

# Unit-01 : Introduction to Web Design

- Introduction to internet,
- www,
- website,
- working of website,
- webpages,
- front end, back end,
- client & server scripting language,
- responsive web designing,
- type of websites (static & dynamic websites)

## History of Internet

- Internet was developed in U.S.A. and used by Defense Department of U.S.A.
- This network was named as ARPANET which was established in 1969.
- ARPANET is the biggest step in development of internet.
- This was regarded to be the first step towards the creation of internet.
- Internet, however, came in use more widely in the 1990's.

## What is internet ?

- Internet is an acronym of INTERconnected NETworks.
- Internet is also known as a network of networks.
- The Internet is a vast network that connects computers all over the world.
- Through the Internet, people can share information and communicate from anywhere with an Internet connection.
- The Internet is a global network of billions of computers and other electronic devices.
- With the Internet, it's possible to access almost any information, communicate with anyone else in the world, and do much more.
- You can do all of this by connecting a computer to the Internet, which is also called going online.
- When someone says a computer is online, it's just another way of saying it's connected to the Internet.

## Application of Internet

There are many applications of internet which are given below:

- E-mail
- Social Networking

- E-Commerce(Online Shopping)
- Entertainment
- Services
- Business tools etc.

## **Web Browsers**

- A web browser is application software for accessing the World Wide Web.
- It is a computer program that accesses web pages and display them on the screen.
- It is a special software tools used to access and view web page & website on the WWW.
- We get the information from different website using web browser.
- Without Web browser we can't access or view any web page or website.
- The most popular is google chrome.
- Many web browsers are available like Opera mini, Mozilla, Safari, IE , UC bowser etc.

## **What is WWW ?**

- WWW stands for World Wide Web.
- World Wide Web, which is also known as a Web.
- It is a collection of websites or web pages stored in web servers and connected to local computers through the internet.
- These websites contain text pages, digital images, audios, videos, etc.
- Users can access the content of these sites from any part of the world over the internet using their devices such as computers, laptops, cell phones, etc.
- orld wide web is the largest collection of information on the internet.

## **What is the Web page?**

- A web pages are the collection of related text, animation, pictures ,audio, video and sound etc.
- The World Wide Web consist of files, called pages or web pages which contain information and links to resources throughout the internet.
- A web page is an electronic document written in HTML(Hyper text markup language).
- Web pages are also known as HTML documents.

## **What is the Website?**

- A website is a set of related (Linked through hyperlinks) web pages.

- A website is a collection of web pages made up of related text, images, and other resource.
- Normally a website contains a home page along with additional web pages.
- It is an area on the web which is accessed by its own address `known as URL(Uniform Resource Locator).

## How do websites work?

- A website is simply a collection of web pages of codes – codes that describes the layout, format and content on a page.
- The web server is a internet-connected computer that receives the request for a webpage sent by your browser.
- The browser connects your computer to the server through an IP address.
- The IP address is obtained by translating the domain name.
- In other words, in order to display your website on the Internet, you will need:
  - A website
  - A domain name
  - A server

Static Website	Dynamic Website
Content is same every time the page is loaded.	Content is generated quickly and changes regularly.
It uses the <b>HTML</b> code for developing a website.	It uses the server side languages such as <b>PHP, SERVLET, JSP, and ASP.NET</b> etc. for developing a website.
It sends exactly the same response for every request.	It may generate different HTML for each of the request.
Flexibility is the main advantage of static website.	Content Management System (CMS) is the main advantage of dynamic website.

## Front End Development:

- The part of a website that the user interacts with directly is known as front end.
- It is also referred to as the ‘client side’ of the application.
- It includes everything like text colors and styles, images, graphs and tables, buttons, colors, and navigation menu.

- HTML, CSS, and JavaScript are the languages used for Front End development.
- The structure, design, behavior, and content of everything seen on browser screens when websites, web applications, or mobile apps are opened up, is implemented by front End developers.

**Front end Languages:** HTML, CSS, Javascript etc.

### **HTML:**

- ❖ HTML stands for Hypertext Markup Language.
- ❖ It is used to design the front-end portion of web pages using a markup language.
- ❖ HTML is the combination of Hypertext and Markup language.
- ❖ Hypertext defines the link between the web pages.
- ❖ The markup language is used to define the text documentation within the tag which defines the structure of web pages.

### **CSS:**

- ❖ CSS stand for Cascading Style Sheets.
- ❖ CSS is a simply designed language intended to simplify the process of making web pages presentable.
- ❖ CSS allows you to apply styles to web pages.

### **JavaScript:**

- ❖ JavaScript is a famous scripting language used to create magic on the sites to make the site interactive for the user.
- ❖ It is used to enhancing the functionality of a website to running cool games and web-based software.

**Front End Frameworks and Libraries:** AngularJS, React.js, jQuery

### **AngularJS:**

- AngularJs is a JavaScript open-source front-end framework that is mainly used to develop single-page web applications(SPAs).
- It is a continuously growing and expanding framework which provides better ways for developing web applications.
- It changes the static HTML to dynamic HTML.
- It is an open-source project which can be free.
- It extends HTML attributes with Directives, and data is bound with HTML.

**React.js:**

- React is a declarative, efficient, and flexible JavaScript library for building user interfaces.
- ReactJS is an open-source, component-based front-end library responsible only for the view layer of the application.
- It is maintained by Facebook.

**Bootstrap:**

- Bootstrap is a free and open-source tool collection for creating responsive websites and web applications.
- It is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first websites.

