# HTML,CSS

Agenda

1. Fundamentals

2. HTML

3. CSS

4. JavaScript

5. QnA

APPLICATION

- It is a Program that runs based on the operating system.

- Program is a collection of statements (instructions) to the system.

- For example, a statement instructs the computer to store a value, Another statement instructs the computer to do addition of numbers

- **Examples** : Notepad, MS Word, Google, Facebook, Flipkart etc.

- Types of Applications:

  - Windows Applications
 - Forms Applications
  - Web Applications

WEB APPLICATION

- In computing, a web application or web app is a client–server computer program that the client (including the user interface and client-side logic) runs in a web browser. Common web applications include webmail, online retail sales, online banking, and online auctions.

- It is a set of programs that are running on the browser to interact with the user.

- It is responsible to store information temporarily.

- It is responsible to interact with server. i.e., sending request to server and get response from the server.
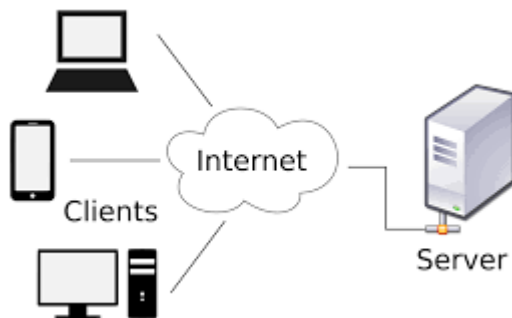
WEB APPLICATION

- Client

  - It is a machine or device (desktop, laptop, tablet, phone or Smart TV), which can access the data from Sever.

  - The device which is used by the user is called as "client"

- Server

  - a server is a computer program or a device that provides functionality for other programs or devices, called "clients".

  - A server is a computer that provides data to other computers. It may serve data to systems on a local area network (LAN) or a wide area network (WAN) over the Internet.
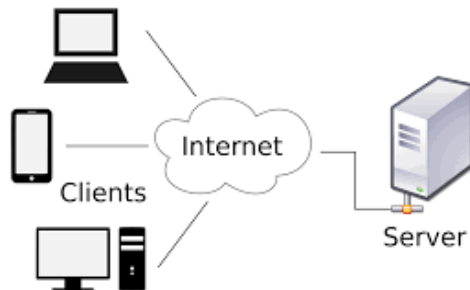
BROWSER

- It is software(tool) installed on the client, to see the output of the web page. User gives input in the browser and gets the output in the browser.

- The browser sends a request to server to get web page.

- Browser provides navigation among web pages.

- Browser executes the html,css, javascript programs and displays corresponding output to the user.

- Browsers are developed by different companies, For example, "Chrome" browser was developed by "Google" company.

    Important Browsers:

    - Google Chrome
    - Mozilla Firefox
    - Microsoft Internet Explorer
    - Microsoft Edge
    - Apple Safari
    - Opera

Types of Languages

Programming language: In a simple language programming languages are set of instructions or code which tells a computer what it needs to do. So basically, we provide a logic(loop or) or instruction to the computer to perform some task to get the desired output from it.

Scripting Language: As the name suggest, it's all about giving the script to perform some certain task. Scripting languages are basically the subcategory of programming languages which is used to give guidance to another program, or we can say to control another program, so it also involves instructions. It basically connects one language to one another languages and doesn't work standalone.

Markup Languages: Markup languages are completely different from programming languages and scripting languages. Markup languages prepare a structure for the data or prepare the look or design of a page. These are *presentational* languages, and it doesn't include any kind of logic or algorithm

Types of Languages
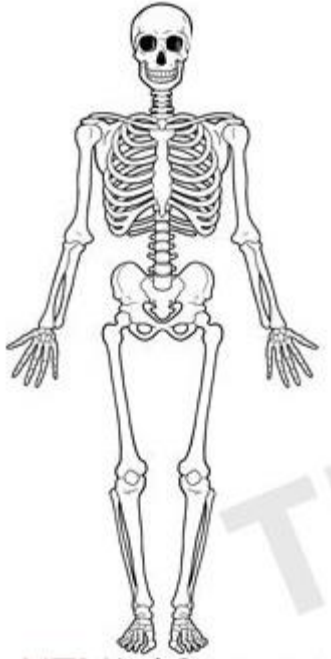
Programming languages

