Semester-5

Web Design

(According to Purvanchal University Syllabus)

Unit – 1

Overview of Internet

Introduction to Internet and www–

- nternet is a global communication system that links together thousands of individual networks. It allows exchange of information between two or more computers on a network. Thus internet helps in transfer of messages through mail, chat, video & audio conference, etc.
- It has become mandatory for day-to-day activities: bills payment, online shopping and surfing, tutoring, working, communicating with peers, etc.
- The World Wide Web (www, W3) is an information space where documents and other web resources are identified by URIs, interlinked by hypertext links, and can be accessed via the Internet. It has become known simply as the Web. Hypertext documents are commonly called web pages, which are primarily text documents formatted and annotated with the Hypertext Mark-up Language (HTML).

Internet protocols like TCP/IP–

Transmission Control Protocol (TCP)

TCP is a connection oriented protocol and offers end-to-end packet delivery. It acts as back bone for connection. It exhibits the following key features:

- Transmission Control Protocol (TCP) corresponds to the Transport Layer of OSI Model.
- TCP is a reliable and connection oriented protocol.
- TCP offers:
    - Stream Data Transfer.
    - Reliability.
    - Efficient Flow Control
    - Full-duplex operation.
    - Multiplexing.

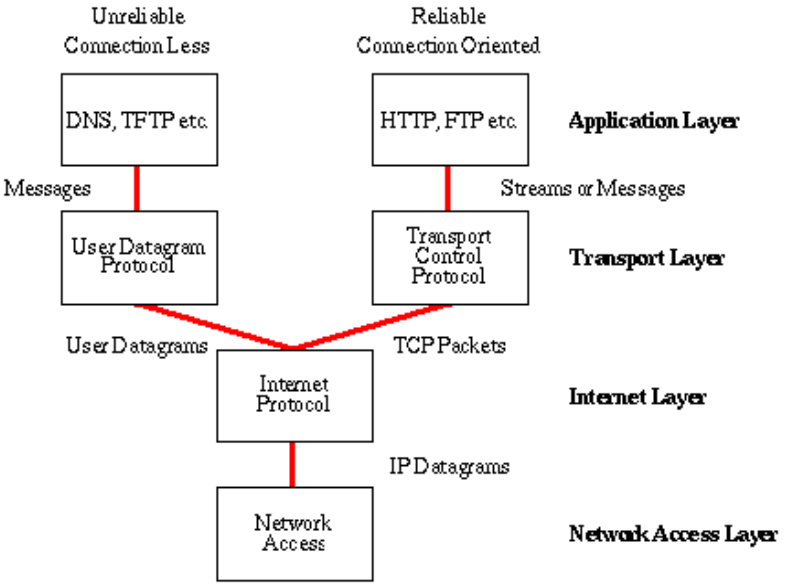
- TCP offers connection oriented end-to-end packet delivery.
- TCP ensures reliability by sequencing bytes with a forwarding acknowledgement number that indicates to the destination the next byte the source expect to receive.
- It retransmits the bytes not acknowledged with in specified time period.

Internet Protocol (IP)

Internet Protocol is connectionless and unreliable protocol. It ensures no guarantee of successfully transmission of data.

In order to make it reliable, it must be paired with reliable protocol such as TCP at the transport layer.

Internet protocol transmits the data in form of a datagram as shown in the following diagram:



Points to remember:

- The length of datagram is variable.
- The Datagram is divided into two parts: header and data.
- The length of header is 20 to 60 bytes.
    - The header contains information for routing and delivery of the packet.

Hyper Text Transfer Protocol (HTTP)

HTTP is a communication protocol. It defines mechanism for communication between browser and the web server. It is also called request and response protocol because the communication between

browser and server takes place in request and response pairs.

HTTP Request

HTTP request comprises of lines which contains:

- Request line
- Header Fields
- Message body

Key Points

- The first line i.e. the Request line specifies the request method i.e. Get or Post.
- The second line specifies the header which indicates the domain name of the server from where index.htm is retrieved.