**jQuery:**

- jQuery is an open-source JavaScript library that simplifies the interactions between an HTML/CSS document, or more precisely the Document Object Model (DOM), and JavaScript.

**Backend Development:**

- Backend is the server-side of the website.
- It stores and arranges data, and also makes sure everything on the client-side of the website works fine.
- It is the part of the website that you cannot see and interact with.
- It is the portion of software that does not come in direct contact with the users.

**Back end Languages:** PHP, C++, Java, Python, JavaScript etc.

**PHP:**

- ❖ PHP is a server-side scripting language designed specifically for web development.
- ❖ Since PHP code executed on the server-side, so it is called a server-side scripting language.

**C++:**

- ❖ It is a general-purpose programming language and widely used nowadays for competitive programming.
- ❖ It is also used as a backend language.

**Java:**

- ❖ Java is one of the most popular and widely used programming languages and platforms.
- ❖ It is highly scalable. Java components are easily available.

**Python:**

Python is a programming language that lets you work quickly and integrate systems more efficiently.

**JavaScript:**

JavaScript can be used as both (front end and back end) programming languages.

**Back End Frameworks:**

- ❖ The list of back-end frameworks are: Express, Django, Rails, Laravel, Spring, etc.
- ❖ The other back-end program/scripting languages are C#, Ruby, REST, GO, etc.

Frontend	Backend
Frontend developers are responsible for effectively implementing visual components on a website.	Back-end Developers works on the server-side development. They focuses on databases, scripting, website architecture.
Frontend web developer should be familiar with are HTML, CSS, and JavaScript.	Back-end programming languages like PHP, Java, .Net and knowledge of database, Server, API, etc.
Frontend developers design the website's look.	Backend developers develop an application that supports the frontend.
Front-end development service cannot be offered independently.	Back-end development can be offered as an independent service in BaaS (Back-end as a service).
Frontend developers should make sure that the website is accessible to all users. It remains responsive in all views – mobile and desktop.	The backend team make sure that the website opens up and functions properly.
<b>Tools</b> : jQuery and HTML5	<b>Tools</b> : MySQL and PHP.

**Client-side scripting :**

- ❖ Web browsers execute client-side scripting.

- ❖ It is used when browsers have all code.
- ❖ Source code is used to transfer from webserver to user's computer over the internet and run directly on browsers.
- ❖ It is also used for validations and functionality for user events.
- ❖ It allows for more interactivity.

### **Server-side scripting :**

- ❖ Web servers are used to execute server-side scripting.
- ❖ They are basically used to create dynamic pages.
- ❖ It can also access the file system residing at the webserver.
- ❖ A server-side environment that runs on a scripting language is a web server.
- ❖ Scripts can be written in any of a number of server-side scripting languages available.
- ❖ It is used to retrieve and generate content for dynamic pages.
- ❖ It is used to require to download plugins.

### **Difference between client-side scripting and server-side scripting :**

<b>Client-side scripting</b>	<b>Server-side scripting</b>
Source code is visible to the user.	Source code is not visible to the user because its output of server-side is an HTML page.
It usually depends on the browser and its version.	In this any server-side technology can be used and it does not depend on the client.
It runs on the user's computer.	It runs on the webserver.
It does not provide security for data.	It provides more security for data.
HTML, CSS, and javascript are used.	PHP, Python, Java, Ruby are used.

# **W.T. UNIT: - 2**

## **EDITORS**

### **Unit-02 : Editors**

- Downloading free editors like notepad++, sublime text editor,
- making use of editors,
- file creation & editing, saving.

### **Topics to be Discussed :**

1. What is text editor ?
2. Examples of text editors
3. Use of text Editor :
4. Notepad
5. Wordpad
6. Difference between Notepad & Wordpad.
7. Sublime text
8. Notepad++
9. Features of Notepad++
10. How to download & Install Notepad++
11. How to create, Edit & save files in text editor.



## What is text editor ?

- A text editor is a type of computer program that edits plain text.
- Such programs are sometimes known as "notepad" or "wordpad" software.
- Very essential for system administration.
- Doesn't required graphical capability to run.
- It is lightweight, fast and always available.
- The extension of text editor is **.txt** .

## Examples of text editors

- **Notepad** and **WordPad** - Microsoft Windows included text editors.
- **TextEdit** - Apple computer text editor.
- **Emacs** - Text editor for all platforms that is a very powerful text editor.
- **Atom** - Open source code and text editor.
- **Vi** and **Vim** - Primarily used with Linux but also available with multiple platforms.
- Here, VIM stands for **Vi IM**proved.
- **Sublime Text**

<b>Notepad</b>	<b>Wordpad</b>
It is a text editor program	It is a word processor program
It is made for to create the documents only.	It is made for formatting and printing the documents
It was launched by Microsoft in the year 1983	It was launched by Microsoft along with Windows 95
It is a better choice for creating webpages. It can only save <b>.txt</b> files	Files can be saved in the form of <b>(.txt)</b> and rich text documents <b>(.rtf)</b>
No formatting related to the text can be done.	Formatting options like bold, italics, font style and size, etc. are available
A Notepad has only 5 options. This includes File, Edit, View, Format and Help	More options are available in a Wordpad

## Notepad++

- ❖ **Notepad++** is a free text editor developed by Microsoft.
- ❖ It provides additional features not found in Notepad.
- ❖ It was first released on November 24, 2003, by developer Dan Ho.
- ❖ Notepad++ is specially designed for editing source code.
- ❖ Notepad++ is written in C++ programming language.
- ❖ The "++" in the name is a reference to the increment operator in programming languages such
- ❖ Edit multiple files, organized in tabs.
- ❖ Line numbering.
- ❖ Syntax highlighting for over 70 programming languages,.
- ❖ Advanced find and replace, with support for regular expressions.
- ❖ Create and edit text files for different operating systems, including macOS and Linux.
- ❖ Macros for recording a sequence of editing commands to be executed repeatedly.

