height="100"></a></span>  
            <span><a href="#men"><img src="./images/men-fashion.jpg" width="100" height="100"></a></span>  
            <span><a href="#kids"><img src="./images/kids-fashion.jpg" width="100" height="100"></a></span>  
        </div>  
        <div>  
            <span class="bi bi-person-fill"></span>  
            <span class="bi bi-heart"></span>  
            <span class="bi bi-cart2"></span>  
        </div>  
    </header>  
    <section>  
        <nav>  
            <ul>  
                <li><a href="#home">Home</a></li>  
                <li><a href="#women">Women Fashion</a></li>  
                <li><a href="#men">Men Fashion</a></li>  
                <li><a href="#kids">Kids Fashion</a></li>  
            </ul>  
        </nav>  
        <main>  
            <h3 id="home">Home</h3>  
            <p>Lorem ipsum dolor sit, <span><b><a href="#offers">View Offers</a></b></span> amet consectetur adipisicing elit. Consequatur repellat excepturi praesentium est quae eos, corrupti asperiores amet sapiente error atque culpa iure assumenda tempore ullam inventore et sunt deserunt. Lorem ipsum dolor sit, amet consectetur adipisicing elit. Tempore dolores quam laudantium, repudiandae blanditiis et voluptatem aspernatur recusandae, deserunt possimus soluta dolore ducimus. Consequuntur vero natus omnis, nihil alias temporibus? Lorem ipsum dolor sit amet, consectetur adipisicing elit. Labore ea, saepe nam laborum magnam corporis accusamus voluptatibus consequatur molestiae, quos officia libero, cum eos aspernatur harum repudiandae tempore eligendi repellat?</p>  
            <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. Consequatur repellat excepturi praesentium est quae eos, corrupti asperiores amet sapiente error atque culpa iure assumenda tempore ullam inventore et sunt deserunt. Lorem ipsum dolor sit, amet consectetur adipisicing elit. Tempore dolores quam laudantium, repudiandae blanditiis et voluptatem aspernatur recusandae, deserunt possimus soluta dolore ducimus. Consequuntur vero natus omnis, nihil alias temporibus? Lorem ipsum dolor sit amet, consectetur adipisicing elit. Labore ea, saepe nam laborum magnam corporis accusamus voluptatibus consequatur molestiae, quos officia libero, cum eos aspernatur harum repudiandae tempore eligendi repellat?</p>  
            <h3 id="women">Women Fashion</h3>      
            <img src="./images/women-fashion.jpg" width="200" height="200">      
            <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. Consequatur repellat excepturi praesentium est quae eos, corrupti asperiores amet sapiente error atque culpa iure assumenda tempore ullam inventore et sunt deserunt. Lorem ipsum dolor sit, amet consectetur adipisicing elit. Tempore dolores quam laudantium, repudiandae blanditiis et voluptatem aspernatur recusandae, deserunt possimus soluta dolore ducimus. Consequuntur vero natus omnis, nihil alias temporibus? Lorem ipsum dolor sit amet, consectetur adipisicing elit. Labore ea, saepe nam laborum magnam corporis accusamus voluptatibus consequatur molestiae, quos officia libero, cum eos aspernatur harum repudiandae tempore eligendi repellat?</p>  
            <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. Consequatur repellat excepturi praesentium est quae eos, corrupti asperiores amet sapiente error atque culpa iure assumenda tempore ullam inventore et sunt deserunt. Lorem ipsum dolor sit, amet consectetur adipisicing elit. Tempore dolores quam laudantium, repudiandae blanditiis et voluptatem aspernatur recusandae, deserunt possimus soluta dolore ducimus. Consequuntur vero natus omnis, nihil alias temporibus? Lorem ipsum dolor sit amet, consectetur adipisicing elit. Labore ea, saepe nam laborum magnam corporis accusamus voluptatibus consequatur molestiae, quos officia libero, cum eos aspernatur harum repudiandae tempore eligendi repellat?</p>  
            <h3 id="men">Men's Fashion</h3>  
            <img src="./images/men-fashion.jpg" width="200" height="200">  
            <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. Consequatur repellat excepturi praesentium est quae eos, corrupti asperiores amet sapiente error atque culpa iure assumenda tempore ullam inventore et sunt deserunt. Lorem ipsum dolor sit, amet consectetur adipisicing elit. Tempore dolores quam laudantium, repudiandae blanditiis et voluptatem aspernatur recusandae, deserunt possimus soluta dolore ducimus. Consequuntur vero natus omnis, nihil alias temporibus? Lorem ipsum dolor sit amet, consectetur adipisicing elit. Labore ea, saepe nam laborum magnam corporis accusamus voluptatibus consequatur molestiae, quos officia libero, cum eos aspernatur harum repudiandae tempore eligendi repellat?</p>  
            <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. Consequatur repellat excepturi praesentium est quae eos, corrupti asperiores amet sapiente error atque culpa iure assumenda tempore ullam inventore et sunt deserunt. Lorem ipsum dolor sit, amet consectetur adipisicing elit. Tempore dolores quam laudantium, repudiandae blanditiis et voluptatem aspernatur recusandae, deserunt possimus soluta dolore ducimus. Consequuntur vero natus omnis, nihil alias temporibus? Lorem ipsum dolor sit amet, consectetur adipisicing elit. Labore ea, saepe nam laborum magnam corporis accusamus voluptatibus consequatur molestiae, quos officia libero, cum eos aspernatur harum repudiandae tempore eligendi repellat?</p>  
            <div id="offers">  
                <pre>  
                    40% OFF         Electronics  
                    10% OFF         Men's Clothing  
                    15% OFF         Kids Fashion  
                </pre>  
            </div>  
            <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. Consequatur repellat excepturi praesentium est quae eos, corrupti asperiores amet sapiente error atque culpa iure assumenda tempore ullam inventore et sunt deserunt. Lorem ipsum dolor sit, amet consectetur adipisicing elit. Tempore dolores quam laudantium, repudiandae blanditiis et voluptatem aspernatur recusandae, deserunt possimus soluta dolore ducimus. Consequuntur vero natus omnis, nihil alias temporibus? Lorem ipsum dolor sit amet, consectetur adipisicing elit. Labore ea, saepe nam laborum magnam corporis accusamus voluptatibus consequatur molestiae, quos officia libero, cum eos aspernatur harum repudiandae tempore eligendi repellat?</p>  
            <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. Consequatur repellat excepturi praesentium est quae eos, corrupti asperiores amet sapiente error atque culpa iure assumenda tempore ullam inventore et sunt deserunt. Lorem ipsum dolor sit, amet consectetur adipisicing elit. Tempore dolores quam laudantium, repudiandae blanditiis et voluptatem aspernatur recusandae, deserunt possimus soluta dolore ducimus. Consequuntur vero natus omnis, nihil alias temporibus? Lorem ipsum dolor sit amet, consectetur adipisicing elit. Labore ea, saepe nam laborum magnam corporis accusamus voluptatibus consequatur molestiae, quos officia libero, cum eos aspernatur harum repudiandae tempore eligendi repellat?</p>  
            <h3 id="kids">Kids Fashion</h3>  
            <img src="./images/kids-fashion.jpg" width="200" height="200">  
            <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. Consequatur repellat excepturi praesentium est quae eos, corrupti asperiores amet sapiente error atque culpa iure assumenda tempore ullam inventore et sunt deserunt. Lorem ipsum dolor sit, amet consectetur adipisicing elit. Tempore dolores quam laudantium, repudiandae blanditiis et voluptatem aspernatur recusandae, deserunt possimus soluta dolore ducimus. Consequuntur vero natus omnis, nihil alias temporibus? Lorem ipsum dolor sit amet, consectetur adipisicing elit. Labore ea, saepe nam laborum magnam corporis accusamus voluptatibus consequatur molestiae, quos officia libero, cum eos aspernatur harum repudiandae tempore eligendi repellat?</p>  
            <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. Consequatur repellat excepturi praesentium est quae eos, corrupti asperiores amet sapiente error atque culpa iure assumenda tempore ullam inventore et sunt deserunt. Lorem ipsum dolor sit, amet consectetur adipisicing elit. Tempore dolores quam laudantium, repudiandae blanditiis et voluptatem aspernatur recusandae, deserunt possimus soluta dolore ducimus. Consequuntur vero natus omnis, nihil alias temporibus? Lorem ipsum dolor sit amet, consectetur adipisicing elit. Labore ea, saepe nam laborum magnam corporis accusamus voluptatibus consequatur molestiae, quos officia libero, cum eos aspernatur harum repudiandae tempore eligendi repellat?</p>  
        </main>  
    </section>  
</body>  
</html>  
  
Note: HTML can scroll your page only if it have content overflowing the container.  
      Intra document links can use ":target" class to highlight any content without  
      scrolling to the content.  
  
Syntax:  
       <div class="card"  id="topic1">  </div>  
  
       .card {  
             background-color:black;  
       }  
     
       .card:target {  
             background-color:yellow;  
       }  
  
       <a href="#topic1"> Topic-1 </a>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Spotify</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
        nav {  
            background-color: black;  
            display: flex;  
            justify-content: center;  
            padding: 20px;  
        }  
        .card {  
            display: grid;  
            grid-template-columns: 6fr 6fr;  
            width: 100px;  
            padding: 10px;  
            border: 1px solid black;  
            border-radius: 5px;  
            margin: 10px;  
            font-size: 15px;  
            font-family: Arial;  
        }  
        .artist {  
            display: flex;  
            border:1px groove black;  
            padding: 10px;  
            margin-bottom: 20px;  
            margin-top: 20px;  
        }  
        .artist:target {  
            background-color: black;  
            color:white;  
        }  
        .card:target {  
            background-color: yellow;  
            color:black;  
        }  
        nav a {  
            color:white;  
            text-decoration: none;  
        }  
    </style>  
</head>  
<body>  
    <nav>  
        <div>  
            <a href="#artist1"> <img src="./images/artist1.jpg" width="100" height="100"> </a>  
        </div>  
        <div>  
            <a href="#artist2"> <img src="./images/artist2.jpg" width="100" height="100"> </a>  
        </div>  
        <div>  
            <a href="#artist3"> <img src="./images/artist3.jpg" width="100" height="100"> </a>  
        </div>  
        <div>  
            <ul>  
                <li><a href="#song1">Song-1</a></li>  
                <li><a href="#song2">Song-2</a></li>  
                <li><a href="#song3">Song-3</a></li>  
                <li><a href="#song4">Song-4</a></li>  
            </ul>  
        </div>  
    </nav>  
    <section>  
        <div id="artist1" class="artist">  
            <h3>Artist-1</h3>  
            <div class="card" id="song1">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-1</span>  
                </div>  
            </div>  
            <div class="card" id="song2">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-2</span>  
                </div>  
            </div>  
            <div class="card" id="song3">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-3</span>  
                </div>  
            </div>  
            <div class="card" id="song4">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-4</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-5</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-6</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-7</span>  
                </div>  
            </div>  
        </div>  
  
        <div id="artist2" class="artist">  
            <h3>Artist-2</h3>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-1</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-2</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-3</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-4</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-5</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-6</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-7</span>  
                </div>  
            </div>  
        </div>  
  
  
        <div id="artist3" class="artist">  
            <h3>Artist-3</h3>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-1</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-2</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-3</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-4</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-5</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-6</span>  
                </div>  
            </div>  
            <div class="card">  
                <div>  
                    <span class="bi bi-play-circle"></span>  
                    <span class="bi bi-pause-circle"></span>  
                </div>  
                <div>  
                    <span>Song-7</span>  
                </div>  
            </div>  
        </div>  
    </section>  
</body>  
</html>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        .card {  
            border:1px solid black;  
            padding: 20px;  
            width: 200px;  
            margin: 20px;  
        }  
        section {  
            display: flex;  
        }  
        .card:target {  
            background-color: black;  
            color:white;  
            border-radius: 200px;  
            font-size: 20px;  
            font-family: Arial;  
            text-align: center;  
        }  
    </style>  
</head>  
<body>  
    <nav>  
        <a href="#html">HTML</a> |  
        <a href="#css">CSS</a> |  
        <a href="#js">JavaScript</a>  
    </nav>  
    <section>  
        <div class="card" id="html">  
            <h2>HTML</h2>  
            <p>It is markup language</p>  
        </div>  
        <div class="card" id="css">  
            <h2>CSS</h2>  
            <p>It configure styles</p>  
        </div>  
        <div class="card" id="js">  
            <h2>JavaScript</h2>  
            <p>It manipulates DOM</p>  
        </div>  
    </section>  
</body>  
</html>

**Inter Document Navigation [Links]:**

- Inter document navigation allows redirection to any  
    a) Page  
    b) URL  
    c) File  
    d) Application  
  
- Link Page  
    <a href="./shopper-template.html">  Shopper </a>  
  
- Link File  
    <a href="./images/women-fashion.jpg"> Women </a>  
    <a href="./docs/file.pdf">  Tutorial </a>  
  
FAQ: What type of files we can link?  
Ans:  You can link any type of file.  
  
FAQ: Can we open every file and view its content in browser?  
Ans: No. It depends on the plugin's. If relative plugin is not installed then the linked  
     document / file will download.  
  
FAQ: How to configure a link that always download the file?  
Ans:  HTML 5 provides "download" attribute for <a> anchor element, which downloads  
     the linked file without opening in browser.  
  