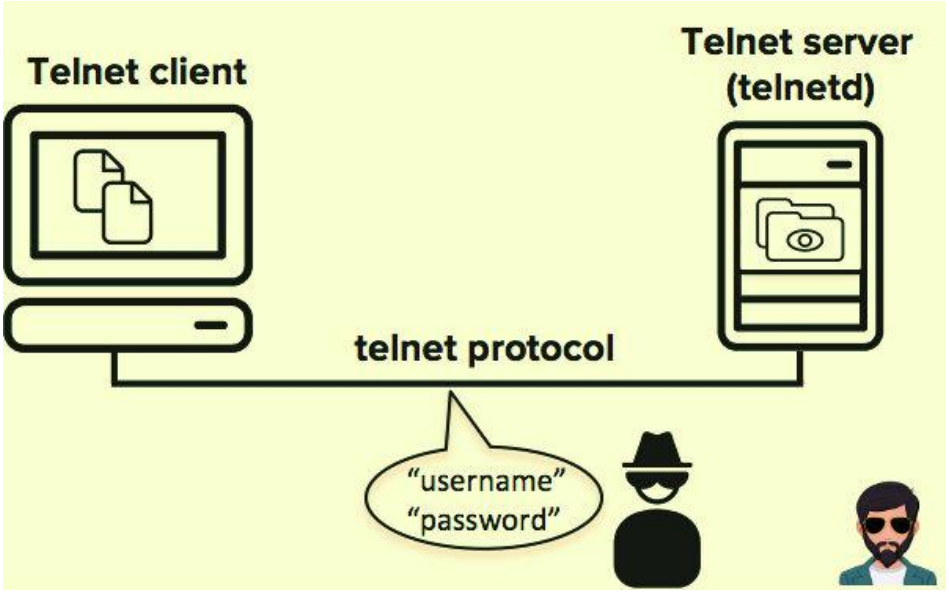
HTTP Response

Like HTTP request, HTTP response also has certain structure. HTTP response contains:

- Status line
- Headers
- Message body

Telnet and FTP–

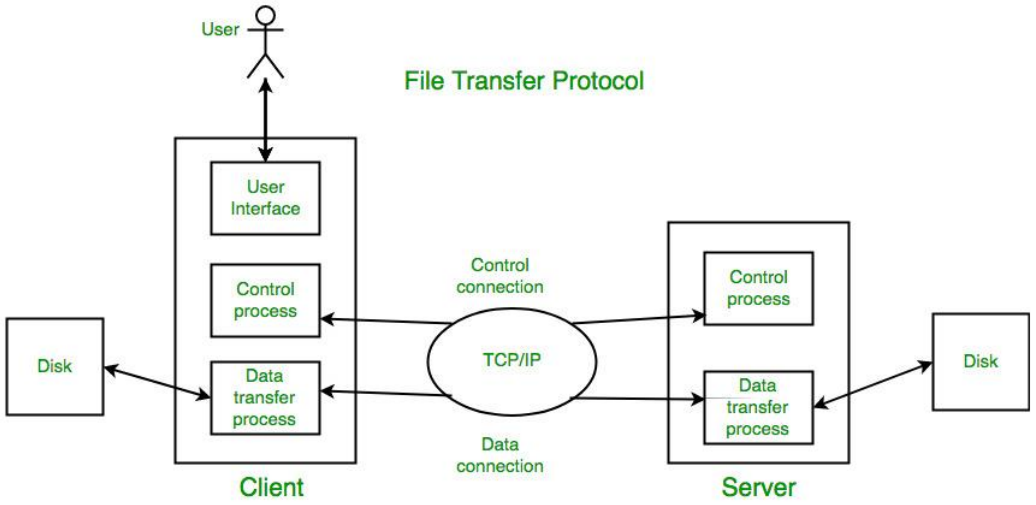
Telnet is a protocol used to log in to remote computer on the internet. There are a number of Telnet clients having user friendly user interface. The following diagram shows a person is logged in to computer A, and from there, he remote logged into computer B.



File Transfer Protocol (FTP)

FTP is used to copy files from one host to another. FTP offers the mechanism for the same in following manner:

- FTP creates two processes such as Control Process and Data Transfer Process at both ends i.e. at client as well as at server.
- FTP establishes two different connections: one is for data transfer and other is for control information.
- Control connection is made between control processes while Data Connection is made between<="" b="">
- FTP uses port 21 for the control connection and Port 20 for the data connection.



URL–

Uniform Resource Locator (URL) refers to a web address which uniquely identifies a document over the internet.

This document can be a web page, image, audio, video or anything else present on the web.

For example, www.dpmishrakidiary.com/internet_technology/index.html is an URL to the index.html which is stored on dpmishrakidiary web server under internet_technology directory.

URL Types

There are two forms of URL as listed below:

- Absolute URL
- Relative URL

Absolute URL

Absolute URL is a complete address of a resource on the web. This completed address comprises of protocol used, server name, path name and file name.

- **http** is the protocol.
- **index.htm** is the file name.