## Sublime Text editor

- Sublime Text Editor is a full featured Text editor for editing local files.
- It is used as an Integrated Development Editor (IDE) like Visual Studio.
- The current version of Sublime Text editor is 3.0
- It is compatible with various operating systems like Windows, Linux and MacOS.
- Various features that are supported by Sublime are as follows –
  - Syntax Highlight
  - Auto Indentation
  - File Type Recognition
  - Macros
  - Plug-in and Packages

**You can download Sublime Text from its official Website – [www.sublimetext.com](http://www.sublimetext.com)**

## How to download Notepad++ editor

1. Open the download page of the official website in your browser.
2. Download the latest Notepad++ version to your desktop.

## Steps to install Notepad++ editor

1. Open the folder with the downloaded package on your computer. Click twice the .exe file to run the Installer.

2. Follow all installation steps:

- Select installation language.
- Agree to the terms of the License Agreement.
- Browse the installation directory on your computer.
- Select the type of installation.
- We recommend to use a **Custom** one.
- Choose the components for your Notepad++ installation and click Install to confirm.
- Please wait when the system finish installation.

3. Now you are ready to use Notepad++ software for editing codes.

### Use of text Editor :

- Write text
- Edit text
- Save text file
- Create a document
- Create webpage with writing HTML code
- View & Format text documents

**Notepad program can be opened using either of the methods below.**

1. Click **Start**.
2. In the Run or Search box, type **Notepad** and press ENTER.

**Or**

1. Click **Start**.
2. Open **All Programs, Accessories**, then click the **Notepad** shortcut.

### How to create, edit & save files in text editor.

**Step-01** : Open Notepad in your computer.

**Step-02** : Write/type the text which you want.

**Step-03** : Edit/change the text.

**Step-04** : Save the file, change the **file name** or **file type** to **Plain Text** to save it as a text file.

In many of these programs, you also have the option to save the file as a Rich Text Format.

### How to download and install Notepad++ editor

1. Open the official website of Notepad++ in your browser.
2. Download the latest Notepad++ version to your desktop.
3. Open the folder where notepad++ downloaded & open it.
4. Follow all installation steps:

# **WT UNIT- 3**

## **INTRODUCTION TO HTML**

### **Unit-03 : INTRODUCTION TO HTML**

#### **HTML:**

- Introduction,
- Basic structure of HTML,
- Head section and element of head section,
- Formatting tags: Bold, Italic, underline, strike through,
- Div, pre tag anchor links & named anchors image tags, paragraphs, comments,

#### **Tables:**

- Attributes – (Border, cell padding, cell spacing, height, width), TR, TH, Row span.
- Col span list: ordered list, unordered list, definition list, forms, form elements, Input types, Input attributes,
- Text Input Area, Dropdown, Radio buttons, Check-boxes,
- submit and Reset Buttons Frames: Frameset, nested frames.

#### **HTML5 Introduction,**

- HTML5 New Elements: Section, Nav, Article, Aside, Audio Tag, Video Tag,
- HTML5 form validations. Require attribute, Pattern Attribute, Autofocus Attribute, Email, number type, datatype,
- Range type, HTML embed multimedia, HTML Layout, HTML Iframe.

## What is HTML?

- ❑ HTML stands for **Hyper Text Markup Language**.
- ❑ It is used to create web page, website & web application.
- ❑ HTML describes the structure of a Web page.
- ❑ HTML consists of a series of elements.
- ❑ HTML elements tell the browser how to display the content.
- ❑ HTML is a markup language, not programming language.
- ❑ In **1991- Tim Berners-Lee** invents HTML.

## History of HTML.

- ❑ **1991-** Tim Berners-Lee invents HTML 1.0
- ❑ **1993-** HTML 1.0 is released.
- ❑ **1995-** HTML 2.0 is published.
- ❑ **1997-** HTML 3.0 was invented.
- ❑ **1999-** The widely-used HTML 4.0 comes out. It is very successful.
  - HTML4 is the first version to include cascading style sheets(CSS).
- ❑ **HTML 4.01** which was published in 2012.
- ❑ **2014- HTML 5.0** is released and used worldwide. It is said to be the extended version of HTML 4.01

## What is markup language ?

- ❑ A markup language is a computer language that uses tags to define elements within a document.
- ❑ It is human-readable, meaning markup files contain standard words, rather than typical programming syntax.
- ❑ While several markup languages exist, the two most popular are HTML and XML.
- ❑ The contents of each webpage are defined by HTML tags.
- ❑ Basic tags, such as **<head>**, **<body>**, and **<div>** define sections of the page, while tags such as **<table>**, **<form>**, **<image>**, and **<a>** define elements within the page.

## Basic Structure of HTML

```
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    .....
    .....
    .....
  </body>
</html>
```

### Explained

- ❖ **<html>** element is the root element of an HTML page.
- ❖ **<head>** element contains meta information about the HTML page
- ❖ **<title>** element specifies a title for the HTML page
- ❖ **<body>** element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.