C
C++
C#
Java

Scripting languages

JavaScript
Php
Perl
VBScript

Markup Languages
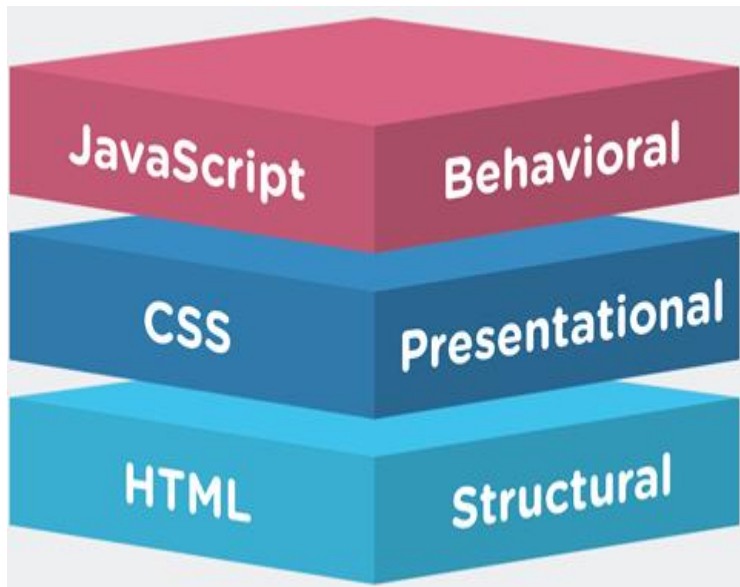
HTML
CSS
XML

HTML, CSS , JavaScript

HTML

CSS

JavaScript

Web Applications

JavaScript

an object-oriented computer programming language commonly used to create interactive effects within web browsers.
Origin

CSS

Stands for "Cascading Style Sheet." Cascading style sheets are used to format the layout of Web pages.
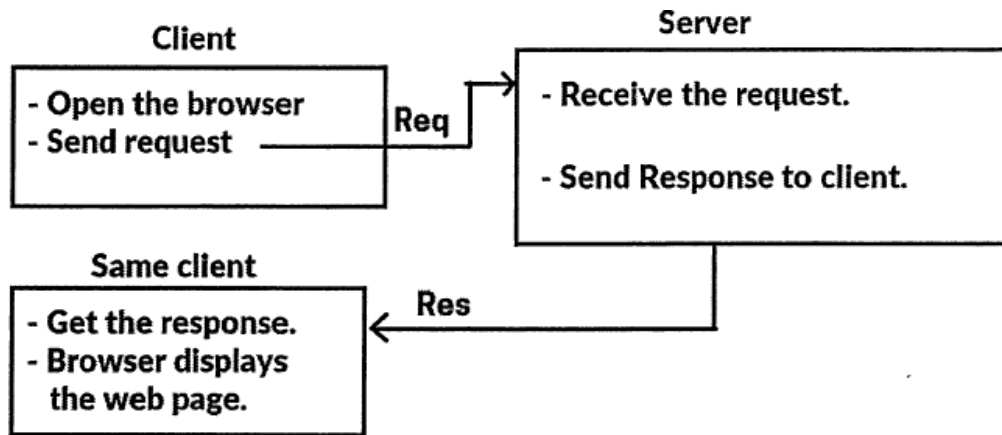
HTML

HTML (Hypertext Markup Language) is a text-based approach to describing how content contained within an HTML file is structured. This markup tells a web browser how to display the text, images and other forms of multimedia on a webpage.

HTML structure + CSS style + JS interaction = web page

HTML

HTTP

- Http Stands for "Hypertext Transfer Protocol"
- It is a protocol, which provides a set of rules to send request to server and get response form server.
- HTTP protocol defines "request format" and "response format"
- Http protocol defines HTTP status codes, Http Content Types etc.

Client

- Open the browser
- Send request

Req

Server

- Receive the request.
- Send Response to client.

Same client

- Get the response.
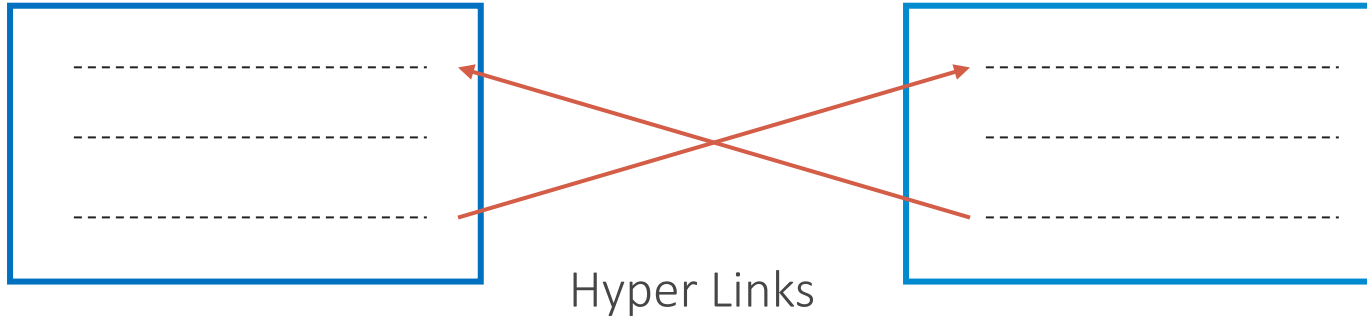- Browser displays the web page.