Syntax:  
    <a href="./images/kids-fashion.jpg" download="DSC00045">  
         
        Kids Fashion [Download]  
  
    </a>  
  
- Link URL  
    <a href="https://www.amazon.in"&gt; Amazon </a>  
    <a href="[https://wa.me/+919876543210"&gt](https://wa.me/+919876543210%22&gt);  Message +919876543210 </a>  
  
- Link Application  
    a) mail  
        <a href="[email@gmail.com](https://mail.google.com/mail/?view=cm&fs=1&to=email%40gmail.com&authuser=0)"> Email </a>  
    b) phone  
        <a href="tel:+919876543210">  Call </a>  
    c) skype  
        <a href="skype:[info@outlook.com](https://mail.google.com/mail/?view=cm&fs=1&to=info%40outlook.com&authuser=0)"> Skype </a>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
</head>  
<body>  
    <ol>  
        <li><a href="./shopper-template.html">Shopper Template</a></li>  
        <li><a href="./images/women-fashion.jpg">Women Fashion</a></li>  
        <li><a href="./images/kids-fashion.jpg" download="DSC00045"> Kids Fashion [Download] </a></li>  
        <li><a href="./docs/kerala-tourism.pdf">Kerala Tourism</a></li>  
        <li><a href="./docs/Bootstrap Tutorial.docx">Bootstrap Tutorial</a></li>  
        <li><a href="[https://wa.me/+919876543210"&gt](https://wa.me/+919876543210%22&gt); +919876543210 <span class="bi bi-messenger"> Message </span> </a></li>  
        <li> <a href="<https://www.instagram.com/nareshit&quot>; class="bi bi-instagram"> Naresh IT Instagram </a> </li>  
        <li> Call <a href="tel:+919876543210">  +919876543210 </a> </li>  
        <li> Mail <a href="[info@nareshit.in](https://mail.google.com/mail/?view=cm&fs=1&to=info%40nareshit.in&authuser=0)">  [info@nareshit.in](https://mail.google.com/mail/?view=cm&fs=1&to=info%40nareshit.in&authuser=0) </a> </li>  
        <li> Skype <a href="skype:[nareshit@outlook.com](https://mail.google.com/mail/?view=cm&fs=1&to=nareshit%40outlook.com&authuser=0)"> NareshIT <span class="bi bi-skype"></span> </a></li>  
    </ol>  
</body>  
</html>  
  
FAQ's:  
1. How to open linked document in a new tab?  
A.

- Intra Document  
- Inter Document  
**FAQ's:**  
1. How to change the color of visited links?  
A. By using the body element attribute "vlink".  
    You can change color of active link by using "alink".  
                  (or)  
     You can change link colors with CSS classes  
        a : active { }  
        a : visited { }  
         
2. How to remove underline for hyperlink?  
A. By using "text-decoration" set to "none"  
  
    a {  
        text-decoration: none;  
    }  
  
Ex:  
<style>  
        a:visited {  
            color:gray;  
        }  
        a:active {  
            color:red;  
        }  
        a{  
            text-decoration: none;  
        }  
        a:hover {  
            text-decoration: underline;  
        }  
    </style>  
  
3. How to open link target in a new tab?  
A. by setting the "target" attribute to "\_blank".  
  
Syntax:  
    <a href="./images/pic.jpg"  target="\_blank">  
  
4. How to open link target in a new window?  
A. By using "JavaScript"  open() method of window object.  
  
Syntax:  
    window.open("path", "title", "window features");  
  
    <a href="javascript:window.open()">  </a>  
  
Ex:  
<a href="javascript:window.open('./images/men-fashion.jpg', 'Men', 'width=300 height=400')"> Mens Fashion </a>  
  
5. How to open link target in the same tab and in the same page along with existing content?  
A. By using HTML <iframe> element.  
     Iframe is HTML 5 element used to embed any content into the page.  
  
Syntax:  
    <iframe  src="path"  width="" height=""  name=""> </iframe>  
  
Ex:  
    <a href="./images/pic.jpg"  target="frameBody">  Pic </a>  
  
    <iframe  name="frameBody"> </iframe>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
        a:visited {  
            color:gray;  
        }  
        a:active {  
            color:red;  
        }  
        a{  
            text-decoration: none;  
        }  
        a:hover {  
            text-decoration: underline;  
        }  
        body {  
            display: grid;  
            grid-template-columns: 3fr 9fr;  
        }  
        iframe {  
            width: 100%;  
            height: 450px;  
            border:none;  
        }  
    </style>  
</head>  
<body>  
   <nav>  
    <ol>  
        <li><a href="./shopper-template.html" target="\_blank">Shopper Template</a></li>  
        <li><a href="./images/artist3.jpg" target="frameBody"> AR Rehman </a></li>  
        <li><a href="./images/women-fashion.jpg" target="\_blank">Women Fashion</a></li>  
        <li><a href="javascript:window.open('./images/men-fashion.jpg', 'Men', 'width=300 height=400')"> Mens Fashion </a></li>  
        <li><a href="./images/kids-fashion.jpg" download="DSC00045"> Kids Fashion [Download] </a></li>  
        <li><a href="./docs/kerala-tourism.pdf" target="frameBody">Kerala Tourism</a></li>  
        <li><a href="./docs/Bootstrap Tutorial.docx">Bootstrap Tutorial</a></li>  
        <li><a href="[https://wa.me/+919876543210"&gt](https://wa.me/+919876543210%22&gt); +919876543210 <span class="bi bi-messenger"> Message </span> </a></li>  
        <li> <a href="<https://www.instagram.com/nareshit&quot>; class="bi bi-instagram"> Naresh IT Instagram </a> </li>  
        <li> Call <a href="tel:+919876543210">  +919876543210 </a> </li>  
        <li> Mail <a href="[info@nareshit.in](https://mail.google.com/mail/?view=cm&fs=1&to=info%40nareshit.in&authuser=0)">  [info@nareshit.in](https://mail.google.com/mail/?view=cm&fs=1&to=info%40nareshit.in&authuser=0) </a> </li>  
        <li> Skype <a href="skype:[nareshit@outlook.com](https://mail.google.com/mail/?view=cm&fs=1&to=nareshit%40outlook.com&authuser=0)"> NareshIT <span class="bi bi-skype"></span> </a></li>  
        <li> <a href="javascript:window.print()" class="bi bi-printer-fill"> Print Page </a> </li>  
        <li> <a href="<https://www.youtube.com/embed/mAkEwgfLoY8&quot>; target="frameBody"> Oracle Tips </a></li>  
    </ol>  
   </nav>  
   <main>  
      <iframe name="frameBody"></iframe>  
   </main>  
</body>  
</html>  
  
Note: HTML 4 uses <frameset> with <frame> to embed any content. However the modern compact browser will not recommend <frameset>.  
  
1. HTML page that uses <frameset> can't have body section.  
  
2. <frameset> will have collection of <frame> elements.  
  
3. <frameset> can span the frames in rows or columns.  
  
4. <frame> can't display any content directly, it requires external resource "src".  
  
Syntax:  
    <html>  
      <head> <title> Frame </title> </head>  
      <frameset rows="20%, 60%, 20%">  
        <frame src=""> </frame>  
        <frame src="page.html"> </frame>  
        <frame src=""> </frame>  
      </frameset>  
    </html>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>IFrame</title>  
    <style>  
        body {  
            display: grid;  
            grid-template-columns: 3fr 9fr;  
        }  
        iframe {  
            border:none;  
        }  
        ul {  
            list-style:none;  
            margin-left: -40px;  
        }  
        li {  
            background-color: black;  
            color:white;  
            padding: 5px;  
            width: 140px;  
            margin-bottom: 20px;  
            font-family: Arial;  
            font-size: 20px;  
        }  
        a {  
            color:white;  
            text-decoration: none;  
        }  
    </style>  
</head>  
<body>  
    <nav>  
        <ul>  
            <h3>Templates</h3>  
            <li> <a href="./shopper-template.html" target="preview">Shopper</a> </li>  
            <li> <a href="./netflix.html" target="preview">Netflix</a> </li>  
            <li> <a href="./landkit.html" target="preview">Landkit</a></li>  
            <h3>Books</h3>  
            <li> <a href="./docs/kerala-tourism.pdf" target="preview">Tourism</a> </li>  
            <li> <a href="./docs/ArrayProblems.pdf" target="preview">C# Arrays</a> </li>  
            <li> <a href="./docs/shopping-online.pdf" target="preview">Shopping Project</a> </li>  
            <h3>Videos</h3>  
            <li> <a href="<https://www.youtube.com/embed/mAkEwgfLoY8&quot>; target="preview"> Oracle </a> </li>  
        </ul>  
    </nav>  
    <section>  
        <iframe name="preview" width="100%" height="500">  
  
        </iframe>  
    </section>  
</body>  
</html>

Ex: YouTube  
  
  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Youtube</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
        header {  
            display: flex;  
            justify-content: space-between;  
            padding: 10px;  
            font-family: Arial;  
        }  
        .bi-justify {  
            font-size: 30px;  
        }  
        .search-bar {  
            width: 400px;  
            border:1px solid gray;  
            padding: 7px;  
            font-size: 16px;  
            display: inline-flex;  
            justify-content: space-between;  
            border-radius: 20px;  
        }  
        .bi-mic-fill {  
            background-color: lightgray;  
            padding: 5px;  
            border-radius: 50%;  
            margin-left: 20px;  
        }  
        .bi-person-circle {  
            border: 1px solid blue;  
            padding: 5px;  
            color:blue;  
            border-radius: 15px;  
        }  
        .bi-three-dots-vertical {  
            font-size: 20px;  
            margin-right: 20px;  
        }  
        section {  
            display: grid;  
            grid-template-columns: 1fr 11fr;  
            margin-top: 20px;  
        }  
        .nav-item {  
            text-align: center;  
            margin-left: -40px;  
            margin-bottom: 40px;  
        }  
        .nav-title {  
            font-size: 12px;  
            font-family: Arial;  
        }  
        .banner-image {  
            border-radius: 30px;  
        }  
        article {  
            display: grid;  
            grid-template-columns: 2fr 10fr;  
            margin-top: 20px;  
            font-family: Arial;  
        }  
        .article-title {  
            font-weight: bold;  
            font-size: 25px;  
            margin-bottom: 10px;  
            margin-top: 10px;  
        }  
        .article-subtitle {  
            color:gray;  
            margin-bottom: 10px;  
        }  
        .article-summary {  
            padding-top: 20px;  
            padding-bottom: 10px;  
            width: 460px;  
            overflow: hidden;  
            white-space: nowrap;  
            text-overflow: ellipsis;  
        }  
        .bi-bell-fill {  
            margin-top: 20px;  
            display: block;  
            background-color: black;  
            color:white;  
            padding: 5px;  
            width: 100px;  
            border-radius: 20px;  
        }  
        main {  
            height: 500px;  
            overflow: auto;  
        }  
        .nav-tabs {  
            font-family: Arial;  
            font-weight: bold;  
            color:gray;  
            margin-top: 40px;  
            border-bottom: 1px solid lightgray;  
            padding-bottom: 10px;  
        }  
        .nav-tabs span {  
            margin-right: 50px;  
        }  
        .nav-tabs span:first-child {  
            color:black;  
        }  
        .channel-highlights {  
            display: grid;  
            grid-template-columns: 6fr 6fr;  
            grid-gap: 40px;  
            margin-top: 50px;  
            width: 85%;  
        }  
        .channel-highlights iframe {  
            width: 100%;  
            height: 250px;  
        }  
        .videos {  
            margin-top: 20px;  
            font-family: Arial;  
        }  
        .videos-row {  
            display: grid;  
            grid-template-columns: 2.4fr 2.4fr 2.4fr 2.4fr 2.4fr;  
            margin-top: 20px;  
        }  
        .videos-row  iframe{  
            width: 210px;  
        }  
    </style>  
</head>  
<body>  
    <header>  
        <div>  
            <span class="bi bi-justify"></span>  
            <img src="./images/youtube-logo.jpg" width="100">  
        </div>  
         <div>  
             <div class="search-bar">  
                <span>Search</span>  
                <span class="bi bi-search"></span>  
             </div>  
             <span class="bi bi-mic-fill"></span>  
         </div>  
         <div>  
            <span class="bi bi-three-dots-vertical"></span>  
            <span class="bi bi-person-circle"> Sign in </span>  
         </div>  
    </header>  
    <section>  
        <nav>  
            <div class="nav-item">  
                <span class="bi bi-house-door"></span>  
                <div class="nav-title">Home</div>  
            </div>  
            <div class="nav-item">  
                <span class="bi bi-film"></span>  
                <div class="nav-title">Videos</div>  
            </div>  
            <div class="nav-item">  
                <span class="bi bi-camera-video"></span>  
                <div class="nav-title">Live</div>  
            </div>  
            <div class="nav-item">  
                <span class="bi bi-clock-history"></span>  
                <div class="nav-title">History</div>  
            </div>  
        </nav>  
        <main>  
            <div>  
                <img class="banner-image" src="./images/nit-banner.jpg" width="100%">  
            </div>  
            <article>  
                <div>  
                    <img src="./images/nit-logo.jpg" width="100%">  
                </div>  
                <div>  
                    <div class="article-title">Naresh i Technologies</div>  
                    <div class="article-subtitle">@NareshIT • 1.29M subscribers • 3.1K videos</div>  
                    <div class="article-summary">  
                        We are one of the software training organization With a library of 200+ courses, we  
                    </div>  
                    <div>  
                        <a href="[http://www.instagram.com/nareshitech">instagram.com/nareshitech</a&gt](http://www.instagram.com/nareshitech%22%3Einstagram.com/nareshitech%3C/a&gt); and 7 more links  
                    </div>  
                    <div>  
                        <span class="bi bi-bell-fill"> Subscribe </span>  
                    </div>  
                </div>  
            </article>  
            <div class="nav-tabs">  
                <span>Home</span>  
                <span>Videos</span>  
                <span>Shorts</span>  
                <span>Live</span>  
                <span>Playlists</span>  
                <span>Community</span>  
                <span class="bi bi-search"></span>  
            </div>  
            <div class="channel-highlights">  
                <div>  
                    <iframe src="[https://www.youtube.com/embed/yBw-6rr5hbA"></iframe&gt](https://www.youtube.com/embed/yBw-6rr5hbA%22%3E%3C/iframe&gt);  
                </div>  
                <div>  
                    <b>Best Software Training Institute with Placements - Naresh i Technologies</b>  
                    <br><br>  
                    <div><small> <font color="gray">226,589 views 4 years ago</font> </small></div>  
                    <br>  
                    <div>Register For Free Demos On New Batches :-</div>  
  