## HTML Elements

- An HTML element is defined by a start tag, some content, and an end tag.
- The HTML **element** is everything from the start tag to the end tag:
- `<tagname>Content </tagname>`

### Examples :

```
<h1>This is My First Heading</h1>
```

```
<p>This is My first paragraph.</p>
```

Start tag	Element content	End tag
<h1>	This is My First Heading	</h1>
<p>	This is My first paragraph.	</p>
 	none	None

## HTML <head> Element

- ❖ The <head> element is a container for metadata (data about data).
- ❖ It is placed between the <html> tag and the <body> tag.
- ❖ HTML metadata is data about the HTML document.
- ❖ Metadata is not displayed.
- ❖ Metadata typically define the document title, styles, scripts, and other meta information.

## Element of Head Section

- The HTML <head> element is a container for the following elements:
  - <title>,
  - <style>,
  - <meta >,
  - <link>,
  - <script>.

## HTML <title> Element

- The <title> element defines the title of the document.
- The title must be text-only.
- It is shown in the browser's title bar.
- The <title> element is required in HTML documents!
- The contents of a page title is very important for search engine optimization (SEO)!
- The page title is used by search engine algorithms to decide the order when listing pages in search results.

## HTML Formatting

- HTML Formatting is a process of formatting text for better look and feel.
- HTML provides us ability to format text without using CSS.

## Formatting Tags

- There are many formatting tags in HTML.
- These tags are used to make text bold, italic or underline.
- In HTML the formatting tags are divided into two categories:
  - **Physical tag:** These tags are used to provide the visual appearance to the text.
  - **Logical tag:** These tags are used to add some logical or semantic value to the text.

Element name	Description
<b>&lt;b&gt;</b>	This is a physical tag, which is used to <b>bold</b> the text written between it.
<b>&lt;i&gt;</b>	This is a physical tag which is used to make text <b>italic</b> .
<b>&lt;u&gt;</b>	This tag is used to <b>underline</b> text written between it.
<b>&lt;strike&gt;</b>	This tag is used to draw a <b>strikethrough</b> on a section of text.
<b>&lt;div&gt;</b>	The <b>&lt;div&gt;</b> tag defines a division or a section in an HTML document.
<b>&lt;a&gt;</b>	The <b>&lt;a&gt;</b> tag defines a hyperlink, which is used to link from one page to another.
<b>&lt;img&gt;</b>	The <b>&lt;img&gt;</b> tag is used to insert image in an HTML page.
<b>&lt;p&gt;</b>	The <b>&lt;p&gt;</b> tag defines a paragraph.
<b>&lt;!--..... &gt;</b>	<b>&lt;!--</b> This is a comment <b>--&gt;</b> You can add comments.

## Strike Text

- Anything written within **<strike>.....</strike>** element is displayed with strikethrough.
- It is a thin line which cross the statement.

**Example:**

~~State Board of Technical Education~~



## Table in HTML

- HTML Tables are used to display **tabular data** in html.
- HTML Table is defined with the <table> tag and then table row <tr> and cells <td> or <th>.

### Table Tags

- Here is a list of **tags used in table**.
- Table is started with <table> tag.
- Inside **table tag**, we have rows <tr> and columns <td>.
- Here s a list of **tags in table**.

Tag	Description
<table>	Defines a table
<th>	Defines a header cell in a table
<tr>	Defines a row in a table
<td>	Defines a cell in a table
<caption>	Defines a table caption
<colgroup>	Specifies a group of one or more columns in a table for formatting
<thead>	Groups the header content in a table
<tbody>	Groups the body content in a table
<tfoot>	Groups the footer content in a table

## Table attributes

- The <table> tag defines table in HTML.
- An HTML table consists of one <table> element and one or more <tr>, <th>, and <td> elements.
  - <tr> element defines a table row,
  - <th> element defines a table header, and
  - <td> element defines a table cell.
- An HTML table may also include <caption>, <colgroup>, <thead>, <tfoot>, and <tbody> elements.

Attribute	Use
<b>width</b>	width of table or table cell
<b>height</b>	height of table or table cell
<b>align</b>	align text in table
<b>valign</b>	vertically align text in table cell
<b>border</b>	border width of table in px
<b>bgcolor</b>	background color of table
<b><u>cellspacing</u></b>	gap between table cells
<b><u>cellpadding</u></b>	gap inside table cells
<b><u>colspan</u></b>	used to group columns in same row.
<b><u>rowspan</u></b>	used to group columns in next row.

## How to create a table in HTML ?

**<html>**

**<head>**

**<title> HTML TABLE</title>**

**</head>**

**<body>**

**<table border=1 cellpadding=10 cellspacing=0 align=center>**

**<caption style="center">STUDENTS TABLE</caption>**

**<tr>**

**<th>NAME</th>**

**<th>ROLL</th>**

**<th>BRANCH</th>**

**</tr>**

**<tr>**

**<td>RAJA</td>**

**<td>101</td>**

**<td>CSE</td>**

**</tr>**

STUDENTS TABLE

NAME	ROLL	BRANCH
RAJA	101	CSE
RANI	102	CSE
RAMESH	103	CSE

**<tr>**

**<td>RANI</td>**

**<td>102</td>**

**<td>CSE</td>**

**</tr>**

**<tr>**

**<td>RAMESH</td>**

**<td>103</td>**

**<td>CSE</td>**

**</tr>**

**</table>**

**</body>**

**</html>**

## Cellpadding :

- Cellpadding specifies the space between the border of a table cell and its contents (i.e) it defines the whitespace between the cell edge and the content of the cell.