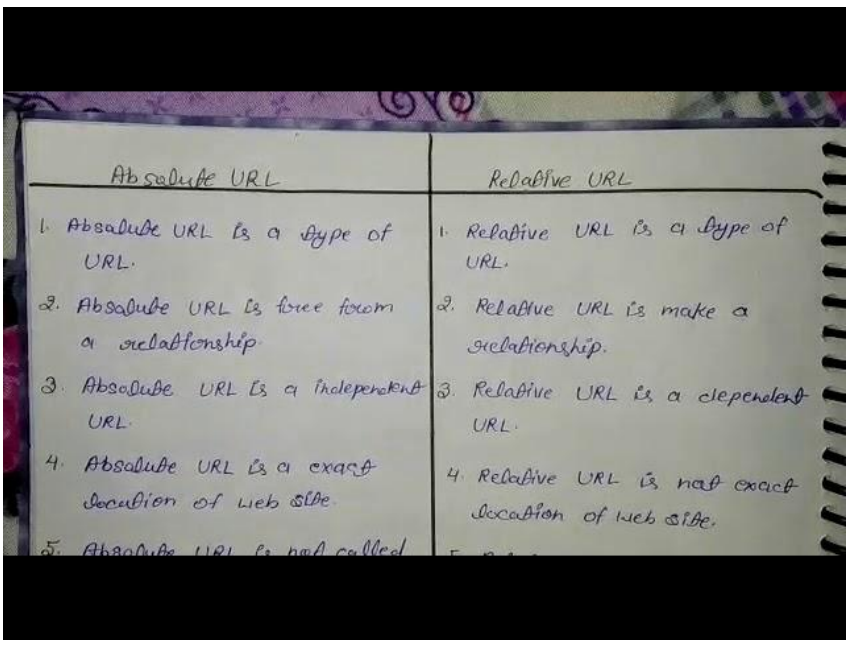
The protocol part tells the web browser how to handle the file. Similarly we have some other protocols also that can be used to create URL are:

- FTP
- https
- Gopher
- mailto
- news

Relative URL

- Relative URL is a partial address of a webpage. Unlike absolute URL, the protocol and server part are omitted from relative URL.
- Relative URLs are used for internal links i.e. to create links to file that are part of same website as the WebPages on which you are placing the link.

Difference between Absolute and Relative URL



Email–

- Email is a service which allows us to send the message in electronic mode over the internet. It offers an efficient, inexpensive and real time mean of distributing information among people.

E-Mail Address

Each user of email is assigned a unique name for his email account. This name is known as E-mail address. Different users can send and receive messages according to the e-mail address.

E-mail is generally of the form username@domainname. For example, kisan1235@gmail.com is an e-mail address where kisan1235 is username and gmail.com is domain name.

- The username and the domain name are separated by @ (at) symbol.
- E-mail addresses are not case sensitive.
- Spaces are not allowed in e-mail address.

Domain Name–

When DNS was not into existence, one had to download a Host file containing host names and their corresponding IP address. But with increase in number of hosts of internet, the size of host file also increased. This resulted in increased traffic on downloading this file. To solve this problem the DNS system was introduced.

Domain Name System helps to resolve the host name to an address. It uses a hierarchical naming scheme and distributed database of IP addresses and associated names

IP Address

IP address is a unique logical address assigned to a machine over the network. An IP address exhibits the following properties:

- IP address is the unique address assigned to each host present on Internet.
- IP address is 32 bits (4 bytes) long.
- IP address consists of two components: network component and host component.
- Each of the 4 bytes is represented by a number from 0 to 255,

separated with dots. For example 137.170.4.124

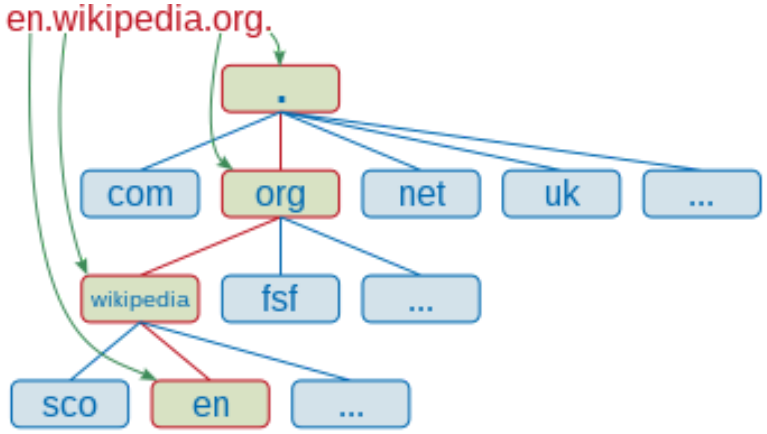
Domain Name System Architecture

The Domain name system comprises of Domain Names, Domain Name Space, Name Server that have been described below:

Domain Names

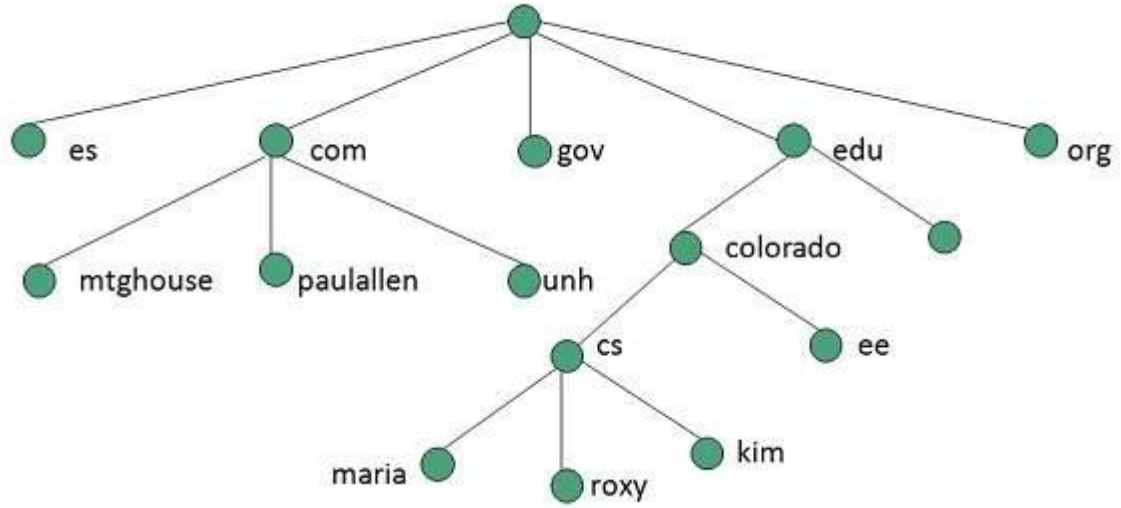
Domain Name is a symbolic string associated with an IP address. There are several domain names available; some of them are generic such as com, edu, gov, net etc, while some country level domain names such as **au, in, za, us** etc.

The following table shows the Generic Top-Level Domain names:



Domain Name Space

The domain name space refers a hierarchy in the internet naming structure. This hierarchy has multiple levels (from 0 to 127), with a root at the top. The following diagram shows the domain name space hierarchy:



In the above diagram each subtree represents a domain. Each domain can be partitioned into sub domains and these can be further partitioned and so on.

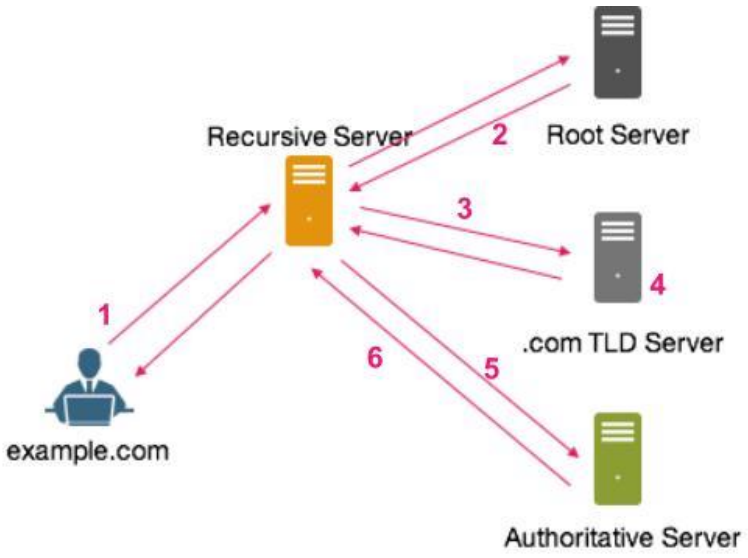
Name Server

Name server contains the DNS database. This database comprises of various names and their corresponding IP addresses. Since it is not possible for a single server to maintain entire DNS database, therefore, the information is distributed among many DNS servers.

- Hierarchy of server is same as hierarchy of names.
- The entire name space is divided into the zones

Zones

Zone is collection of nodes (sub domains) under the main domain. The server maintains a database called zone file for every zone.