                    <div>  
                        Free Weekend Workshop on Azure AI Certification Training<br> | @ 5:30 PM :-  <a href="[https://shorturl.at/9gcXZ">https://shorturl.at/9gcXZ</a&gt](https://shorturl.at/9gcXZ%22%3Ehttps:/shorturl.at/9gcXZ%3C/a&gt);  
                        <br><br>  
                        Free Workshop on LangChain Build AI Applications Using LLM <br> | @ 10:00 AM :- <a href="[https://shorturl.at/g69kl">https://shorturl.at/g69kl</a&gt](https://shorturl.at/g69kl%22%3Ehttps:/shorturl.at/g69kl%3C/a&gt);  
                    </div>  
  
                </div>  
            </div>  
  
            <div class="videos">  
                <div class="videos-toolbar">  
                    <span><big><b>Videos</b></big></span> <span class="bi bi-play-fill"></span> Play all  
                </div>  
                <div class="videos-row">  
                    <div>  
                        <iframe src="[https://www.youtube.com/embed/HHw5-W4SCVw"></iframe&gt](https://www.youtube.com/embed/HHw5-W4SCVw%22%3E%3C/iframe&gt);  
                        <p>  
                          Python Slicing | Learn String Sorting in Python with  
                        </p>  
                    </div>  
                    <div>  
                        <iframe src="[https://www.youtube.com/embed/HHw5-W4SCVw"></iframe&gt](https://www.youtube.com/embed/HHw5-W4SCVw%22%3E%3C/iframe&gt);  
                    </div>  
                    <div>  
                        <iframe src="[https://www.youtube.com/embed/HHw5-W4SCVw"></iframe&gt](https://www.youtube.com/embed/HHw5-W4SCVw%22%3E%3C/iframe&gt);  
                    </div>  
                    <div>  
                        <iframe src="[https://www.youtube.com/embed/HHw5-W4SCVw"></iframe&gt](https://www.youtube.com/embed/HHw5-W4SCVw%22%3E%3C/iframe&gt);  
                    </div>  
                    <div>  
                        <iframe src="[https://www.youtube.com/embed/HHw5-W4SCVw"></iframe&gt](https://www.youtube.com/embed/HHw5-W4SCVw%22%3E%3C/iframe&gt);  
                    </div>  
                </div>  
  
                <div class="videos-row">  
                    <div>  
                        <iframe src="[https://www.youtube.com/embed/HHw5-W4SCVw"></iframe&gt](https://www.youtube.com/embed/HHw5-W4SCVw%22%3E%3C/iframe&gt);  
                        <p>  
                          Python Slicing | Learn String Sorting in Python with  
                        </p>  
                    </div>  
                    <div>  
                        <iframe src="[https://www.youtube.com/embed/HHw5-W4SCVw"></iframe&gt](https://www.youtube.com/embed/HHw5-W4SCVw%22%3E%3C/iframe&gt);  
                    </div>  
                    <div>  
                        <iframe src="[https://www.youtube.com/embed/HHw5-W4SCVw"></iframe&gt](https://www.youtube.com/embed/HHw5-W4SCVw%22%3E%3C/iframe&gt);  
                    </div>  
                    <div>  
                        <iframe src="[https://www.youtube.com/embed/HHw5-W4SCVw"></iframe&gt](https://www.youtube.com/embed/HHw5-W4SCVw%22%3E%3C/iframe&gt);  
                    </div>  
                    <div>  
                        <iframe src="[https://www.youtube.com/embed/HHw5-W4SCVw"></iframe&gt](https://www.youtube.com/embed/HHw5-W4SCVw%22%3E%3C/iframe&gt);  
                    </div>  
                </div>  
            </div>  
        </main>  
    </section>  
</body>  
</html>

**Tables in HTML**

- Tables are used to design data grids.  
- Grid arranges information in rows and columns.  
- Grids are used for display, filtering, sorting and manipulating data.  
- HTML 5 provides following elements for table design  
  
    <table>  
    <thead>  
    <tbody>  
    <tfoot>  
    <tr>  
    <th>  
    <td>  
    <caption>  
    <colgroup>  
  
Syntax:  
    <table>  
        <caption> Table Caption </caption>  
        <thead>  
            <tr> <th> Heading </th> </tr>  
        </thead>  
        <tbody>  
            <tr> <td> Cell </td> </tr>  
        </tbody>  
        <tfoot>  
            <tr> <td> Cell </td> </tr>  
        </tfoot>  
    </table>  
  
Note: Colgroup can display only when group is defined with attribute or style.  
  
      <colgroup span="2">  
  
**Table Attributes:**  
  
**1. frame, rules, border**  
  
        **frame**    : It is defined for table with values as:  
                        a) box  
                        b) void  
                        c) rhs  
                        d) lhs  
                        e) above  
                        f) below  
                      Syntax:  
  
                      <table frame="box | void | above | below | rhs | lhs">   
  
        **rules**    : It is defined for rows, columns and groups.  
                      It have values  
                        a) rows  
                        b) cols      
                        c) groups  
                        d) none  
                        e) all  
  
        **border**  : It defined for cells. It can have "0 or 1" as value.  
                        0 = false, 1 = true  
                      To set border you have to remove rules attribute from table.  
  
Syntax:  
        <table rules="all" frame="void">  
        <table border="1" frame="void">  
  
**2. cellspacing & cellpadding**  
  
    cellspacing         : It set space between cells in table.  
    cellpadding        : It sets space between cell border and content inside.  
  
Syntax:  
    <table border="1"  frame="void" cellspacing="10" cellpadding="10">  
  
**3. align  & valign**  
  
    **align**                : It aligns cell content left, center, right or justify.  
    **valign**             : It aligns cell content vertically top, center or bottom.  
  
Syntax:  
    <td align="center" valign="top">  
    <tr align="center">  
     
Note: You can control alignments only row-wise.  
  
**4. width & height**  
  
    **width**            : It set cell width. It effects all rows in the column.  
    **height**            : It set cell height, it effects all cells in the row.  
  
    <td width="200">  
    <th width="200">  
                         
  
**5. bgcolor and background**  
  
     
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Tables</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
        .bi-circle-fill {  
            font-size: 6px;  
        }  
        .flag {  
           width: 16%;  
        }  
        .flag+span {  
           font-family: Arial;  
           font-size: 20px;  
           font-weight: bold;  
        }  
        .player {  
            width:100px;  
            height: 100px;  
        }  
        .row-1 {  
            display: grid;  
            grid-template-columns: 6fr 6fr;  
        }  
        .p-name {  
            font-family: Arial;  
            font-weight: bold;  
        }  
        table {  
            font-family: Arial;  
        }  
        thead {  
            color:gray;  
        }  
        caption {  
            color:gray;  
            text-align: left;  
            font-size: 30px;  
            margin-bottom: 20px;  
        }  
        .col-1{  
            display: flex;  
            flex-direction: column;  
            align-items: baseline;  
            justify-content: center;  
        }  
        tbody tr:first-child {  
            font-size: 25px;  
            font-weight: bold;  
        }  
        .bi-chevron-up {  
            font-size: 13px;  
            font-weight: bold;  
            color:green;  
        }  
        td {  
            background-size: 200px 200px;  
            background-repeat: no-repeat;  
        }  
    </style>  
</head>  
<body>  
    <table width="100%"  cellspacing="0" cellpadding="10">  
        <caption> Men's test All-Rounder Rankings </caption>  
        <colgroup span="4"></colgroup>  
        <thead>  
            <tr>  
                <th width="100" align="left">Pos</th>  
                <th width="150" align="left">Team</th>  
                <th width="200" align="left">Players</th>  
                <th width="200" align="left">Rating</th>  
                <th width="300" align="left">Career Best Rating</th>  
            </tr>  
        </thead>  
        <tbody>  
            <tr valign="center">  
                <td>01 <span class="bi bi-circle-fill"></span></td>  
                <td > <img src="./images/india.png" class="flag"> <span>IND</span> </td>  
                <td  background="./images/icc.png">    
                    <div class="row-1">  
                        <div class="col-1">  
                            <div><font size="4" color="gray">Ravindra</font></div>  
                            <div class="p-name">JADEJA</div>  
                        </div>  
                        <div>  
                            <img src="./images/jadeja.png" class="player">  
                        </div>  
                    </div>  
  
                </td>  
                <td>444</td>  
                <td align="right">469 v England at Rajkot 2024</td>  
            </tr>  
            <tr>  
                <td>02 <span class="bi bi-circle-fill"></span></td>  
                <td> <img src="./images/india.png" class="flag"> <span>IND</span> </td>  
                <td>    
                   <small>Ravichandran</small> <span class="p-name">ASHWIN</span>  
                </td>  
                <td>322</td>  
                <td align="right">492 v England at MOHALI 2016</td>  
            </tr>  
            <tr>  
                <td>08 <span class="bi bi-chevron-up"> 1 </span> </td>  
                <td> <img src="./images/eng.png" class="flag"> <span> ENGLAND </span> </td>  
                <td> <small>Chris</small> <span class="p-name">WOAKES</span> </td>  
                <td> 259 </td>  
                <td align="right">273 v Pakistan at Old Trafford 2020</td>  
            </tr>  
           
        </tbody>  
        <tfoot>  
            <tr>  
                <td colspan="5">Last updated on 31 August 2024</td>  
            </tr>  
        </tfoot>  
    </table>  
</body>  
</html>

**Attributes**  
1. frame, rules, border  
2. cellspacing, cellpadding  
3. align, valign  
4. width, height  
5. bgcolor, background  
  
6. colspan & rowspan  
  
     colspan        : It can merge multiple columns into one cell.  
     rowspan        : It can merge multiple rows into one cell.  
  
Note: You can apply span only for <th> or <td>.  
  
Syntax:  
        <th  colspan="4">  
        <td  rowspan="6">  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
</head>  
<body>  
    <table border="1" width="100%">  
        <thead>  
            <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>  
            <tr>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
                <td rowspan="6" align="center"> D<br>E<br>L<br>H<br>I </td>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
            </tr>  
            <tr>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
            </tr>  
            <tr>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
            </tr>  
            <tr>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
            </tr>  
            <tr>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
            </tr>  
            <tr>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
                <td>&nbsp;</td>  
            </tr>  
        </tbody>  
        <tfoot>  
            <tr>  
                <td colspan="5" align="center">&copy; copyright 2024</td>  
            </tr>  
        </tfoot>  
    </table>  
</body>  
</html>  
  
Note: You can create nested tables but make sure that the child table is inside <td> or <th> elements.  
  
Syntax:  
        <td>  
            <table>  
  
            </table>  
        </td>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        .card {  
            border-radius: 20px;  
        }  
        .t-head {  
            text-transform: uppercase;  
            font-family: Arial;  
            font-size: 20px;  
        }  
        table {  
            font-family: Arial;  
        }  
    </style>  
</head>  
<body>  
    <table width="100%" border="1" frame="void" cellspacing="20" cellpadding="10">  
        <tr height="500">  
            <td class="card" width="400" valign="top">  
                <table width="100%" rules="rows">  
                    <thead>  
                        <tr>  
                            <th colspan="3" align="center" class="t-head">test - allrounder Rankings</th>  
                        </tr>  
                    </thead>  
                   <tbody>  
                        <tr height="50">  
                            <td>01</td>  
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                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>02</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>03</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>04</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>05</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>06</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>07</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
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                   <tfoot>  
                    <tr valign="bottom" height="60">  
                        <td colspan="3" align="center"> Full Ratings </td>  
                    </tr>  
                   </tfoot>  
                </table>  
            </td>  
            <td class="card" width="400" valign="top">  
                <table width="100%" rules="rows">  
                    <thead>  
                        <tr>  
                            <th colspan="3" align="center" class="t-head">ODI - allrounder Rankings</th>  
                        </tr>  
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                        <tr height="50">  
                            <td>02</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
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                        <tr height="50">  
                            <td>03</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>04</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>05</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>06</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>07</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                   </tbody>  
                   <tfoot>  
                    <tr valign="bottom" height="60">  
                        <td colspan="3" align="center"> Full Ratings </td>  
                    </tr>  
                   </tfoot>  
                </table>  
            </td>  
            <td class="card" width="400" valign="top">  
                <table width="100%" rules="rows">  
                    <thead>  
                        <tr>  
                            <th colspan="3" align="center" class="t-head">T20 - allrounder Rankings</th>  
                        </tr>  
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                   <tbody>  
                        <tr height="50">  
                            <td>01</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>02</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
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                            <td>03</td>  
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                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>04</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
                        </tr>  
                        <tr height="50">  
                            <td>05</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
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                        <tr height="50">  
                            <td>06</td>  
                            <td>&nbsp;</td>  
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                        </tr>  
                        <tr height="50">  
                            <td>07</td>  
                            <td>&nbsp;</td>  
                            <td>&nbsp;</td>  
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                   </tbody>  
                   <tfoot>  
                    <tr valign="bottom" height="60">  
                        <td colspan="3" align="center"> Full Ratings </td>  
                    </tr>  
                   </tfoot>  
                </table>  
            </td>  
        </tr>  
    </table>  
</body>  
</html>

**Forms in HTML**

- Form provides an UI for handling various interactions.  
- Form interactions are often known as CRUD operations.  
  