**Syntax:**

**<table cellpadding="value" > .... </table>**

## Cellspacing:

- Cellspacing specifies the space between cells (i.e) it defines the whitespace between the edges of the adjacent cells.

**Syntax:**

**<table cellspacing="value" > .... </table>**

## Difference between Cellpadding and Cellspacing

Cellpadding	Cellspacing
It specifies the space between the border of a table cell and its contents.	It specifies the space between adjacent cells.
It is created by using HTML <table> tag but type attribute is set to cellpadding.	It is also created by using HTML <table> tag but type attribute is set to cellspacing.
It is mainly meant for a single cell.	Cellspacing can get subjected to more than one cell.
The default cellpadding value is 1	Whereas, the default cellspacing value is 2
Cellpadding is an attribute	Cellspacing is also an attribute.

### Checkbox :



- A checkbox is a small box which select including checkmark.
- It is used to allow user to select one or more than one options of a limited number of choice.
- A user can check or un-check checkbox by clicking it.
- The checkbox is shown as a square box that is checked when activated.

#### Syntax

`<input type="checkbox">`

### Radio Button :



- A radio button is a small circle in the form.
- It display small dot in the middle when it is selected.
- A radio button is used to create a series of option in which only one can be selected.
- Radio buttons are normally presented in radio groups.
- Only one radio button in a group can be selected at the same time.

#### Syntax :

`<input type="radio">`

## **Dropdown :**

- A drop-down menu is a menu that offers a list of options.
- It is created using <select> tag with <option> value.
- It is a clean method of showing a large list of choices since only one choice is displayed initially until the user activates the drop-down box.
- It allows the user to choose any option as their choice.
- The title of the menu, or the currently-selected item in the list, is always displayed.
- When the visible item is clicked, then other items from "drop-down" list is display, and the user can choose from those options.

## **Introduction to HTML5 :**

- HTML5 is the latest and most enhanced version of HTML.
- Technically, HTML is not a programming language, but rather a markup language.
- HTML5 is the next major revision of the HTML standard superseding HTML 4.01, XHTML 1.0, and XHTML 1.1.
- HTML5 is a standard for structuring and presenting content on the World Wide Web.
- HTML5 is a cooperation between the (W3C) and WHATWG.

**W3C** - World Wide Web Consortium

**WHATWG** - Web Hypertext Application Technology Working Group.

## **HTML5 New Elements :**

### **section :**

- ❖ This tag represents a generic document or application section.
- ❖ It can be used together with h1-h6 to indicate the document structure.

### **article :**

- ❖ This tag represents an independent piece of content of a document, such as a blog entry or newspaper article.

### **Aside :**

- ❖ This tag represents a piece of content that is only slightly related to the rest of the page.

### **nav :**

- ❖ This tag represents a section of the document intended for navigation.

## Audio tag

- The <audio> tag is used to embed sound content in a document, such as music or other audio streams.

### Syntax :

<audio> ..... </audio>

## Video tag

- The <video> element is used to embed video content in an HTML.

### Syntax :

<video>.....</video>

## HTML5 supports the following features

- Uppercase tag names.
- Quotes are optional for attributes.
- Attribute values are optional.
- Closing empty elements are optional.

## HTML Iframes

- An HTML iframe is used to display a web page within a web page.
- The HTML <iframe> tag specifies an inline frame.
- An inline frame is used to embed another document within the current HTML document.

### Syntax :

<iframe> ..... </iframe>

## HTML5 form validation :

- HTML5 Form includes HTML5 New Form Elements & HTML5 New FORM Attributes for Form Validation and better usability on touch devices.
- Using HTML5, we can create a form with built in validation (i.e. no javascript required).
- Earlier, we were using JAVASCRIPT to control form validation.
- These form controls are meant for both Desktop, tablets and smart phones.

## **Unit-04 : Introduction to cascading style sheets (CSS):**

- Concept of CSS,
- creating style sheet,
- CSS properties,
- CSS styling.
- Working with block elements and objects.
- Working with Lists and Tables.

### **CSS ID and class Box Model:**

- Border properties,
- padding properties,
- Merging properties.

### **CSS Advanced:**

- Grouping,
- Dimension,
- Display,
- Positioning,
- Align,
- Navigation Bar, Attribute Sectors, CSS Color

## What is CSS ?

- CSS stands for Cascading Style Sheets.
- CSS is responsible to apply a style on HTML document.
- It is always written within head section.
- It is used to describe the look and formatting of a web page.
- It provides an additional feature to HTML.
- CSS is used along with HTML and JavaScript.
- You can change the look of your website with only a few changes in CSS code.
- The extension name of cascading style sheet is .css.

### CSS Syntax :

```
<style>
.....
.....
.....
</style>
```

Note : A CSS syntax contains a selector and a declaration block.

## Types of CSS:

### Inline CSS

- Inline CSS is used to apply CSS on a single line or element.

### Internal CSS

- Internal CSS is used to apply CSS on a single document or page.
- It can affect all the elements of the page.
- It is written inside the style tag within head section of html.

### External CSS

- External CSS is used to apply CSS on multiple pages or all pages.
- Its extension must be .css for example xyz.css.