If the domain is not further divided into sub domains then domain and zone refers to the same thing.

The information about the nodes in the sub domain is stored in the servers at the lower levels however; the original server keeps reference to these lower levels of servers.

Web Browsers–

Web Browser is an application software that allows us to view and explore information on the web. User can request for any web page by just entering a URL into address bar.

Web browser can show text, audio, video, animation and more. It is the responsibility of a web browser to interpret text and commands contained in the web page.

Earlier the web browsers were text-based while now a day's graphical-based or voice-based web browsers are also available. Following are the most common web browser available today:

Top 10 Browser Software

- Chrome.
- Brave.
- Microsoft Edge.
- Safari.
- Firefox.
- Opera.
- Multilogin.
- Chromium.

Search Engines–

Search Engine refers to a huge database of internet resources such as web pages, newsgroups, programs, images etc. It helps to locate information on World Wide Web.

User can search for any information by passing query in form of keywords or phrase. It then searches for relevant information in its database and return to the user.

Search Engine Components

Generally there are three basic components of a search engine as listed below:

1. Web Crawler
2. Database
3. Search Interfaces

Web crawler

It is also known as spider or bots. It is a software component that traverses the web to gather information.

Database

All the information on the web is stored in database. It consists of huge web resources.

Search Interfaces

This component is an interface between user and the database. It helps the user to search through the database.

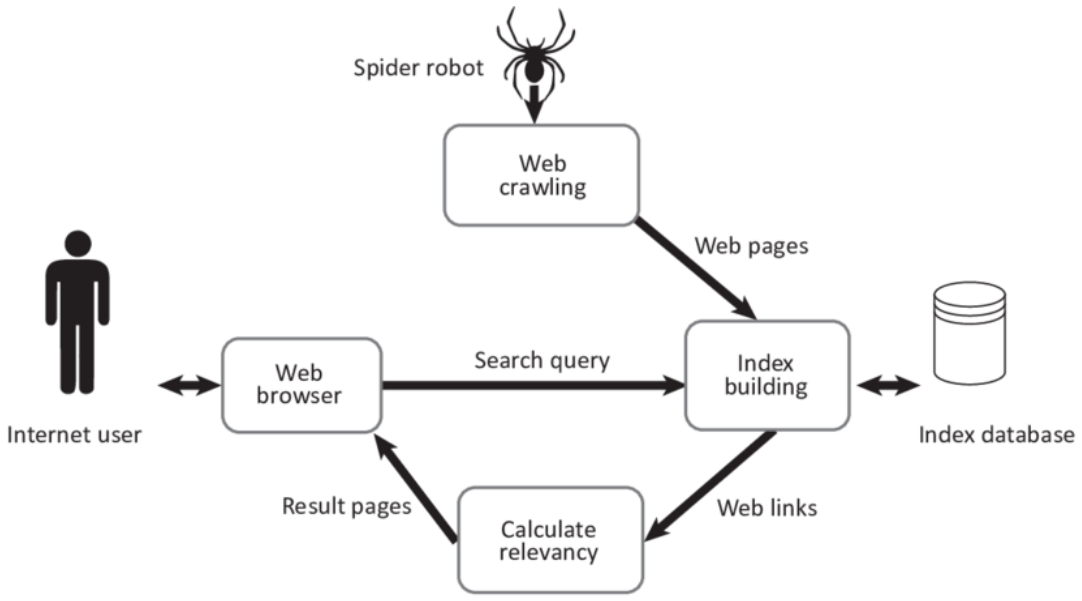
Search Engine Working

Web crawler, database and the search interface are the major component of a search engine that actually makes search engine to work. Search engines make use of Boolean expression AND, OR, NOT to restrict and widen the results of a search. Following are the steps that are performed by the search engine:

- The search engine looks for the keyword in the index for predefined database instead of going directly to the web to search for the keyword.
- It then uses software to search for the information in the database. This software component is known as web crawler.
- Once web crawler finds the pages, the search engine then shows the relevant web pages as a result. These retrieved web pages generally include title of page, size of text portion, first several sentences etc.

Examples

- Following are the several search engines available today:



Counters–

- A web counter or hit counter is a computer software program that indicates the number of visitors, or hits, a particular webpage has
  received. Once set up, these counters will be incremented by one every time the web page is accessed in a web browser.

- The number is usually displayed as an inline digital image or in plain text. Image rendering of digits may use a variety of fonts and

styles; the classic example is the wheels of an odometer.