        C    Create        Submit your data to server  
        R    Read       Query data from server  
        U    Update       View and modify data on server  
        D    Delete         View and remove data from server  
  
- Form comprises of various elements like  
        button  
        textbox  
        checkbox  
        radio  
        listbox  
        labels  
        etc..  
- To design forms HTML provides elements like  
        <form>  
        <input>  
        <select>  
        <progress>  
        <meter>  
        <option>  
        <datalist>  
        etc...  
  
**The <form> Element:**  
- It is a generic container.  
- It have pre-defined functionality like submit, reset, validate etc.  
  
Syntax:  
        <form>  
            … form elements …  
        </form>  
  
Attributes:  
     
1. id           : It is a unique ID for form later used in scripting to access form.  
  
2. name         : It is a reference name for form but it can be common for multiple  elements.  
3. class        : It defines a class name used in CSS and script to access element.  
  
  
4. method    : It defines the action to perform.  
              Every form have 2 basic methods  
                a) GET  
                b) POST  
  
FAQ's:  
1. What is the role of GET method?  
A. It is used to submit data for fetching information from server.  
  
2. What is the role of POST method?  
A. It is used to submit data for saving information on server.  
  
Syntax:  
        <form  method="GET | POST">  
        </form>  
  
3. Can we use GET method for saving data on server?  
A. Yes. But it is not recommended always.  
  
4. Why saving data on GET method is not recommended?  
A.  
    - It submits data by appending into browser address bar as "Query String".  
    - Everyone can view your data.  
    - It is not safe.  
    - It is easy to hack your data.  
    - It is stored in browser logs. [history].  
    - It can be bookmarked.  
    - It can't submit complex data like binary.  
    - It have limit for data, which is max 2048 chars.  
     
5. What is the advantage of submitting data on GET?  
A.  It can cache the data and save round trips.  
  
6. What are the features of POST?  
A.  
   - It submits data as "Form Body".  
   - It not saved in browser logs.  
   - It is safe.  
   - It can't be bookmarked.  
   - You can submit any complex data.  
   - There is no limit for data.  
   - It is hard to hack the data.  
   
7. What is issue with POST?  
A. It can't cache the data.

Form Element Attributes  
1. id  
2. name  
3. class  
4. method  
5. action          : It defines the target location where you can submit current page data.  
               Typically it is a server side page.  
  
Syntax:  
    <form method="get" action="./page.html">  
  
    </form>  
  
6. novalidate    : It disables the default HTML validations.  
  
FAQ: Why to disable default validations?  
Ans:  Every time the default validations may not be according to client requirements,  
     hence we disable default validations and write custom validation.  
  
Syntax:  
        <form method="get"  novalidate> </form>  
  
      "novalidate" is a Boolean attribute, which is default set to "true".  
  
  
                           Input Element  
- It allows user to input any type of value.  
  
Syntax:  
        <input>  
  
- You can restrict input of value to specific type by using "type" attribute.  
  
Syntax:  
        type="text"  
        type="email"  
        type="password"  
        type="number"      
        etc..

**Text Box**  
- It is used for string input.  
- String is a literal with alphabet, number and special chars.  
  
Syntax:  
    <input type="text">  
  
Attributes:  
1. id               ]  
2. name       ]  used for reference in code [JS or CSS]  
3. class        ]  
  
Note: It is mandatory to maintain "name" attribute for every element.  
      If name is not defined then form can't submit its value.  
  
Syntax:  
    <input type="text" name="City">  
  
4. value            : It defines the default value to display in text box.  
  
Syntax:  
    <input type="text"  name="City"  value="Hyd">  
  
5. readonly        : It will not allow to change the value of textbox, but you can submit  
                  the value.  
  
Syntax:  
    <input type="text" name="City" value="Hyd" readonly>  
  
6. disabled        : It will not allow to change and submit.  
  
Syntax:  
    <input type="text" name="City" value="Hyd" disabled>  
  
Note: CSS provides "read-only" and "disabled" classes to configure style for elements  
      set with readonly and disabled attributes.  
  
Syntax:  
       input : read-only {  
         cursor: not-allowed;  
       }  
       input : disabled {  
        background-color:gray;  
            color:white;  
       }  
  
7. placeholder        : It defines watermark text to display for input element.  
                  Watermark can be displayed only when value is not defined.  
  
Syntax:  
    <input type="text" placeholder="User Name" name="UserName">  
    <input type="text" placeholder="Search Amazon.in" name="Search">      
  
8. size            : It sets width for textbox, the default is 20.  
                  It is not limit of chars in textbox.  
  
Syntax:  
    <input type="text" name="OPT" size="6">  
  
  
9. maxlength        : It sets restriction for maximum number of chars in textbox.  
  
Syntax:  
    <input type="text" name="OTP" size="4" maxlength="4">  
  
10. minlength        : It sets validation for minimum number of chars in textbox.  
  
Syntax:  
    <input type="text" name="OTP" size="4"  minlength="4" maxlength="4">  
  
11. required        : It is a validation used for mandatory fields. It will not allow  
                  to submit empty.  
  
Syntax:  
    <input type="text" name="OTP" size="4" minlength="4" maxlength="4" required>  
  
Note: Minlength and Maxlength are the attributes that verify only when value is  
      defined, they can't check empty.  
  
12. autofocus        : It sets focus to element automatically on page load.  
  
Syntax:  
    <input type="text" name="OTP"  autofocus>  
  
13. list            : It can configure a data list for input.  
                  Data list is designed by using <datalist> element.  
                  Data list is used as auto complete text.  
  
Syntax:  
    <input type="text" name="search"  list="terms">  
    <datalist id="terms">  
    <option> Term-1 </option>  
    <option> Term-2 </option>  
    </datalist>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        input:read-only {  
            cursor:not-allowed;  
        }  
        input:disabled {  
            cursor: not-allowed;  
            background-color: gray;  
        }  
    </style>  
</head>  
<body>  
    <form method="get" align="center">  
        <h3>Search Tutorial</h3>  
         <div>  
            <input type="text" name="Tutorial" size="40" list="terms">  
            <datalist id="terms">  
                <option>HTML Tutorial</option>  
                <option>HTML Examples</option>  
                <option>JavaScript Tutorial</option>  
                <option>JavaScript Projects</option>  
                <option>HTML Projects</option>  
                <option>CSS Examples</option>  
                <option>CSS Projects</option>  
                <option>CSS Tutorial</option>  
            </datalist>  
         </div>  
         <br>  
        <button>Search</button>  
    </form>  
     
</body>  
</html>

14. pattern  
- It is used to validate the format of input value.  
- Pattern uses a "Regular Expression" to verify the format of input value.  
- Regular Expression is built by using  
    a) Meta Characters  
    b) Quantifiers  
  
Meta Character        Description  
-------------------------------------------------------------------------------------------------------------  
?                    zero or one occurrence of a character.  
  
                    Syntax:  
                    pattern="colou?r"        => color, colour  
  
\*                    zero or more occurrences of a character.  
  
                    Syntax:  
                    pattern="colou\*r"        => color, colour, colour, colouuur…  
  
+                    one or more occurrences of a character.  
  
                    Syntax:  
                    pattern="colou+r"        => colour, colouur…  
  
  
. (dot)                any single character, alpha numeric and special character.  
  
                    Syntax:  
                    pattern=".at"         => cat, bat, @at, 2at, Mat  
  
| (pipe)                It defines multiple chars or words. logical "OR".  
  
                    Syntax:  
                    pattern="red|green|blue"    => red, green, blue  
                    pattern="$|%|A"            => $, %, A  
  
  
\                    It is used as escape sequence in pattern. It can transform  
                    a meta character into normal character & vice versa.  
  
                    Syntax:  
                    pattern="\+91"  
                    pattern="gmail\.com"  
  
[ ]                    It refers to specific set of characters or range of chars.  
  
                    Syntax:  
                    pattern="[a,d,s,4,7,$,&]"          
                    pattern="[a-d,4-9,A-M]"  
                    pattern="[a-z,A-Z,0-9,!@#$%]"  
  
( )                    It refers to union of characters in an expression.  
  
                    Syntax:  
                    pattern="(?=.\*[A-Z])"  
  
\d                    [0-9] only numeric allowed.  
  
                    Syntax:  
                    pattern="\d\d"        => 44, 67, 13  
                    pattern="\d?\d"    => 5, 24  
  
\D                    It refers to non-numeric [a-zA-Z,!@#$%^]  
  
                    Syntax:  
                    pattern="\d\D"        => 3A, 2@, 3b  
  
\w                    It defines a set of chars which include word chars.  
                    [A-Z, a-z, 0-9, \_ ]  
  
                    Syntax:  
                    pattern="\w"  
  
\W                    It defines non-word chars. only special chars exclude "\_".  
  
                    Syntax:  
                    pattern="\d\W\D"    => 3$A,  2@b,  2@$  
  
\s                    It refers to blank space.  
         
                    Syntax:  
                    pattern="\d\s\d"    2 5, 6 8  
  
[^]                    exclude the specified chars or range of chars.  
  
                    Syntax:  
                    pattern="[^a-d, A-D, 4-9]"  
                    pattern="[^a, d, s]"  
  
\^                    Starts with  
  
$                    Ends with  
  
                    Syntax:  
                        pattern="\^ expression $"  
  
\i                    Ignore case  
  
                    Syntax:  
                        pattern="chars\i"  
  
  
Quantifier            Description  
-------------------------------------------------------------------------  
 { n }                    exact number of chars.  
  
                    pattern="\d{10}"  
  
{n, m}                n- is minimum , m- is maximum  
     
                    pattern="\d{4,10}"  
  
{n, }                    minimum - n and maximum any  
  
                    pattern="\d{4, }"  
  
  
Query: Write a pattern to validation mobile number starting with +91 and have exactly  
        10 digits after 91.  
  
Syntax:  
        pattern="\+91\d{10}"  
  
Query: Write a pattern to validate US mobile format  
  
            +(1)(425) 555-0100  
            +(1)(000) 000-0000  
  
        pattern="\+\(1\)\(\d{3}\)\s\d{3}-\d{4}"

Pre-defined Regular Expressions  
         
       at least one uppercase letter  
        (?=.\*[0-9])        at least one number  
        (?=.\*[!@#$%])        at least one special character  
  
Query: Write a pattern to validate user name 4 to 15 chars alpha numeric with \_ .  
  
        pattern="\w{4,15}"  
  
Query: user name 4 to 15 chars alpha numeric with \_ and at least 1 uppercase letter.  
  
        pattern="(?=.\*[A-Z])\w{4,15}"  
  
Query: user name 4 to 15 chars alpha numeric with \_ and at least 1 uppercase letter  
        and one numeric value is mandatory.  
  
        pattern="(?=.\*[A-Z])(?=.\*[0-9])\w{4,15}"  
  
Query: user name 4 to 15 chars alpha numeric and special chars allowed with  
        at least one uppercase , number and special char.  
  
        pattern="(?=.\*[A-Z])(?=.\*[0-9])(?=.\*[\W])[\w,\W]{4,15}"  
  
Summary:  
- id  
- name  
- class  
- value  
- size  
- placeholder  
- autofocus  
- minlength  
- maxlength  
- required  
- readonly  
- disabled  
- list  
- pattern  
  
FAQ's:  
1. What are state attributes?  
A. readonly, disabled  
  
2. What is difference between readonly and disabled?  
A. readonly allows to submit, disabled will not allow to submit.  
  
3. What are validation attributes?  
A. minlength, required, pattern

**Password Input**

- It is similar to textbox in attributes but will mask the chars with "\*".  
  
Syntax:  
    <input type="password" name="Password" pattern=""  required>  
  
- "list" attribute is not recommended for password.  
  
  **Email Input**

- It is similar to textbox but validates email address without a pattern.  
  
Syntax:  
    <input type="email"  name="email" required>  
  
- Email pattern verifies "@" in address.  
  
  **URL Input**  
- It verifies the format of URL.  
- URL must have protocol and domain name.  
  
        [www.amazon.in](http://www.amazon.in/)        // invalid  
        [https://www.amazon.in](https://www.amazon.in/)    // valid  
  
Syntax:  
    <input type="url"  required  name="URL">  
  
                         
 **Number Input**  
- It allows input of numeric type value.  
- It provides a numeric up-down control.  
- It can also restrict the range of values by using "min & max".  
- It can control the step value by using "step" attribute  
  
Syntax:  
    <input type="number"  name="age"  min="15" max="30"  value="22" required>  
    <input type="number"  name="rate" min="15.45" max="20.45" step="0.01">  
  
 **Range Input**  
- It is for numeric type values.  
- It provides a slider to select range of values.  
- It can have min, max and range. [step]  
  
Syntax:  
    <input type="range"  name="price" min="1000" max="10000" value="3000">  
  
  **Color Input**  
- It can display a color picker that allows to select color.  
- The color values are 6 char hexadecimal. [other color codes are not supported]  
  
  
Syntax:  
  <input type="color"  name="color"  value="#ff00ff">  
  
 **Date & Time Input**  
- It provides a date and time picker.  
- Input includes various types like  
    a) date  
    b) time  
    c) datetime-local  
    d) week  
    e) month  
    f) year  
  
Syntax:  
    <input type="date">  
    <input type="month">  
    <input type="year">  
  
- You can restrict date by using "min" & "max" attributes.  
- The date format for developer is always "year-month-day".  
  