## Create Style Sheet using CSS

```
<html>
  <head>
    <title> CSS </title>
    <style>
      p{
        color : red;
      }
      h1{
        color : green;
      }
    </style>
  </head>
  <body>
    <h1>Create Style sheet</h1>
    <p>Create Style sheet</p>
  </body>
</html>
```

## Properties of CSS :

- A Property is a type of attribute of HTML element.
- It could be
  - color,
  - border
  - Font Size.
  - Background Color.
  - Height/Width etc.

## CSS ID and Class Box Model

- The difference between an ID and a class is that an ID is only used to identify one single element in our HTML.
- IDs are only used when one element on the page should have a particular style applied to it.
- However, a class can be used to identify more than one HTML element.

## Border property :

- The CSS border properties are use to specify the style, color and size of the border of an element.
- It is used to specify the border type which you want to display on the web page.
- The CSS border properties are given below :
  - border-style
  - border-color
  - border-width
  - border-radius

## Padding property :

- An element's padding is the space between its content and its border.
- Padding creates extra space within an element, while margin creates extra space around an element.
- Negative values are not allowed.
- If the padding property has one value:
- The padding property is a shorthand property for:
  - padding-top
  - padding-right
  - padding-bottom
  - padding-left

Example :

**padding: 10px;**

❖ all four paddings are 10px

## Merging property :

- The property which are used to combine two or more files.
- Using this property an effort are optimize and reduce page load time.
- You can reduce the number of separate CSS files by merging them into a single file.
- If you open a merged CSS file, you will find one continuous stream of text, without line breaks.

## CSS Advanced

- Advanced CSS is a set of tools and techniques that help you create the modern websites.
- These skills help you make websites more responsive & more easily.
- So, whatever kind or size of device someone is using to view your site, it looks fantastic and works well.

## Grouping :

- The CSS grouping selector is used to select multiple elements and style them together.
- This reduces the code and extra effort to declare common styles for each element.
- To group selectors, each selector is separated by a space.

## Dimension :

- The CSS height and width properties are used to set the height and width of an element.
- The CSS max-width property is used to set the maximum width of an element.
- The height and width properties do not include padding, borders, or margins.
- It sets the height/width of the area inside the padding, border, and margin of the element.

## Position :

- The position property specifies the type of positioning method used for an element.
- Elements are then positioned using the top, bottom, left, and right properties.
- There are five different position values:
  - static
  - relative
  - fixed
  - absolute
  - sticky
- HTML elements are positioned static by default.
- Static positioned elements are not affected by the top, bottom, left, and right properties.

## Display :

- The display property specifies the display behavior of an element.
- The display property also allows to show or hide an element.
- It is similar to the visibility property.
- If you set display:none, it hides the entire element, but the element stays in its original position and size.
- The default value in HTML is inline.

## Align Navigation bar :

- The align Navigation bar in HTML is used to specify the alignment of text content of The Element.
- This attribute is used in all elements.

### Attribute Values:

- **left:** It sets the text left-align.
- **right:** It sets the text right-align.
- **center:** It sets the text center-align.
- **justify:** It stretch the text of paragraph to set the width of all lines equal.

## CSS Colors

- CSS supports RGBA values, HSL values, HSLA values, and opacity.

### RGBA Colors

- RGBA color values are an extension of RGB color values with an alpha channel - which specifies the opacity for a color.
- An RGBA color value is specified with: rgba(red, green, blue, alpha).

### HSL Colors

- HSL stands for Hue, Saturation and Lightness.

### HSLA Colors

- HSLA color values are an extension of HSL color values with an alpha channel.
- An HSLA color value is specified with: hsla(hue, saturation, lightness, alpha), where the alpha parameter defines the opacity.

**Note :** The opacity property specifies the opacity/transparency of an element.

- Introduction to XML.
- Use of XML,
- Simple XML,
- XML key components,
- XSL and XSLT

### **What is xml ?**

- XML stands for extensible Markup Language.
- It is a mark-up language not programming language.
- XML is designed to store and transport data.
- It was created to provide an easy to use and store self describing data.
- It is not used to display data.
- XML tags are not predefined that means you must define your own tags.
- XML is platform independent.
- The extension name XML file is .xml

### **Use of XML :**

- It can be used to exchange the data between organizations.
- XML can be used for offloading and reloading of databases.
- XML can be used to store and arrange the data as their needs.
- Any type of data can be expressed as an XML document.

### **Syntax of XML :**

```
<root>
  <child>
    <subchild>.....</subchild>
  </child>
</root>
```

### **Simple XML**

```
<students>
  <branch> CSE</branch>
  <rollno> 101 </rollno>
  <marks> 350 </marks>
</students>
```

## XML key components :

- The most basic components of an XML document are
  - ❖ **elements,**
  - ❖ **attributes, and**
  - ❖ **comments.**

## Elements :

- Elements are used to mark up the sections of an XML document.
- An XML element has the following form:

**<ElementName> Content </ElementName>**

- You can also have elements that have no content, called empty elements.
- In XML, an empty element can be represented as follows:

**<ElementName/>**

## Attributes

- An attribute is a mechanism for adding descriptive information to an element.
- Attributes can be included only in the begin tag.
- Attribute values must be enclosed in double quotation marks ("").

### Syntax :

**<StudentWeight unit="Kg">55</StudentWeight>**

## Comments

- Comments are descriptions in an XML document to provide additional information about the document.
- It uses the same syntax as HTML comments so that they are ignored by the application processor.