- The counter is often accompanied by the date it was set up or last reset, without which it becomes impossible to estimate within what time the number of page loads counted occurred.
- Some web counters were simply web bugs used by webmasters to track hits and included no visible on-page elements.
- Counters were popular in the 1990s, but were later replaced by other web traffic measures such as self-hosted scripts like Analog, and later on by remote systems that used JavaScript, like Google Analytics. These systems typically do not include on-page elements displaying the count. Thus, seeing a web counter on a modern web page is one example of retrocomputing on the Internet.

Chat and Bulletin Board Services–

- A web chat is a system that allows users to communicate in real time using easily accessible web interfaces. It is a type of Internet online chat distinguished by its simplicity and accessibility to users who do not wish to take the time to install and learn to use specialized chat software.
- This trait allows users instantaneous access and only a web browser is required to chat. Users will always get the latest version of a chat service because no software installation or updates are required.

Bulletin Board System (BBS)

A bulletin board system (BBS) refers to text-based online communities that users can log into over the Internet using dedicated software. The bulletin board system predates the World Wide Web and was a popular application for Telnet users. Bulletin board systems were an early example of the Internet's ability to foster large online communities.

Unit – 2

Principles of Web Design

Introduction to HTML–

HTML stands for Hyper Text Markup Language. It is a formatting language used to define the appearance and contents of a web page. It allows us to organize text, graphics, audio, and video on a web page.

Key Points:

- The word Hypertext refers to the text which acts as a link.
- The word markup refers to the symbols that are used to define structure of the text. The markup symbols tells the browser how to display the text and are often called tags.
- The word Language refers to the syntax that is similar to any other language.

HTML was created by Tim Berners-Lee at CERN.

Elements of HTML Syntax–

- HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <img /> and <input /> directly introduce content into the page.
- The name of an HTML element is the name used in the tags. Note that the end tag's name is preceded by a slash character, /, and that in empty elements the end tag is neither required nor allowed. If attributes are not mentioned, default values are used in each case.

Element examples

Header of the HTML document: <head>...</head>. The title is included in the head, for example:

<head>

<title>The Title</title>

</head>

Head and Body sections–

- The <head> element is the one that comes next. While you put it in between html and body everything should be just fine. "Head" has no visible function, so we will talk about this aspect in the next tutorials. Even though I want to mention that <head> can offer to the browser very useful information. You can introduce here other cods like JavaScript or CSS.

For the moment we will let this tag empty, and we will introduce the next element from the list, but first lets take a look without him:

```
<html>
    <head>
    </head>
</html>
```

Body Section

- The body element is the one that defines the beginning of the page content itself (titles, paragraphs, photos, music and any other content). As you can see in the menu from the left, we will talk about all elements one by one.

For now all you need to keep in mind is that body covers all the content of the page.

```
<html>
  <head>
   <title> My first web page!</title>
 </head>

 <body>
        Hey guys! Here we will put the content later !
 </body>
</html>
```

Building HTML Documents–

- You can use any text editor to compose and modify HTML text. Examples of text editors include MS-DOS's EDIT, PC-DOS's E, MS-Windows Notepad, the VMS EVE editor, the Unix vi, emacs, pico, or jove editors. Any of these will suffice. You can even use a word processor and then save your work as a text file.
- There are programs available that will take a data file you create with a word processor or desktop publishing program and convert it to HTML information. There are also HTML-specific editors available.
- But it is possible, even easy, to create HTML documents with a common text editor. In fact, you'll probably develop a better understanding of how HTML works. First, let's examine a sample HTML document:

<html>

<head>

<title>A Sample Document<title>

<head>

<body>

<h1>This is a Sample Document<h1>

<!-- This is a comment-->

<hr>

** Over <a href="other.html">here<a>**

<body>

<html>

Inserting Text–

We can use …… tag for inserting the text in our HTML Documents.

HTML uses elements like <b> and <i> for formatting output, like bold or italic text.

Formatting elements were designed to display special types of text:

- <b> - Bold text
- - Important text
- <i> - Italic text
- - Emphasized text
- <mark> - Marked text
- <small> - Small text
- <del> - Deleted text
- <ins> - Inserted text
- <sub> - Subscript text
- <sup> - Superscript text

Images–

Images can improve the design and the appearance of a web

page. In HTML, images are defined with the <img> tag.

The <img> tag is empty, it contains attributes only, and does not have a closing tag.

The src attribute specifies the URL (web address) of the

image: <img src="url">

Image Size - Width and Height

You can use the style attribute to specify the width and height of an image.