Syntax:  
    <input type="date" min="2024-09-06"  max="2024-09-20">

Pre-defined Regular Expressions  
         
        (?=.\*[A-Z])        at least one uppercase letter  
        (?=.\*[0-9])        at least one number  
        (?=.\*[!@#$%])        at least one special character  
  
Query: Write a pattern to validate user name 4 to 15 chars alpha numeric with \_ .  
  
        pattern="\w{4,15}"  
  
Query: user name 4 to 15 chars alpha numeric with \_ and at least 1 uppercase letter.  
  
        pattern="(?=.\*[A-Z])\w{4,15}"  
  
Query: user name 4 to 15 chars alpha numeric with \_ and at least 1 uppercase letter  
        and one numeric value is mandatory.  
  
        pattern="(?=.\*[A-Z])(?=.\*[0-9])\w{4,15}"  
  
Query: user name 4 to 15 chars alpha numeric and special chars allowed with  
        at least one uppercase , number and special char.  
  
        pattern="(?=.\*[A-Z])(?=.\*[0-9])(?=.\*[\W])[\w,\W]{4,15}"  
  
Summary:  
- id  
- name  
- class  
- value  
- size  
- placeholder  
- autofocus  
- minlength  
- maxlength  
- required  
- readonly  
- disabled  
- list  
- pattern  
  
FAQ's:  
1. What are state attributes?  
A. readonly, disabled  
  
2. What is difference between readonly and disabled?  
A. readonly allows to submit, disabled will not allow to submit.  
  
3. What are validation attributes?  
A. minlength, required, pattern  
  
  
 **Password Input**

- It is similar to textbox in attributes but will mask the chars with "\*".  
  
Syntax:  
    <input type="password" name="Password" pattern=""  required>  
  
- "list" attribute is not recommended for password.  
  
  **Email Input**

- It is similar to textbox but validates email address without a pattern.  
  
Syntax:  
    <input type="email"  name="email" required>  
  
- Email pattern verifies "@" in address.  
  
  **URL Input**

- It verifies the format of URL.  
- URL must have protocol and domain name.  
  
        [www.amazon.in](http://www.amazon.in/)        // invalid  
        [https://www.amazon.in](https://www.amazon.in/)    // valid  
  
Syntax:  
    <input type="url"  required  name="URL">  
  
                         
  **Number Input**

- It allows input of numeric type value.  
- It provides a numeric up-down control.  
- It can also restrict the range of values by using "min & max".  
- It can control the step value by using "step" attribute  
  
Syntax:  
    <input type="number"  name="age"  min="15" max="30"  value="22" required>  
    <input type="number"  name="rate" min="15.45" max="20.45" step="0.01">  
  
   **Range Input**

- It is for numeric type values.  
- It provides a slider to select range of values.  
- It can have min, max and range. [step]  
  
Syntax:  
    <input type="range"  name="price" min="1000" max="10000" value="3000">  
  
**Color Input**

- It can display a color picker that allows to select color.  
- The color values are 6 char hexadecimal. [other color codes are not supported]  
  
  
Syntax:  
  <input type="color"  name="color"  value="#ff00ff">  
  
**Date & Time Input**

- It provides a date and time picker.  
- Input includes various types like  
    a) date  
    b) time  
    c) datetime-local  
    d) week  
    e) month  
    f) year  
  
Syntax:  
    <input type="date">  
    <input type="month">  
    <input type="year">  
  
- You can restrict date by using "min" & "max" attributes.  
- The date format for developer is always "year-month-day".  
  
Syntax:  
    <input type="date" min="2024-09-06"  max="2024-09-20">

TextBox  
Password  
Number  
Range  
Email  
Date & Time  
Url  
Color  
  
 **File Input**

- It is a file browser.  
- It allows user to select a file from the device.  
- It is not a file uploading element, It is just a file selector.  
  
Syntax:  
    <input type="file"  name="photo">  
  
- You can set filters for file types by using "accept" attribute.  
  
Syntax:  
    <input type="file"  name="photo"  accept=".jpg, .png">  
  
- You can set "multiple" attribute to enable selection of multiple files.  
  
Syntax:  
    <input type="file" name="photos"  multiple>  
  
  **Radio Button**

- Radio allows to select one or multiple options from a group of choices.  
- Radio once checked can't be unchecked.  
- Radios are used with "Mutex" mechanism.  [Mutual Exclusion]   
- You can configure mutex by defining same name for all radios in a category.  
  
    <input type="radio" name="gender"> Male  
    <input type="radio" name="gender"> Female  
  
- Always use labels for binding with form elements.  
  
    <input type="radio"  name="gender"> <label for="gender"> Male </label>  
  
- You can make one radio selected by using "checked" attribute.  
  
    <input type="radio" name="gender" checked> Male  
  
- Radios by default submit "on" as value, hence every radio must have "value" attribute.  
     
    <input type="radio" name="gender" value="Male">  Male  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
</head>  
<body>  
    <form>  
        <input type="radio" name="gender" value="Male" checked> <label for="gender">Male</label>  
        <input type="radio" name="gender" value="Female"> <label for="gender">Female</label>  
        <button>Submit</button>  
    </form>  
</body>  
</html>  
  
 **Checkbox**

- It is similar to radio button but allows to check and uncheck any option.  
- You can select any one or multiple from a group of choices.  
  
Syntax:  
 <input type="checkbox" name="course"  value="UI" checked>  
 <label for="course"> UI Full Stack </label>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        ul {  
            list-style: none;  
            height: 50px;  
            border: 1px solid gray;  
            width: 200px;  
            overflow: auto;  
        }  
    </style>  
</head>  
<body>  
    <form>  
        <ul>  
            <li><input type="checkbox" name="course" value="Java"> <label>Java</label> </li>  
            <li><input type="checkbox" checked name="course" value="UI"> <label>UI Full Stack</label> </li>  
            <li><input type="checkbox" name="course" value=".NET"> <label>.NET</label> </li>  
            <li><input type="checkbox" name="course" value="Oracle"> <label>Oracle</label> </li>  
        </ul>  
        <button>Submit</button>  
    </form>  
</body>  
</html>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
       div {  
        margin-bottom: 20px;  
       }  
       input {  
          border-right: none;  
          border-top: none;  
          border-left: none;  
          outline: none;  
       }  
    </style>  
</head>  
<body>  
    <form>  
        <div>  
            <input type="text" placeholder="User Name">  
        </div>  
        <div>  
            <input type="password" placeholder="Password">  
        </div>  
        <button>Submit</button>  
    </form>  
</body>  
</html>  
  
Note: Radio's and Checkbox can have a switch type of appearance with bootstrap and CSS combination.  
  
**Dropdown List**

- A dropdown list enables user to select any one option from a group of choices.  
- It is designed by using the following elements  
  
    <select>            It adds a dropdown  
    <optgroup>        It is used to group a category of options  
    <option>            It represents an option in dropdown.  
  
Syntax:  
    <select>  
        <optgroup label="Category">  
        <option> Item-1 </option>  
        <option> Item-2 </option>  
        </optgroup>  
    </select>  
  
- Dropdown is RC data type, It will not allows icons and other formats.  
- Option can display only plain text content.  
- Every option contains 3 attributes  
  
    a) value            It defines the value to submit.  
    b) selected        It selects the option on load.  
    c) disabled        It will not allow to select.  
  
    <option value="RGI"> Hyderabad Airport </option>  
    <option selected>  MYSQL </option>  
    <option disabled>  MongoDB </option>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
       div {  
        margin-bottom: 20px;  
       }  
       input {  
          border-right: none;  
          border-top: none;  
          border-left: none;  
          outline: none;  
       }  
    </style>  
</head>  
<body>  
    <form>  
        <div>  
            <label>Select Course</label>  
            <div>  
                <select name="Course">  
                    <option>Select a Course</option>  
                    <optgroup label="Databases">  
                        <option value="MongoDB"> MongoDB </option>  
                        <option value="DBSQL001" disabled>MySQL</option>  
                    </optgroup>  
                    <optgroup label="Languages">  
                        <option selected>C#</option>  
                        <option>C++</option>  
                    </optgroup>  
                </select>  
            </div>  
        </div>  
        <button>Submit</button>  
    </form>  
</body>  
</html>

**ListBox**

- A list box allows to select one or multiple from a group of choices.  
- A dropdown can transform into listbox by using 2 attributes  
    a) multiple  
    b) size  
  
Syntax:  
    <select>            => dropdown  
    <select size="2">    => list box  
    <select multiple>    => list box allows selection of multiple

  **Textarea**

- It allows multiline text.  
- It is RC data type, you can use only for plain text content.  
  
Syntax:  
    <textarea  rows=""  cols=""  readonly   disabled>    
         Your text  
    </textarea>  
  
C:\>mode  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
       
    </style>  
</head>  
<body>  
    <form>  
       <fieldset>  
           <legend>Your Comments</legend>  
           <textarea rows="4" cols="40"></textarea>  
           <br><br>  
           <h4>Terms of Service</h4>  
           <textarea disabled rows="4" cols="40"> Lorem ipsum dolor sit amet consectetur adipisicing elit. Magni nam tempore, eum illum labore necessitatibus quisquam est mollitia at ipsa, sit impedit temporibus ratione blanditiis minima porro aliquam dolores officiis. </textarea>  
           <br>  
           <input type="checkbox"><label>I Accept</label>  
           <br>  
           <br>  
           <button>Post Comment</button>  
       </fieldset>  
    </form>  
</body>  
</html>

**Progress Bar**  
- It is used to display status of any task performed in page.  
- Status can be time elapsed or time remaining etc.  
- Task includes actions like download, upload, copy, install etc.  
  
Syntax:  
   <progress> </progress>  
  
Attributes:  
  - min  
  - max  
  - value  
  
Syntax:  
   <progress min="1" max="100"  value="40"> </progress>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
</head>  
<body>  
    <dl>  
        <dt>Preparing for Download</dt>  
        <dd><progress></progress></dd>  
        <dt>30% Completed</dt>  
        <dd>  
            <progress min="1" max="100" value="30"></progress>  
        </dd>  
    </dl>  
</body>  
</html>  
  
  **Meter**  
- It is used to display grade meter by using various colors.  
  
Syntax:  
    <meter  min=""  max=""  value=""  low=""  high="">  </meter>  
  
- If low and high are not defined or set to zero then color is green.  
- If low and high have less difference then color is red.  
- If low and high have more difference then color is yellow.  
  
Syntax:  
  <meter min="1" max="100" value="100" low="60" high="80"> </meter>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <link rel="stylesheet" href="./node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
        meter {  
            width: 200px;  
        }  
        ul {  
            list-style: none;  
        }  
    </style>  
</head>  
<body>  
    <ul>  
        <li> 5 <span class="bi bi-star-fill"></span> <meter min="1" max="100" value="50"></meter> 5,600 </li>  
        <li> 3 <span class="bi bi-star-fill"></span> <meter min="1" max="100" low="40" high="80" value="100"></meter> 700 </li>  
        <li> 1 <span class="bi bi-star-fill"></span> <meter min="1" max="100" low="60" high="80" value="100"></meter> 100 </li>  
  
    </ul>  
</body>  
</html>  
  
**Buttons**  
- Buttons are used to confirm user actions.  
- User actions can be  
    a) Record Actions  
    b) Record Navigation  
    c) Miscellaneous actions etc.  
- Record actions like : insert, update, delete, clear, submit  
- Record navigation like : previous, next, first, last..  
- Miscellaneous actions like: open, close, save, print etc..  
- Buttons are of 2 types  
     
    1. Generic Buttons  
    2. Non Generic  
  
- Generic buttons have pre-defined functionality.  
  
    a) Submit        : It submit form data to server.  
    b) Reset        : It resets the form data to default.  
  
 HTML 4 Generic Buttons:  
  
    <input type="submit">    ] value attribute can change the text  
    <input type="reset">        ]  for buttons  
  
HTML 5 Generic Buttons  
     
    <button type="submit"> Text | Image | Icon </button>  
    <button type="reset">  Text | Image | Icon </button>  
  
- Non Generic buttons are with custom functionality. Developer have to define a functionality for button explicitly.  
  
HTML 4:  
    <input type="button"  value="any">  
  
HTML 5:  
    <button type="button"> Text | Image | Icon </button>  
  
Note: You can configure custom functionality to any non-generic button using client side  
          script.  
  
FAQ: Is it possible to disable generic functionality and add custom?  
Ans:  Yes. JavaScript provides a method called "preventDefault()".  
  