Res

HTTP

HTTP stands Hyper Text Transfer Protocol. Protocol is a language or mechanism for communication. HTTP is a way to exchange and communicate information online.

Client → Server

Hyper Text

Hyper Text

Hyper Text is structured form of Text. It contains logical links to other text. These Links are called Hyper Links.

Hyper Links

The common and popular way to write hyper text in a language is **HTML**(Hyper Text Markup Language)

HTML

In simple terms, a Web page (or HTML document) is a plain text file that has been encoded using Hypertext Markup Language (HTML) so that it appears **nicely formatted** in a Web browser. Here's what HTML means, word-by-word:

- *Hypertext* Text that you click to jump from document to document. This is a reference to the ability of Web pages to link to one another.
- *Markup* Tags that apply layout and formatting conventions to plain text. Literally, the plain text is "marked up" with the tags.
- *Language* A reference to the fact that HTML is considered a programming language.

HTTP

- HTML stands for "Hypertext Markup Language"

- "Hypertext" means "the text can be transformed from internet server to internet client".

- HTML is markup language. The markup language is a language, which syntax will be in the form of tags.

- HTML is used to design web pages. That means HTML is used to create elements (such as headings, paragraphs, icons , menus, logos, images, text boxes, buttons etc.) in the web pages.

- HTML is easy language to understand.

- HTML is "Client-Side Language". That means html code executes on the client (browser).

- HTML is supported by all the browsers such as Google Chrome, Mozilla Firefox, Microsoft Internet Explorer, Safari, Opera and Other browsers

- HTML is used developed by "Tim Berners-Lee" and maintained by "W3C"(World Wide Web).

- HTML is used in all real web sites today.

- The file extension should be ".html".

- HTML is the interpreter-based language. That means the HTML code will be converted into machine language in line-by-line manner. Browser Interprets HTML code.

- HTML is not case sensitive language. That means you can write the html code in either upper case or lower case.

HTML VERSIONS

| Version	Year
HTML 1.0	Nov 1991
HTML 2.0	Mar 1995
HTML 3.0	Jan 1997
HTML 4.0	Dec 1997
HTML 5.0	Oct 2014
HTML 5.1	Nov 2016
HTML 5.2	Dec 2017

Understanding HTML Tags

- Elements and Tags

  - HTML elements and tags work together to mark up content. HTML elements indicate the purpose of a tag and tags indicate the beginning and the end of an element.

  - The code within an HTML file consists of text surrounded by tags. These tags indicate where the formatting should be applied, how the layout should appear, what pictures should be placed in certain locations, and more.

  - For example, suppose you wanted a certain word to be italicized, like this:

    Everything is on sale.

  - In HTML, there's no Italics button to click, like there is in a word-processing program. Therefore, you have to "tag" the word that you want to be italicized. The code to turn on italics is <i>, and the code to turn italics off is </i>. Your HTML code would look something like this:

  - <i>Everything</i> is on sale

  - For example, here is a simple paragraph in HTML:

element   element

`<p>This is a paragraph.</p>`

opening tag   closing tag
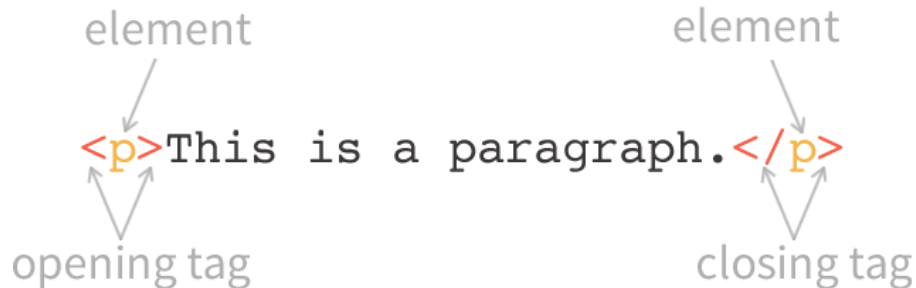
Understanding HTML Tags

- Tag :

    - A tag is a keyword, enclosed within "<" and ">" in HTML language
    - Tag is instruction/command to browser.
    - Tag is used to display some specific in the web page.