Example

<img src="img_girl.jpg" alt="Girl in a jacket"

style="width:500px;height:600px;">

Hyperlinks–

HTML links are hyperlinks. You can click on a link and jump to another document. When you move the mouse over a link, the mouse arrow will turn into a little hand.

Note: A link does not have to be text. It can be an image or any other HTML element.

Syntax

Hyperlinks are defined with the HTML <a> tag:

link text

Example

****

Background and color control–

HTML colors are specified using predefined color names, or RGB, HEX, HSL, RGBA, HSLA values.

HTML supports 140 standard color names.

Background Color

You can set the background color for HTML elements:

Example

<h1 style="background-color:DodgerBlue;">Hello World</h1> Lorem ipsum...

Text Color

You can set the color of text:

Example

<h1 style="color:Tomato;">Hello World</h1>
Lorem ipsum...

Border Color

You can set the color of borders:

Example

<h1 style="border:2px solid Tomato;">Hello World</h1>
<h1 style="border:2px solid DodgerBlue;">Hello

World</h1>

Ordered and Unordered List–

Unordered HTML List

An unordered list starts with the <ul> tag. Each list item starts with the

 tag. The list items will be marked with bullets (small black circles) by

default:

Example

```
<ul>
 <li>Coffee</li>
 <li>Tea</li>
 <li>Milk</li>
</ul>
```

Ordered HTML List

An ordered list starts with the <ol> tag. Each list item starts with the

 tag. The list items will be marked with numbers by default:

Example

```
<ol>
 <li>Coffee</li>
 <li>Tea</li>
<li>Milk</li>
</ol>
```

Content Layout & Presentation–

Structure consists of the mandatory parts of an HTML document plus the semantic and structured markup of its contents.

Presentation is the style you give the content. In most cases presentation is about the way a document looks, but it can also affect how a document sounds – not everybody uses a graphical web browser.

Separate structure from presentation as much as possible. Ideally you should end up with an HTML document which contains the structure and content, and a separate CSS file which contains everything that controls presentation.

HTML Tags

Tag is a command that tells the web browser how to display the text, audio, graphics or video on a web page.

Key Points:

- Tags are indicated with pair of angle brackets.
- They start with a less than (<) character and end with a greater than (>) character.
- The tag name is specified between the angle brackets.
    - Most of the tags usually occur in pair: the start tag and the closing tag.
    - The start tag is simply the tag name is enclosed in angle bracket whereas the closing tag is specified including a forward slash (/).
- Some tags are the empty i.e. they don't have the closing tag.
- Tags are not case sensitive.
- The starting and closing tag name must be the same. For example hello is invalid as both are different.
- If you don't specify the angle brackets (<>) for a tag, the browser will treat the tag name as a simple text.
- The tag can also have attributes to provide additional information about the tag to the browser.

Use of Different HTML Tags in web Pages –

Basic tags

The following table shows the Basic HTML tags that define the basic web page:

Tag	Description
<html> ... </html>	Declares the Web page to be written in HTML
<head> ... </head>	Delimits the page's head
<title> ... </title>	Defines the title (not displayed on the page)
<body> ... </body>	Delimits the page's body
<h *n*> ... </h*n*>	Delimits a level *n* heading
...	Set ... in boldface
...	Set ... in italics
...	Center ... on the page horizontally
...	Brackets an unordered (bulleted) list
...	Brackets a numbered list
...	Brackets an item in an ordered or numbered list
 	Forces a line break here
<p>	Starts a paragraph
<hr>	Inserts a horizontal rule
<img src="...">	Displays an image here
 ... 	Defines a hyperlink

Formatting Tags

The following table shows the HTML tags used for formatting the text:

Formatting Tags

HTML Tag	Output
normal text	hello world
Font & its attributes	hello world
<B>	**Bold**
<I>	*Italic*
<U>	Underline
<EM>	*Emphasis*
<STRONG>	**STRONG**
<TELETYPE>	TELETYPE
<CITE>	*Citation*
<STRIKE>	~~strike-through text~~
<BIG>	text in a big font
<SMALL>	text in a small font
<SUB>	a_b
<SUP>	a^b

Table Tags

Following table describe the commonly used table tags:

```
<table>              // Table Tag
  <tr>               // Row 1
    <th></th>        // Header 1
    <th></th>        // Header 2
  </tr>
  <tr>               // Row 2
    <td></td>        // Column 1
    <td></td>        // Column 2
  </tr>
</table>
```

List tags

Following table describe the commonly used list tags:

```
<!DOCTYPE html>
<html>
<head>
   <title>HTML Lists</title>
</head>
<body>

   <h2>Months</h2>
   <dl>
      <dt>January</dt>
         <dd>-First Month</dd>
      <dt>February</dt>
         <dd>-Second Month</dd>
      <dt>March</dt>
         <dd>-Third Month</dd>
   </dl>

</body>
</html>
```

Frames

Frames help us to divide the browser's window into multiple rectangular regions. Each region contains separate html web page and each of them work independently.