  
Summary:  
- Form  
- TextBox  
- Password  
- Number  
- Range  
- Email  
- URL  
- Color  
- Date & Time  
- File  
- Radio  
- Checkbox  
- Listbox  
- Dropdown List  
- Textarea  
- Progress  
- Meter  
- Button  
- Datalist  
  
**Basic Format of Form in Webpage**  
1. All form elements must be in <form> container.  
  
2. Every category in form must be defined using <div>  
  
3. Every category must have a <label>  
  
4. Label must bind with form element by using "for" attribute.  
  
5. Every form must have a generic "submit"  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <link rel="stylesheet" href="./node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <style>  
        body {  
            display: flex;  
            justify-content: center;  
            align-items: center;  
            height: 100vh;  
        }  
        form {  
            padding: 20px;  
            border:1px solid gray;  
            box-shadow: 2px 2px 2px black;  
            font-family: Arial;  
            width: 200px;  
            height: 300px;  
        }  
        .form-group {  
            margin-top: 20px;  
            margin-bottom: 20px;  
        }  
        .form-label {  
            margin-bottom: 5px;  
            font-weight: bold;  
        }  
        .btn-login {  
            width: 100%;  
            border:none;  
            background-color: gold;  
            padding: 5px;  
            font-size: 18px;  
            border-radius: 5px;  
        }  
        input {  
            width: 100%;  
            height: 25px;  
            border-radius: 5px;  
            border:1px solid gray;  
        }  
        .login-title {  
            font-size: 20px;  
        }  
        dd {  
            margin-top: 10px;  
        }  
    </style>  
</head>  
<body>  
    <form>  
        <div class="login-title bi bi-person-fill"> User Login</div>  
        <div class="form-group">  
            <label for="UserName" class="form-label">User Name</label>  
            <div>  
                <input type="text" name="UserName">  
            </div>  
        </div>  
        <div class="form-group">  
            <label for="Password" class="form-label">Password</label>  
            <div>  
                <input type="password" name="Password">  
            </div>  
        </div>  
        <div class="form-group">  
            <details>  
                <summary>Need Help ?</summary>  
                <dl>  
                    <dd><a href="#">Forgot Password</a></dd>  
                    <dd><a href="#">Recover Id</a></dd>  
                </dl>  
            </details>  
        </div>  
        <div class="form-group">  
            <button type="submit" class="btn-login">Login</button>  
        </div>  
    </form>  
</body>  
</html>  
  
            CSS Classes for Forms

CSS Classes for Form Elements  
  
1. Element State Classes  
  
    :read-only         Element defined with read-only attribute  
    :disabled         Element defined with disabled  
    :focus         When element gets focus [click inside element]  
    :target       Element is target of intra document link  
    :checked         Checkbox or radio is checked.  
  
CSS Selectors  
  
    Child Selector    parent   child {  }  
    Direct Child    parent > child {  }  
    Adjacent Sibling    element+adjacent { }  
    General Sibling    element~general {  }  
  
Syntax:  
    nav  span {  }    all spans in <nav> at any level  
    nav > span { }    all direct spans in <nav>  
    nav + span { }    span adjacent to nav  
    nav ~ span { }    span any where after nav but within same scope.  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        .container > p {  
            color:red;  
        }  
    </style>  
</head>  
<body>  
    <div class="container">  
        <p>Para-1</p>  
        <p>Para-2</p>  
        <div> <p>Para-3</p> </div>  
        <p>Para-4</p>  
    </div>  
</body>  
</html>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
         h2~p {  
            color:red;  
         }  
    </style>  
</head>  
<body>  
        <h2>Heading</h2>  
        <p>Para-1</p>  
        <p>Para-2</p>  
        <p>Para-3</p>  
        <p>Para-4</p>  
     
</body>  
</html>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
         
        .password+div {  
            display: none;  
        }  
        .password:focus+div {  
            display: block;  
            color:red;  
            font-size: 14px;  
        }  
        .terms+label {  
            color:red;  
        }  
        .terms:checked+label {  
            color:green;  
        }  
        .terms~button {  
            display: none;  
        }  
        .terms:checked~button {  
            display: block;  
        }  
    </style>  
</head>  
<body>  
    <form>  
        <dl>  
            <dt>User Name</dt>  
            <dd><input type="text" readonly></dd>  
            <dt>Password</dt>  
            <dd>  
                <input type="password" class="password" pattern="\w{4,15}">  
                <div>Password 4 to 15 chars alpha numeric</div>  
            </dd>  
            <dt>Terms of Service</dt>  
            <dd>  
                <textarea disabled rows="4" cols="40">Lorem, ipsum dolor sit amet consectetur adipisicing elit. Temporibus similique provident cum velit voluptatum laboriosam minima perspiciatis quas sed vitae reiciendis, dolorum fugit est corrupti blanditiis dolores. Dolores, sequi nobis.</textarea>  
                <div>  
                    <input type="checkbox" class="terms"> <label> I Accept </label>  
                    <br><br>  
                    <button>Login</button>  
                </div>  
            </dd>  
        </dl>  
         
    </form>  
</body>  
</html>  
  
  
2. Validation State Classes  
  
    :required         It sets effects if input is defined with required.  
    :optional         It sets effects if input is optional.  
    :valid         It sets effects if input is valid. [validation pass]  
    :invalid         It sets effects if input is invalid. [validation fail]  
    :in-range         It defines effects if value is in range.  
    :out-of-range     It defines effects if values is out of range.  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Document</title>  
    <style>  
        input:optional+span {  
            display: none;  
        }  
        input:required+span {  
            display: inline;  
            color:red;  
        }  
        input:required {  
            border:1px solid red;  
        }  
        input:optional~div {  
            display: none;  
        }  
        input:required~div {  
            color:red;  
            display: block;  
            font-size: 13px;  
        }  
        input:valid~div {  
            display: none;  
        }  
        input:valid+span {  
            display: none;  
        }  
        input:valid {  
            border:1px solid black;  
        }  
        .mobile+div {  
            display: none;  
        }  
        .mobile:invalid+div {  
            display: block;  
            color:red;  
            font-size: 13px;  
        }  
        .age:in-range~div {  
            display: none;  
        }  
        .age:out-of-range~div {  
            display: block;  
            color:red;  
            font-size: 14px;  
        }  
    </style>  
</head>  
<body>  
        <form>  
            <dl>  
                <dt>User Name</dt>  
                <dd>  
                    <input type="text"><span>\*</span>  
                    <div>Name Required</div>  
                </dd>  
                <dt>Password</dt>  
                <dd><input type="password" required><span>\*</span>  
                    <div>Password Required</div>  
                </dd>  
                <dt>Age</dt>  
                <dd><input type="number" class="age" min="15" max="30"><span>\*</span>  
                    <div>Age 15 to 30 only</div>  
  
                </dd>  
                <dt>Mobile</dt>  
                <dd>  
                    <input type="text" required class="mobile" pattern="\+91\d{10}">  
                    <span>\*</span>  
                    <div>Invalid Mobile +91 10 digits required</div>  
                </dd>  
            </dl>  
            <button>Register</button>  
        </form>  
</body>  
</html>  
  
                            Bootstrap

- Bootstrap is a front end tool kit used to build responsive and interactive UI rapidly.  
- It provides pre-defined components which you can customize and implement in your applications.  
- A component comprises of  
    a) Design         : with HTML  
    b) Styles        : with CSS  
    c) Functionality     : with JavaScript  
- The popular components of bootstrap are  
    a) Navbar  
    b) Cards  
    c) Carousel  
    d) Offcanvas  
    e) Input Group  etc..  
- Bootstrap provides pre-defined classes for CSS layout and design.  
- Bootstrap provides pre-defined website templates.  
- Bootstrap provides icons and fonts library.  
- Bootstrap is free, open source and cross platform tool kit.  
- Bootstrap latest version is 5x.  
  
Setup Bootstrap for project:  
  
1. Open terminal and install the following  
  
    > npm  install  bootstrap  bootstrap-icons --save  
  
    > npm  install bootstrap@4  [old version]  
  
2. Link the following file to HTML page  
  
 <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
 <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
 <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"> </script>  
  
Note: Bootstrap sets a default font called "Roboto".  
          It sets styles for HTML elements and margin to zero.  
  
  
                     Bootstrap Classes  
1. Container classes  
  
    .container             mobile  
    .container-sm         watch  
    .container-md       tab  
    .container-lg       pc  
    .container-xl         laptop  
    .container-xxl         laptop-wide  
    .container-fluid         responsive  
  
Syntax:  
    <div class="container-fluid">  
    </div>  
  
2. Margin Classes  
  
    .m-{size}         all directions size can be 1 to 4   ( m-4 )  
    .ms-{ }       left [start]   
    .me-{ }         right [end]  
    .mx-{ }         left and right  
    .mt-{ }         top  
    .mb-{ }         bottom  
    .my-{ }         top and bottom  
  
3. Padding Classes  
     
    .p-{ }  
    .ps-{ }  
    .pe-{ }  
    .px-{ }  
    .pt-{ }  
    .pb-{ }  
    .py-{ }  
  
4. Border Classes  
  
    .border  
    .border-{size}          
    .border-{contextual}   success, danger, warning, info, primary, dark etc..  
  
5. Border Radius  
  
    .rounded  
    .rounded-{size}  
    .rounded-circle  
    .rounded-pill  
  
Syntax:  
    <div class="border border-2 border-danger rounded rounded-3>  
    </div>  
  
6. Width  
    .w-{size}        size can be 0, 25, 50, 100  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Bootstrap</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
    <div class="mt-4">  
        <img class="rounded rounded-circle border border-4 border-info" src="../public/images/women-fashion.jpg" width="200" height="200">  
    </div>  
    <div class="border border-4 border-danger mt-4 ps-4 pt-4 rounded rounded-4 w-25">  
        <h2>Bootstrap</h2>  
        <dl>  
            <dt>Components</dt>  
            <dd>Carousel</dd>  
            <dd class="my-2">Navbar</dd>  
            <dd>Offcanvas</dd>  
            <dt>Classes</dt>  
            <dd>Background</dd>  
            <dd>Position</dd>  
            <dd>Display</dd>  
        </dl>  
    </div>  
</body>  
</html>  
     
7. Background and Text Colors  
     
    .bg-{contextual}  
    .text-{contextual}  
  
Syntax:  
    <div class="bg-danger text-light"> </div>  
  
8. Text Alignments  
  
    .text-center  
    .text-start  
    .text-end  
    .text-justify  
  
9. Font Style and Weight  
  
    .fw-bold  
    .fst-italic  
    .fs-{size}      font size  1 to 7  
    .h{size}      heading size 1 to 6            <div class="h5"> </div>  
  
Syntax:  
    <p class="fs-3 fw-bold fst-italic text-center"> </p>  
  
  
10. Display  
  
    .d-none  
    .d-block  
    .d-inline  
    .d-inline-block  
    .d-flex  
    .flex-direction-row | column  
    .flex-wrap  
    .justify-content-baseline  
    .justify-content-center  
    .jusitfy-content-end  
    .align-items-baseline  
    .align-items-center  
    .align-items-end  
    .justify-content-evenly  
    .justify-content-between  
    .justify-content-around  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Bootstrap</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
    <style>  
        body {  
            height: 100vh;  
        }  
    </style>  
</head>  
<body class="container-fluid d-flex justify-content-center align-items-center">  
    <div class="mt-4">  
        <img class="rounded rounded-circle border border-4 border-info" src="../public/images/women-fashion.jpg" width="200" height="200">  
    </div>  
</body>  
</html>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Bootstrap</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
    <style>  
        body {  
            height: 100vh;  
        }  
    </style>  
</head>  
<body class="container-fluid">  
     <div class="mt-4">  
        <button class="d-block w-25">Insert</button>  
        <button class="d-block my-3 w-25">Update</button>  
        <button class="d-block w-25">Delete</button>  
     </div>  
</body>  
</html>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Bootstrap</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
    <style>  
        body {  
            height: 100vh;  
        }  
        .h4 {  
            font-family: Arial Black;  
        }  
    </style>  
</head>  
<body class="container-fluid">  
     <header class="border bg-dark text-white border-2 border-dark p-3 mt-3 d-flex justify-content-between">  
        <div class="h4">Shopper</div>  
        <nav class="fs-5">  
            <span>Home</span>  
            <span class="mx-3">Pages</span>  
            <span>Shop</span>  
            <span class="mx-3">Docs</span>  
            <span>Blog</span>  
        </nav>  
        <div class="fs-5">  
            <span class="bi bi-person"></span>  
            <span class="bi bi-heart mx-4"></span>  
            <span class="bi bi-cart3"></span>  
        </div>  
    </header>  
</body>  
</html>

11. Button Classes  
  
    .btn [base class]  
    .btn-{contextual}  
    .btn-sm|lg  
    .btn-outline-{contextual}  
    .btn-group  
    .btn-group-vertical  
    .btn-toolbar  
    .btn-close  
    .btn-link  
  
Syntax:  
    <button class="btn btn-primary">  
    <nav class="btn-toolbar">  
    <div class="btn-group">  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Bootstrap</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
    <style>  
         
    </style>  
</head>  
<body class="container-fluid">  
     <dl class="mt-4">  
        <dt>Amazon</dt>  
        <dd>  
            <button class="btn btn-secondary w-100">Back to top</button>  
        </dd>  
        <dt>Toolbar</dt>  
        <dd>  
            <nav class="btn-toolbar bg-danger justify-content-between">  
                <div>  
                    <button class="btn btn-danger">Shopper</button>  
                </div>  
                <div>  
                    <button class="btn btn-danger">Home</button>  
                    <button class="btn btn-danger">Shop</button>  
                    <button class="btn btn-danger">Pages</button>  
                    <button class="btn btn-danger">Docs</button>  
                    <button class="btn btn-danger">Blog</button>  
                </div>  
                <div>  
                    <button class="bi bi-person btn btn-danger"></button>  
                    <button class="bi bi-heart btn btn-danger"></button>  
                    <button class="bi bi-cart btn btn-danger"></button>  
                </div>  
            </nav>  
        </dd>  
        <dt>Button Base</dt>  
        <dd><button class="btn">Submit</button></dd>  
        <dt>Contextual</dt>  
        <dd>  
            <button class="btn btn-primary">Insert</button>  
            <button class="btn btn-success">Update</button>  
            <button class="btn btn-danger">Delete</button>  
        </dd>  
        <dt>Outline Contextual</dt>  
        <dd>  
            <button class="btn btn-outline-primary">Insert</button>  
            <button class="btn btn-outline-success">Update</button>  
            <button class="btn btn-outline-danger">Delete</button>  
        </dd>  
        <dt>Size</dt>  
        <dd>  
            <button class="btn btn-primary">Ordinary</button>  
            <button class="btn btn-primary btn-sm">Small</button>  
            <button class="btn btn-primary btn-lg">Large</button>  
        </dd>  
        <dt>Button Group</dt>  
        <dd class="btn-group-vertical">  
            <button class="bi bi-play btn btn-danger"></button>  
            <button class="bi bi-pause btn btn-danger"></button>  
            <button class="bi bi-stop btn btn-danger"></button>  
        </dd>  
        <dt>Special</dt>  
        <dd>  
            <button class="btn btn-close"></button>  
            <button class="btn btn-link">Signout</button>  
        </dd>  
     </dl>  
</body>  
</html>      
  