### Syntax :

**<!-- Comment text -->**

## XSL

- XSL stands for eXtensible Stylesheet Language.
- It is a styling language for XML.
- XSL is Style Sheets for XML & CSS is Style Sheets for HTML.
- XSL describes how the XML elements should be displayed.
- It consists of three parts:

### 1. XSL Transformations (XSLT)

A language for transforming XML.

### 2. The XML Path Language (XPath)

An expression language used by XSLT to access the parts of an XML document.

### 3. XSL Formatting Objects (XSL-FO)

An XML vocabulary for specifying formatting semantics.

## **XSLT**

- XSLT stands for XSL Transformations.
- **XSLT** is a language for transforming XML documents.
- XSLT is the most important part of XSL
- XSLT uses XPath to navigate in XML documents
- XSLT is a W3C Recommendation

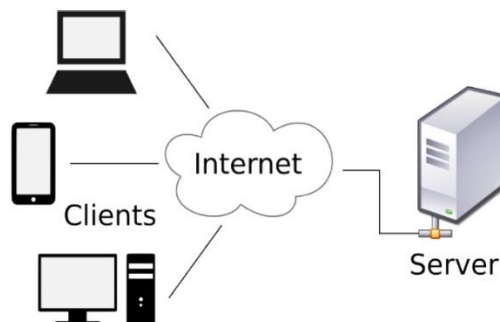
## **Difference between HTML & XML.**

<b>HTML</b>	<b>XML</b>
HTML stands for Hyper Text Markup Language.	XML stands for extensible Markup Language.
It is used to display data.	It is used to store data.
HTML is static.	XML is dynamic.
HTML tags are predefined tags.	XML tags are user defined tags.
HTML has limited number of tags.	XML has unlimited number of tags.
HTML tags are may be unclosed.	XML tags are must be closed
HTML is not a strict language.	XML is a strict language.

- Introduction to Client-side scripting language,
- variables in Java script,
- operations in JS,
- Conditions statements,
- JS Popup Boxes,
- JS Events, Basic
- Form validation in Java script.
- Introduction to Angular.
- JS: Expressions, Modules and Directives.

## What is Script ?

- A script is a set of instructions given in the form of code.
- Instructions are designed for either the web browser (client-side scripting) or the server (server-side scripting).
- Scripts provide changes to the web page.
- The computer used to view a web page using browser is known as the client.
- The computer that hosts the website is known as the server.



## Scripting languages

- A script is a series of instructions that validating a user's entries.
- It is a type of computer language that are used to communicate with other software, such as a web browser, server etc.
- Scripting languages, such as JavaScript, PHP, Ruby, Python etc.
- Scripting helps you to transform a static HTML page into dynamic.
- There are two types of scripting language :
  1. Client-side scripting language
  2. Server-side scripting language
- Web scripts can execute on the client side (also known as the front-end) or the server side (commonly known as the back-end).



## Client side scripting language :

- A language in which a client side script or program is written is called client side scripting language.
- A client-side script is a program that is processed within the client browser.
- It is used to create a dynamic webpage and websites.
- These kinds of scripts are small programs which are run by the browser.
- The client side scripting is browser dependent.

### Example :

JavaScript, VBScript, jQuery etc.

## Difference between server side and client side scripting languages :

Client-side scripting	Server-side scripting
A web computer executes the client-side scripting that is already on the user's computer is run by the browser.	A web server executes the server-side scripting script that generates the page that must be delivered to the browser.
Source code is visible to the user.	Source code is not visible to the user.
It is used at the front end.	It is used in backend applications.
It runs on the user's computer.	It runs on the webserver.
It does not provide security for data.	It provides more security for data.
HTML, CSS, and javascript are used.	PHP, Python, Java, Ruby are used.

## JavaScript

- JavaScript is a client-side scripting language.
- It was invented by Netscape corporation & that time JavaScript was known as LiveScript.
- JavaScript is used to create client-side dynamic pages.
- It can validate users input.
- It is a case-sensitive language.
- It is an object-based scripting language which is lightweight.
- The JavaScript is not the same as the Java programming language.

### Syntax :

```
<script>
.....
.....
</script>
```

## JavaScript Variable

- A JavaScript variable is simply a name of storage location.
- JavaScript variables are case sensitive.
- Always declare JavaScript variables with **var**, **let**, or **const**.
- The var keyword is used in all JavaScript code from 1995 to 2015.
- The let and const keywords were added to JavaScript in 2015.
- If you want your code to run in older browser, you must use var.
- There are two types of variables in JavaScript :

1) Local variable and

**<script>**

2) Global variable.

var x = 10;

var y = 20;

var z=x+y;

document.write(z);

**</script>**

## JavaScript Operators

- JavaScript operators are symbols that are used to perform operations on operands.

### Example:

var sum=10+20;

Here, + is the arithmetic operator and = is the assignment operator.