    - Syntax :

        <tag>

- Types of Tags

    1. Paired Tags : Contains opening tag and ending tag. The opening tag specifies starting point of the output. The closing tag specifies starting point of the output. The closing tag specifies end point of the output.

        Ex: <h1>hello</h1>

    2. Unpaired Tags: Contains single tag only (No separate ending tag). Eg: <hr/>

Syntax of HTML Program

- Every HTML program should have the following syntax:

```html
<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8" />
    <title>Page Title</title>
</head>
<body>
    <h1>Homepage Headline</h1>
    <p>This is a paragraph.</p>
</body>
</html>
```
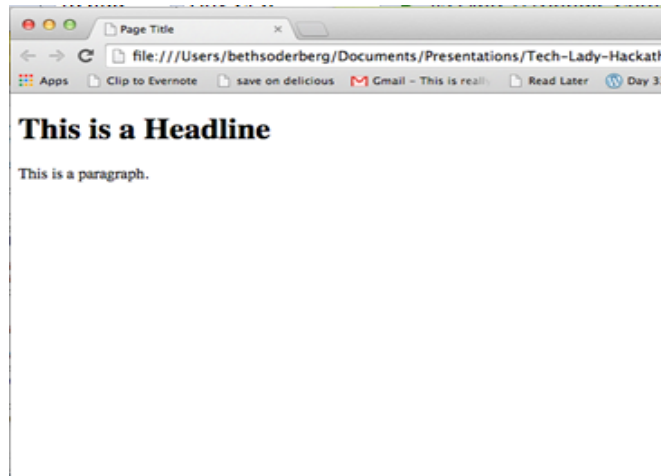

- The <html> tag represents starting and ending point of the HTML program. The <html> tag contains two child tags

    - Those are

    - <head>

    - <body>

- The <head> tag represents non-content information of the web page. The information that doesn't appear in the web page is called as "non-content".

- The <body> tag represents content information of the web page. The information that appears in the web page is called as "Content"

Basic HTML Page Structure
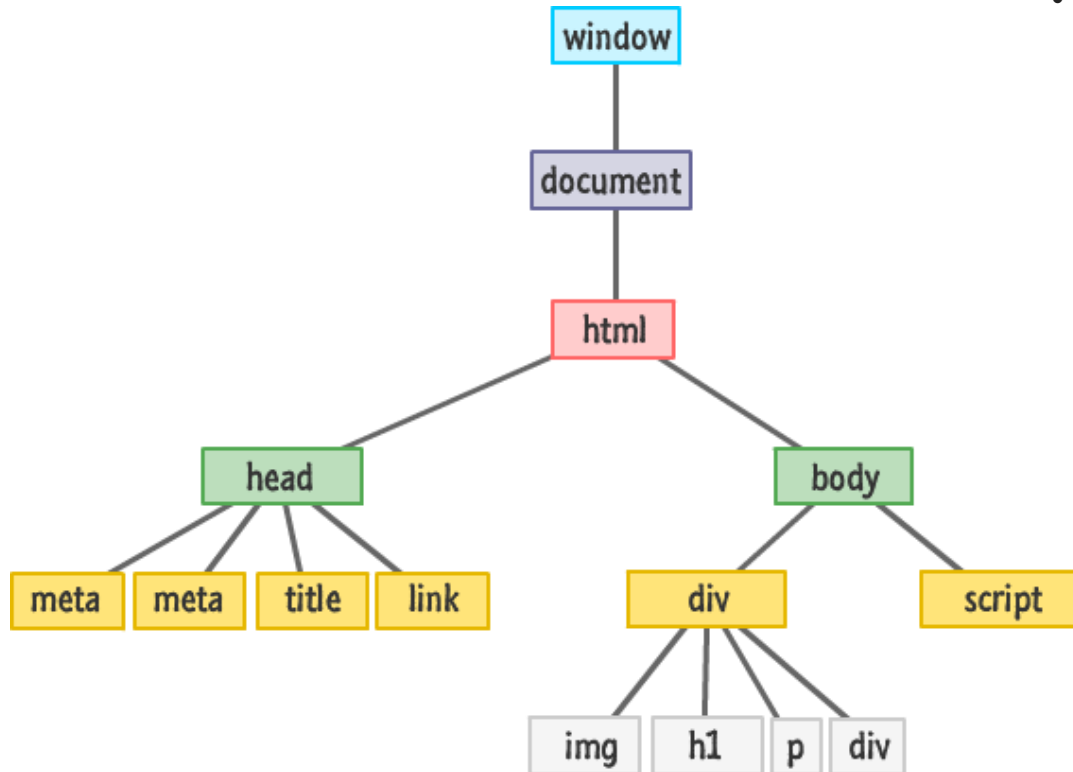
- HEAD ELEMENTS
  - \<base>
  - \<link>
  - \<meta>
  - \<noscript>
  - \<script>
  - \<style>
  - \<title> (required)