12. Form Classes  
  
     .form-control    text, number, password, url, date, email, textarea ..  
    .form-select    dropdown, listbox  
    .form-range    range input  
    .form-control-color    color  
    .form-control-file    file  
    .form-check-input    radio, checkbox  
    .form-check-label    label for checkbox & radio  
    .form-switch    radio and checkbox container  
    .form-label    label  
  
Syntax:  
    <input type="text" class="form-control">  
    <label class="form-label">  
    <input type="range" class="form-range">  
    <select class="form-select">  
  
    <div class="form-switch">  
       <input type="checkbox" class="form-check-input">  
    </div>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Form</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid d-flex justify-content-center">  
    <form class="mt-4 w-25 bg-dark text-white border border-1 p-3 rounded border-dark">  
        <div class="h4 bi bi-person-fill"> Register New User</div>  
        <div>  
            <label class="form-label" for="UserName">User Name</label>  
            <div>  
                <input type="text" name="UserName" class="form-control">  
            </div>  
        </div>  
        <div class="my-3">  
            <label class="form-label" for="Password">Password</label>  
            <div>  
                <input type="password" class="form-control" name="Password">  
            </div>  
        </div>  
        <div class="my-3">  
            <label class="form-label" for="Price">Price</label>  
            <div>  
                <input type="range" class="form-range" name="Price">  
            </div>  
        </div>  
        <div class="my-3">  
            <label for="City" class="form-label">Your City</label>  
            <div>  
                <select name="City" class="form-select">  
                    <option>Select City</option>  
                    <option>Delhi</option>  
                    <option>Hyd</option>  
                </select>  
            </div>  
        </div>  
        <div class="my-2">  
            <label class="form-label">Subscribe</label>  
            <div class="form-switch">  
                <input type="checkbox" class="form-check-input" checked > <label class="form-check-label"> Yes </label>  
            </div>  
        </div>  
        <div>  
            <button class="btn btn-primary w-100">Register</button>  
        </div>  
    </form>  
</body>  
</html>  
  
  
13. Input Group Classes  
  
    .input-group  
    .input-group-sm | lg  
    .input-group-text  
  
Syntax:  
    <div class="input-group">  
           <span class="input-group-text"> Text </span>  
           <input type="text" class="form-control">  
    </div>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Input Group</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
    <h2>Amazon</h2>  
    <div class="w-50 input-group">  
        <select class="input-group-text">  
            <option>All</option>  
            <option>Mobiles</option>  
            <option>Fashion</option>  
        </select>  
        <input type="text" class="form-control" placeholder="Search Amazon.in">  
        <button class="bi bi-search btn btn-warning"></button>  
    </div>  
    <h2>Netflix</h2>  
    <div class="w-50 input-group input-group-lg p-4 bg-dark">  
        <input type="email" placeholder="Your email address" class="form-control">  
        <button class="btn  btn-danger">  
            Get Started <span class="bi bi-chevron-right"></span>  
        </button>  
    </div>  
    <h3>Login</h3>  
    <div class="w-25 input-group">  
        <span class="bi bi-person-fill input-group-text"></span>  
        <input type="text" class="form-control" placeholder="User Name">  
        <span class="bi bi-check-square input-group-text"></span>  
    </div>  
    <div class="w-25 mt-3 input-group">  
        <span class="bi bi-key-fill input-group-text"></span>  
        <input type="password" class="form-control" placeholder="Password">  
        <span class="bi bi-check-square input-group-text"></span>  
    </div>  
    <div class="w-25 mt-3 input-group">  
        <span class="bi bi-envelope input-group-text"></span>  
        <input type="email" class="form-control" placeholder="your email">  
        <span class="input-group-text">@gmail.com</span>  
    </div>  
</body>  
</html>  
  
14. Table Classes  
  
    .table  
    .table-hover  
    .table-bordered  
    .table-borderless  
    .table-striped  
    .table-responsive  
    .table-{contextual}  
    .caption-top   
Syntax:  
    <div class="table-responsive">  
        <table class="table table-hover table-dark">  
        </table>  
    </div>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Table</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
    <h2>Table</h2>  
    <div class="table-responsive">  
        <table class="table table-striped table-dark table-hover caption-top">  
            <caption>Product Details Update on 12 Sep 2024 </caption>  
            <thead>  
                <tr>  
                    <th>Name</th>  
                    <th>Price</th>  
                    <th>Stock</th>  
                    <th>Rating</th>  
                    <th>Name</th>  
                    <th>Price</th>  
                    <th>Stock</th>  
                    <th>Rating</th>  
                    <th>Name</th>  
                    <th>Price</th>  
                    <th>Stock</th>  
                    <th>Rating</th>  
                    <th>Name</th>  
                    <th>Price</th>  
                    <th>Stock</th>  
                    <th>Rating</th>  
                    <th>Name</th>  
                    <th>Price</th>  
                    <th>Stock</th>  
                    <th>Rating</th>  
                    <th>Price</th>  
                    <th>Stock</th>  
                    <th>Rating</th>  
                    <th>Name</th>  
                    <th>Price</th>  
                    <th>Stock</th>  
                    <th>Rating</th>  
                </tr>  
            </thead>  
            <tbody>  
                <tr>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                </tr>  
                <tr>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                </tr>  
                <tr>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                </tr>  
                <tr>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                    <td>&nbsp;</td>  
                </tr>  
            </tbody>  
        </table>  
    </div>  
</body>  
</html>  
  
15. Cards  
  
    .card  
    .card-header  
    .card-body  
    .card-footer  
    .card-img-top  
    .card-img-bottom  
    .card-img-overlay  
    .card-title  
    .card-subtitle  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Cards</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
    <style>  
        .card {  
            width: 200px;  
        }  
    </style>  
</head>  
<body class="container-fluid">  
    <div class="d-flex">  
       <div class="card m-4 p-2">  
          <img src="../public/images/java.png" height="120" class="card-img-top">  
          <div class="card-header">  
             <div class="card-title fs-5 fw-bold">Java</div>  
             <div class="card-subtitle">Fullstack</div>  
          </div>  
          <div class="card-body">  
               <ul>  
                 <li>Core Java</li>  
                 <li>Spring</li>  
                 <li>Adv. Java</li>  
               </ul>  
          </div>  
          <div class="card-footer">  
            <button class="btn btn-warning w-100">Join Course</button>  
          </div>  
       </div>  
  
  
       <div class="card m-4 p-2">  
        <img src="../public/images/ds.png" height="120" class="card-img-top">  
        <div class="card-header">  
           <div class="card-title fs-5 fw-bold">Java</div>  
           <div class="card-subtitle">Fullstack</div>  
        </div>  
        <div class="card-body">  
             <ul>  
               <li>Core Java</li>  
               <li>Spring</li>  
               <li>Adv. Java</li>  
             </ul>  
        </div>  
        <div class="card-footer">  
          <button class="btn btn-warning w-100">Join Course</button>  
        </div>  
     </div>  
  
  
     <div class="card m-4 p-2">  
        <img src="../public/images/django.png" height="120" class="card-img-top">  
        <div class="card-header">  
           <div class="card-title fs-5 fw-bold">Java</div>  
           <div class="card-subtitle">Fullstack</div>  
        </div>  
        <div class="card-body">  
             <ul>  
               <li>Core Java</li>  
               <li>Spring</li>  
               <li>Adv. Java</li>  
             </ul>  
        </div>  
        <div class="card-footer">  
          <button class="btn btn-warning w-100">Join Course</button>  
        </div>  
     </div>  
    </div>  
</body>  
</html>

Bootstrap Components  
  
- Components are rich in design, styles and functionality.  
- You can customize and reuse across pages.  
- You can rapidly build interactive design with components.  
  
1. Alert  
- It is an embedded message box in page.  
- It can display message dynamically and close explicitly.  
  
Classes:  
    .alert  
    .alert-{contextual}  
    .alert-dismissible  
    .alert-title  
    .alert-link  
  
Attribute:  
    data-bs-dismiss    : It is used to close the component.  
              It refers to component name.  
              It is defined for clickable elements.  
  
    <button data-bs-dismiss="alert">  </button>  
  
    It will close the alert on button click.  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Alert</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
    <h2>Alerts</h2>  
    <aside class="alert alert-dismissible w-25 alert-success">  
        <button class="btn btn-close" data-bs-dismiss="alert"></button>  
        <img src="../public/images/a10.jpg" width="100" height="100">  
        <p>Home accessories 20% off</p>  
    </aside>  
    <div class="alert alert-danger alert-dismissible">  
        <button class="btn btn-close" data-bs-dismiss="alert"></button>  
        <h2 class="alert-title">Delete Record</h2>  
        <p>Record deleted successfully..</p>  
        <a href="#" class="alert-link">Help?</a>  
    </div>  
    <div class="alert alert-success alert-dismissible">  
        <h2>Registered successfully..</h2>  
        <p>Please active your account from email.</p>  
        <button data-bs-dismiss="alert" class="btn btn-success">OK</button>  
    </div>  
</body>  
</html>      
  
2. Modal  
- It shows a pop-up dialog box.  
- It keeps the content in backdrop.  
- It allows to open and close dynamically.  
- It can close on backdrop.  
  
Classes:  
    .modal  
    .modal-dialog  
    .modal-content  
    .modal-header  
    .modal-body  
    .modal-footer  
    .modal-dialog-centered  
    .modal-fullscreen  
    .modal-dialog-scrollable  
  
Syntax:  
    <div class="modal">  
      <div class="modal-dialog">  
        <div class="modal-content">  
             ... header ...  
             ... body...  
             ... footer...  
        </div>  
       </div>  
    </div>  
  
Attributes:  
    data-bs-dismiss        : to close  
    data-bs-toggle        : It defines component to open on click  
    data-bs-target        : It defines which component to open.  
                  It refers to "id" of component.  
  
Syntax:  
    <div class="modal"  id="login">  
    </div>  
  
    <button  data-bs-toggle="modal"  data-bs-target="#login">  
    <a href="#login" data-bs-toggle="modal">  
  
- You can apply "fade" class for modal animation.  
  
    <div class="modal fade"> </div>  
  
- Dialog styles are defined in dialog area  
  
    <div class="modal-dialog modal-dialog-centered | modal-fullscreen">  
    </div>  
  
Note: Bootstrap 5+ versions have disabled nested modals. You can't open a modal  
          from another model.  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Modal</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
   <button class="btn btn-primary mt-2" data-bs-toggle="modal" data-bs-target="#login">Login</button>  
   <a data-bs-toggle="modal" href="#offers" class="btn btn-warning mt-2">Offers</a>  
   <div class="modal fade" id="login">  
      <div class="modal-dialog modal-dialog-centered modal-dialog-scrollable">  
         <div class="modal-content">  
            <div class="modal-header">  
                <h3 class="bi bi-person-fill"> User Login</h3>  
                <button data-bs-dismiss="modal" class="btn btn-close"></button>  
            </div>  
            <div class="modal-body">  
                <dl>  
                    <dt>User Name</dt>  
                    <dd><input type="text" class="form-control"></dd>  
                    <dt>Password</dt>  
                    <dd><input type="password" class="form-control"></dd>  
                    <dt>User Name</dt>  
                    <dd><input type="text" class="form-control"></dd>  
                    <dt>Password</dt>  
                    <dd><input type="password" class="form-control"></dd>  
                    <dt>User Name</dt>  
                    <dd><input type="text" class="form-control"></dd>  
                    <dt>Password</dt>  
                    <dd><input type="password" class="form-control"></dd>  
                    <dt>User Name</dt>  
                    <dd><input type="text" class="form-control"></dd>  
                    <dt>Password</dt>  
                    <dd><input type="password" class="form-control"></dd>  
                </dl>  
            </div>  
            <div class="modal-footer">  
                <button class="btn btn-warning">Login</button>  
                <button class="btn btn-danger ms-2" data-bs-dismiss="modal">Cancel</button>  
            </div>  
         </div>  
      </div>  
   </div>  
  
  
   <div class="modal fade" id="offers">  
      <div class="modal-dialog modal-dialog-centered">  
        <div class="modal-content">  
            <div class="modal-header">  
                <h2>Festival SALE</h2>  
                <button class="btn btn-close" data-bs-dismiss="modal"></button>  
            </div>  
            <div class="modal-body mt-4 d-flex justify-content-center">  
                <div>  
                    <img src="../public/images/a7.jpg" width="150" height="150">  
                    <button class="btn btn-dark bi bi-eye mt-2">View Offer</button>  
                </div>  
                <div>  
                    <img src="../public/images/a8.jpg" width="150" height="150">  
                    <button class="btn btn-dark bi bi-eye mt-2">View Offer</button>  
                </div>  
                <div>  
                    <img src="../public/images/a9.jpg" width="150" height="150">  
                    <button class="btn btn-dark bi bi-eye mt-2">View Offer</button>  
                </div>  
            </div>  
        </div>  
      </div>  
   </div>  
</body>  
</html>  
  
3. Offcanvas  
- It is similar to modal but provides various orientations.  
- You can popup from left, right, top and bottom.  
- It keeps the content in backdrop.  
  