### There are following types of operators in JavaScript.

Arithmetic Operators

Comparison (Relational) Operators

Bitwise Operators

Logical Operators

Assignment Operators

Special Operators

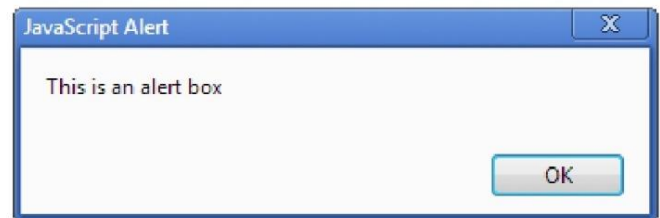
## Conditional statements in javascript :

- The statements which are executes according to given condition is called conditional statements.
- The JavaScript if-else statement is used to execute the code whether condition is true or false.
- There are three forms of if statement in JavaScript.
  1. If Statement
  2. If else statement
  3. Nested if else statement

```
<script>
  var a=20;
  if(a%2==0)
  {
    document.write("a is even number");
  }
  else
  {
    document.write("a is odd number");
  }
</script>
```

## JavaScript Popup Boxes

- JavaScript has three kind of popup boxes:
  1. Alert box,
  2. Confirm box, and
  3. Prompt box.

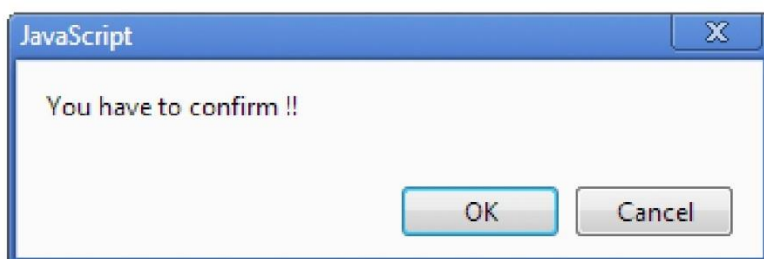


### Alert Box

- An alert box is often used if you want to make sure information comes through to the user.
- When an alert box pops up, the user will have to click "OK" to proceed.

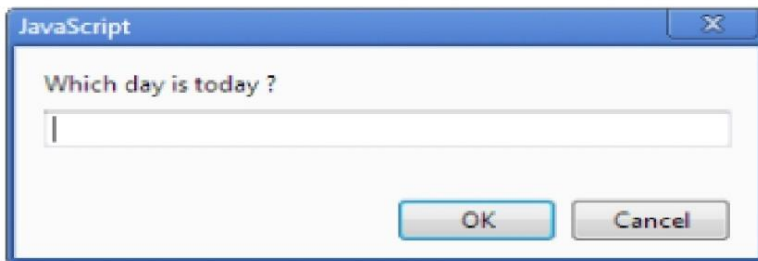
### Confirm Box

- A confirm box is often used if you want the user to verify or accept something.
- When a confirm box pops up, the user will have to click either "OK" or "Cancel" to proceed.
- If the user clicks "OK", the box returns **true**.
- If the user clicks "Cancel", the box returns **false**.



## Prompt Box

- A prompt box is often used if you want the user to input a value before entering a page.
- When a prompt box pops up, the user will have to click either "OK" or "Cancel" to proceed after entering an input value.
- If the user clicks "OK" the box returns the input value.
- If the user clicks "Cancel" the box returns null.



## JavaScript Events

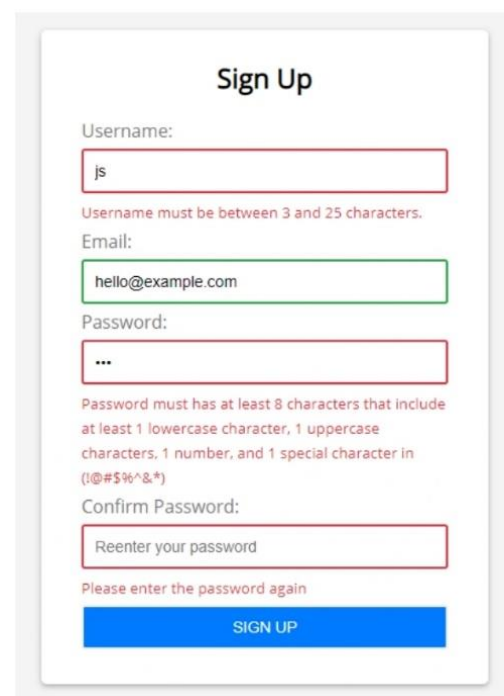
- Event is an action that can be performed on an object.
- The change in the state of an object is known as an Event.
- In HTML, there are various events which represent that some activity is performed by the user.
- When JavaScript code is included in HTML, JS reacts over these events and allows the execution.
- This process of reacting over the events is called Event Handling.
- Thus, JS handles the HTML events via Event Handlers.

### Example,

When a user clicks over the browser, add JS code, which will execute the task to be performed on the event.

## JavaScript Form Validation

- It is important to validate the form submitted by the user.
- So, validation is must to authenticate user.
- JavaScript provides facility to validate the form on the client-side.
- Through JavaScript, we can validate name, password, email, date, mobile numbers and more fields.



### AngularJS

- It is a very powerful JavaScript Framework.
- It is used in Single Page Application (SPA) projects.
- AngularJS extends HTML with new attributes.
- AngularJS is open source, completely free.
- It was originally developed in 2009 by Misko Hevery and Adam Abrons.
- It is now maintained by Google.
- Its latest version is 1.2.21.
- AngularJS is easy to learn.

### AngularJS Expressions

- AngularJS expressions can be written inside double braces: `{{ expression }}`.
- AngularJS expressions can also be written inside a directive: `ng-bind="expression"`.
- AngularJS will resolve the expression, and return the result exactly where the expression is written.
- **AngularJS expressions** are much like **JavaScript expressions**.
- They can contain literals, operators, and variables.

#### Example ;

`{{ 5 + 5 }}` or `{{ firstName + " " + lastName }}`