https://www.w3schools.com/tags/tag_p.asp

HTML Blocks

- Basic Tags in HTML

  - Headings
  - Paragraphs
  - Line Breaks

- Text Formatting Tags

  - Bold
  - Italic
  -

Steps to Prepare First Example in HTML

- Installing IDE

- Creating HTML Program

- Executing HTML Program

DOCTYPE

- DOCTYPE is a directive in HTML, which tells the browser about the version of HTML that you are using in the web page.
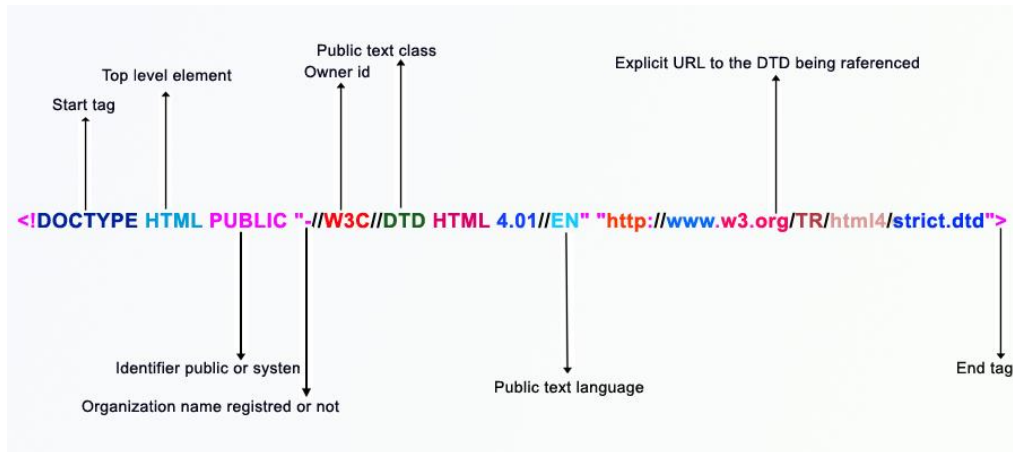
- Various versions of HTML have various DOCTYPE's.

CSS

CSS

- **C**ascading **S**tyle **S**heets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable.
- Contains the rules for presentation of HTML
- CSS was introduced to keep the presentation separate from HTML markup.
- CSS handles the look and feel part of a web page.
- Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects.

Cascade

❖ The CSS cascade assigns a weight to each style rule. When several rules apply, the one with the greatest weight takes precedence.

❖ Order of preference for various styles:

- Default browser style sheet (weakest)
- User style sheet
- Author style sheet
- Author embedded styles
- Author inline styles (strongest)

SOURCES OF STYLES

Inline Styles

As inline attribute "style" inside HTML tags.

```
<div style="font-weight: bold;">I am bold</div>
```

Embedded Styles

As embedded style tag with in HTML document

```
<head>
    <meta charset="utf-8" />
    <title></title>
    <style type="text/css">
        a {
            padding: 20px;
            display: inline-block;
            font-size: 1rem;
            text-transform: uppercase;
        }
    </style>
</head>
```

Linked Styles

Inside separate files with .css extension

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

CSS Selectors

- ID based (#)

HTML
```
<div id="content">
    Text
</div>
```

CSS
```
#content {
        width: 200px;
}
```

- Class (.)

HTML
```
<div class="big">
    Text
</div>
<div>
    <span class="big">some text </span>
</div>
```

CSS
```
.big{
        width: 200px;
}
```

CSS Selectors

- Tag (Tag name)

HTML

```
<div>
    Text
</div>
<div>
    <span>some text </span>
</div>
<span>some other text </span>
```

CSS

```
DIV {
        width: 200px;
}
SPAN {
        font-size:130%;
}
```

- Universal selectors

```
*  {
        color: blue;

}
```

CSS Pseudo-classes

Syntax : *selector : pseudo-class { property: value }*

:link :visited

:hover

:active

:after

:before

:first-child

:focus

:first-letter

:first-line :lang

Developer Browsers