Classes:  
    .offcanvas  
    .offcanvas-header  
    .offcanvas-title  
    .offcanvas-body  
    .offcanvas-start  
    .offcanvas-end  
    .offcanvas-top  
    .offcanvas-bottom  
  
Attributes:  
    data-bs-target  
    data-bs-toggle  
    data-bs-dismiss  
  
Syntax:  
    <div class="offcanvas offcanvas-start">  
       <div class="offcanvas-header">  
       </div>  
       <div class="offcanvas-body">  
       </div>  
    </div>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Modal</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
    <div class="btn-toolbar p-2 bg-dark justify-content-between">  
        <div>  
            <button data-bs-target="#menu" data-bs-toggle="offcanvas" class="bi btn btn-light bi-justify fs-4"></button>  
            <span class="fs-4 text-white ms-3">Shopper.</span>  
        </div>  
        <div>  
            <button data-bs-toggle="offcanvas" data-bs-target="#settings" class="bi bi-gear-fill btn btn-light"></button>  
        </div>  
    </div>  
    <div class="offcanvas offcanvas-start" id="menu">  
        <div class="offcanvas-header bg-dark text-white">  
            <h2>Shopper.</h2>  
            <button class="btn btn-close btn-close-white" data-bs-dismiss="offcanvas"></button>  
        </div>  
        <div class="offcanvas-body">  
            <ul>  
                <li>Home</li>  
                <li>Electronics</li>  
                <li>Fashion</li>  
                <li>Footwear</li>  
            </ul>  
        </div>  
    </div>  
    <div class="offcanvas offcanvas-bottom" id="settings">  
        <div class="offcanvas-header">  
            <button class="btn btn-close" data-bs-dismiss="offcanvas"></button>  
        </div>  
        <div class="offcanvas-body d-flex justify-content-around">  
            <button class="bi fs-1  bi-brightness-high btn btn-lg"></button>  
            <button class="bi fs-1  bi-tv-fill btn btn-lg"></button>  
            <button class="bi fs-1  bi-bell-fill btn btn-lg"></button>  
        </div>  
    </div>  
</body>  
</html>  
  
4. Collapse  
- It is used to display or hide any content dynamically.  
  
Classes:  
    .collapse  
    .show  
  
Attributes:  
    data-bs-target  
    data-bs-toggle  
Ex:  
  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Modal</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
    <h1 class="text-primary text-center">Frequently Asked Questions</h1>  
    <button data-bs-toggle="collapse" data-bs-target="#q1" class="btn btn-dark w-100"> What is Netflix? </button>  
    <div class="collapse bg-dark text-white p-2 mt-2" id="q1">  
        <p>Lorem ipsum, dolor sit amet consectetur adipisicing elit. Totam inventore harum dolores beatae facere nostrum similique eos porro voluptates in, alias dolorem magni, aut omnis cupiditate! Voluptas reiciendis totam pariatur! Lorem ipsum dolor sit, amet consectetur adipisicing elit. Dolorem illum, iure exercitationem obcaecati adipisci nobis vero optio autem perspiciatis animi quia voluptates ea sapiente vel nihil nam atque expedita reprehenderit!</p>  
        <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Et porro provident nobis itaque, aliquam tenetur odio libero placeat nihil accusantium qui reprehenderit eos ut excepturi maxime quaerat! Distinctio, veniam vitae? Lorem ipsum dolor sit amet consectetur adipisicing elit. Corporis commodi, aliquam hic consequatur minima ab odio tempore possimus reiciendis sapiente quis eligendi voluptas totam perspiciatis numquam sit vero, est assumenda!</p>  
    </div>  
    <button class="btn btn-dark w-100 mt-2" data-bs-target="#q2" data-bs-toggle="collapse">How much does Netflix cost?</button>  
    <div class=" collapse bg-dark p-2 text-white mt-2" id="q2">  
        <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Asperiores voluptatem architecto sunt voluptate, voluptates corporis ducimus corrupti modi ipsum fugiat dignissimos! Repellat molestias dignissimos necessitatibus quam molestiae repudiandae debitis possimus!</p>  
    </div>  
</body>  
</html>

Summary - Components  
1. Alert  
2. Modal  
3. Offcanvas  
4. Collapse  
  
5. Accordion  
- It is a combination of multiple items with collapse and show.  
- It uses mutex mechanism.  
- It can collapse all other items when one is expanded.  
  
Classes:  
    .accordion  
    .accordion-item  
    .accordion-header  
    .accordion-body  
    .accordion-button  
    .accordion-collapse  
  
Attributes:  
    data-bs-toggle  
    data-bs-target  
    data-bs-parent  [It is defined for collapse to configure mutex]  
                 [All collapse must use the same parent]  
  
Syntax:  
    <div class="accordion"  id="faq">  
        <div class="accordion-item">  
           <div class="accordion-header">  
          </div>  
          <div class="accordion-collapse" data-bs-parent="#faq">  
              <div class="accordion-body">  
              </div>  
          </div>  
    </div>  
               </div>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Accordion</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
   <h1 class="text-center">Frequently Asked Questions</h1>  
   <div class="accordion" id="faqs">  
        <div class="accordion-item">  
            <div class="accordion-header">  
                <button data-bs-target="#q1" data-bs-toggle="collapse" class="accordion-button">What is Netflix?</button>  
            </div>  
            <div class="accordion-collapse collapse" id="q1" data-bs-parent="#faqs">  
                <div class="accordion-body">  
                    <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Praesentium neque quia ullam ratione dicta alias labore beatae quis, aliquid soluta. Inventore amet provident accusamus sed rerum eius earum quasi reprehenderit. Lorem ipsum dolor sit amet consectetur adipisicing elit. Nihil hic quaerat, id minus, error obcaecati fugiat tempora praesentium deserunt voluptatum, provident excepturi iusto eos. Tempore repudiandae dolorem adipisci qui consequuntur.</p>  
                    <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Autem facere quibusdam, quam reprehenderit saepe vitae iusto dolorum nemo ullam aliquid perferendis, animi modi quae blanditiis, eligendi consectetur beatae tenetur deleniti.</p>  
                </div>  
            </div>  
        </div>  
        <div class="accordion-item">  
            <div class="accordion-header">  
                <button data-bs-target="#q2" data-bs-toggle="collapse" class="accordion-button">How much does Netflix cost?</button>  
            </div>  
            <div class="accordion-collapse collapse" id="q2" data-bs-parent="#faqs">  
                <div class="accordion-body">  
                    <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Officiis blanditiis impedit doloremque mollitia, non cum repellat animi explicabo, dolor minima laborum cumque consequuntur error corporis quisquam dolores et, reiciendis porro?</p>  
                    <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Maxime ipsam soluta temporibus earum itaque ullam perspiciatis dignissimos facere. Eaque cumque ratione vel libero placeat obcaecati illo officiis iste odit repudiandae?</p>  
                </div>  
            </div>  
        </div>  
   </div>  
</body>  
</html>  
  
6. Carousel  
- It is used to configure sliding and fading content in page.  
- You can customize with manual and auto control.  
  
Basic Carousel Classes:  
  
    .carousel  
    .carousel-inner  
    .carousel-item  
  
Syntax:  
    <div class="carousel">  
       <div class="carousel-inner">  
           <div class="carousel-item">  
        // any content  
           </div>  
       </div>  
    </div>  
  
- Carousel will not display any item on screen. You must set any one item as "active".  
  
    <div class="carousel-item active">  
    </div.  
  
- Carousel can't start implicitly, you have to start carousel by using the attribute  
"data-bs-ride".  
  
    <div class="carousel"  data-bs-ride="carousel">  
    </div>  
  
- Carousel requires "slide" class to define slide animation.  
  
    <div class="carousel slide">  
    </div>  
  
- You can also configure "carousel-fade" class to set fading effect.  
  
    <div class="carousel carousel-fade">  
    </div>  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Carousel</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
    <div class="carousel slide" id="banners" data-bs-ride="carousel">  
        <div class="carousel-inner">  
            <div class="carousel-item active ">  
                <img height="300" src="../public/images/slide-1.JPG" class="w-100 d-block">  
            </div>  
            <div class="carousel-item">  
                <img height="300" src="../public/images/slide-2.JPG" class="w-100 d-block">  
            </div>  
            <div class="carousel-item">  
                <img height="300" src="../public/images/slide-3.JPG" class="w-100 d-block">  
            </div>  
        </div>  
    </div>  
</body>  
</html>  
  
Carousel with Controls:  
- Controls can be defined to handle navigation between items.  
- You can allow previous or next item navigation.  
  
Classes:  
    carousel-control-prev  
    carousel-control-prev-icon  
    carousel-control-next  
    carousel-control-next-icon  
  
Attributes:  
    data-bs-target  
    data-bs-slide="prev | next"  
  
- You can set "carousel-dark" as class to apply dark controls.  [obsolete]  
- The new option for dark controls is "data-bs-theme=dark".  
  
    <div class="carousel" data-bs-theme="dark">  
    </div>  
  
- Controls require functionality to define  
  
    <button data-bs-slide="prev" data-bs-target="#carousel\_id">  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Carousel</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
    <div class="carousel slide" id="banners" data-bs-ride="carousel">  
        <div class="carousel-inner">  
            <div class="carousel-item active ">  
                <img height="300" src="../public/images/slide-1.JPG" class="w-100 d-block">  
            </div>  
            <div class="carousel-item">  
                <img height="300" src="../public/images/slide-2.JPG" class="w-100 d-block">  
            </div>  
            <div class="carousel-item">  
                <img height="300" src="../public/images/slide-3.JPG" class="w-100 d-block">  
            </div>  
        </div>  
        <button class="carousel-control-prev" data-bs-slide="prev" data-bs-target="#banners">  
            <span class="carousel-control-prev-icon"></span>  
        </button>    
        <button class="carousel-control-next" data-bs-slide="next" data-bs-target="#banners">  
            <span class="carousel-control-next-icon"></span>  
        </button>  
    </div>  
</body>  
</html>  
  
Carousel with Indicators:  
- Indicators are used to design random navigation between items in carousel.  
- User can select any item directly to navigate.  
- It is a collection of items defined with "carousel-indicators" class.  
  
Syntax:  
    <div class="carousel-indicators">  
           <button></button>  
           <button></button>    every button refers to an item  
            ....  
    </div>  
  
        (or)  
    <ul class="carousel-indicators">  
      <li> </li>  
      <li> </li>  
    </ul>  
  
- Every indicator button requires the attributes to define  
  
    data-bs-slide-to="indexNumber"  
    data-bs-target="#carousel\_id"  
  
       <button data-bs-slide-to="0" data-bs-target="#banners">  
  
- Make sure that any one indicator button is set to active. It must map with the item that is active.  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Carousel</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
    <div class="carousel slide" id="banners" data-bs-ride="carousel">  
        <div class="carousel-inner">  
            <div class="carousel-item active ">  
                <img height="300" src="../public/images/slide-1.JPG" class="w-100 d-block">  
            </div>  
            <div class="carousel-item">  
                <img height="300" src="../public/images/slide-2.JPG" class="w-100 d-block">  
            </div>  
            <div class="carousel-item">  
                <img height="300" src="../public/images/slide-3.JPG" class="w-100 d-block">  
            </div>  
        </div>  
        <button class="carousel-control-prev" data-bs-slide="prev" data-bs-target="#banners">  
            <span class="carousel-control-prev-icon"></span>  
        </button>    
        <button class="carousel-control-next" data-bs-slide="next" data-bs-target="#banners">  
            <span class="carousel-control-next-icon"></span>  
        </button>  
        <div class="carousel-indicators">  
            <button class="active" data-bs-slide-to="0" data-bs-target="#banners"></button>  
            <button data-bs-slide-to="1" data-bs-target="#banners"></button>  
            <button data-bs-slide-to="2" data-bs-target="#banners"></button>  
        </div>  
    </div>  
</body>  
</html>  
  
Carousel Items with Timing:  
- You can control the timing of every item by using the attribute "data-bs-interval".  
- It refers to milliseconds. [1000ms = 1sec]  
  
Syntax:  
    <div class="carousel-item" data-bs-interval="3000">  
    </div>  
  
  
Ex:  
<!DOCTYPE html>  
<html lang="en">  
<head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <title>Carousel</title>  
    <link rel="stylesheet" href="../node\_modules/bootstrap-icons/font/bootstrap-icons.css">  
    <link rel="stylesheet" href="../node\_modules/bootstrap/dist/css/bootstrap.css">  
    <script src="../node\_modules/bootstrap/dist/js/bootstrap.bundle.js"></script>  
</head>  
<body class="container-fluid">  
    <div class="carousel slide" id="banners" data-bs-ride="carousel">  
        <div class="carousel-inner">  
            <div class="carousel-item active" data-bs-interval="4000">  
                <img height="300" src="../public/images/slide-1.JPG" class="w-100 d-block">  
            </div>  
            <div class="carousel-item"  data-bs-interval="1000">  
                <img height="300" src="../public/images/slide-2.JPG" class="w-100 d-block">  
            </div>  
            <div class="carousel-item" data-bs-interval="6000">  
                <img height="300" src="../public/images/slide-3.JPG" class="w-100 d-block">  
            </div>  
        </div>  
        <button class="carousel-control-prev" data-bs-slide="prev" data-bs-target="#banners">  
            <span class="carousel-control-prev-icon"></span>  
        </button>    
        <button class="carousel-control-next" data-bs-slide="next" data-bs-target="#banners">  
            <span class="carousel-control-next-icon"></span>  
        </button>  
        <div class="carousel-indicators">  
            <button class="active" data-bs-slide-to="0" data-bs-target="#banners"></button>  
            <button data-bs-slide-to="1" data-bs-target="#banners"></button>  
            <button data-bs-slide-to="2" data-bs-target="#banners"></button>  
        </div>  
    </div>  
</body>  
</html>  
  
                  Navbars