A set of frames in the entire browser is known as frameset. It tells the browser how to divide browser window into frames and the web pages that each has to load.

```
<!DOCTYPE html>
<html>

   <head>
      <title>HTML Frames</title>
   </head>

   <frameset rows = "10%,80%,10%">
      <frame name = "top" src = "/html/top_frame.htm" />
      <frame name = "main" src = "/html/main_frame.htm" />
      <frame name = "bottom" src = "/html/bottom_frame.htm" />

      <noframes>
```

```
        <body>Your browser does not support
frames.</body>
      </noframes>


   </frameset>


</html>
```

Forms

Forms are used to input the values. These values are sent to the server for processing. Forms uses input elements such as text fields, check boxes, radio buttons, lists, submit buttons etc. to enter the data into it.

The following table describes the commonly used tags while creating a form:

```
<!DOCTYPE html>
<html>
<body>

<h2>HTML Forms</h2>

<form>
  Password:
  <input type="password" name="password">
  <br><br>
  <input type="submit" value="Submit">
</form>

</body>
</html>
```

Table Handling

Table Layout and presentation–

The HTML tables allow web authors to arrange data like text, images, links, other tables, etc. into rows and columns of cells.

The HTML tables are created using the <table> tag in which the <tr> tag is used to create table rows and <td> tag is used to create data cells. The elements under <td> are regular and left aligned by default

Example

```
<!DOCTYPE html>
<html>
<body>
	<table>
		<tr>
			<th>Book Name</th>
			<th>Author Name</th>
			<th>Genre</th>
		</tr>
		<tr>
			<td>The Book Thief</td>
			<td>Markus Zusak</td>
			<td>Historical Fiction</td>
		</tr>
		<tr>
			<td>The Cruel Prince</td>
			<td>Holly Black</td>
			<td>Fantasy</td>
		</tr>
		<tr>
			<td>The Silent Patient</td>
<td> Alex Michaelides</td>
			<td>Psychological Fiction</td>
		</tr>
	</table>
</body>

</html>
```

Constructing table in a Web Page–

Tables let you organize information on your Web page and give it an organized look that your visitors will find useful. When used as intended, tables have rows and columns. For each spot where a row and column intersect, you have a table cell. Each cell can have its own formatting: the data in it can be aligned left, center, or right, formatted, and so on. Tables also have header-data cells, in which you put the column headings. You can create a table in Notepad. Here's the HTML code for a simple table of this type:

```
<TABLE BORDER=2>
<TR><TH><B>Production (tons)</B></TH><TH><B>% of goal</B></TH></TR>
<TR><TD><I>>North 40</I></TD><TD>87</TD><TD>102%</TD></TR>
```

```
<TR><TD><I>South 40</I></TD><TD>93</TD><TD>110%</TD></TR>
</TABLE>
```

Developing a Web Page in a Table–

The simplest and most popular way of creating layouts is using HTML <table> tag. These tables are arranged in columns and rows, so you can utilize these rows and columns in whatever way you like.

Example:

For example, the following HTML layout example is achieved using a table with 3 rows and 2 columns but the header and footer column spans both columns using the colspan attribute −

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
         <meta name="viewport" content="width=device-width,
initial-scale=1.0">
   <title>Your Web Page</title>
   <style>
      /* Apply some basic styling to the page */
      body {
         font-family: Arial, sans-serif;
         margin: 0;
         padding: 0;
         background-color: #f4f4f4;
      }

      /* Style the header */
      header {
         background-color: #333;
         color: #fff;
         padding: 10px;
         text-align: center;
      }

      /* Style the main content */
      main {
         margin: 20px;
      }

      /* Style the table */
      table {
         width: 100%;
```

```
            border-collapse: collapse;
            margin-top: 20px;
        }

        th, td {
            border: 1px solid #ddd;
            padding: 8px;
            text-align: left;
        }

        th {
            background-color: #4CAF50;
            color: white;
        }

        /* Style the footer */
        footer {
            background-color: #333;
            color: #fff;
            padding: 10px;
            text-align: center;
            position: fixed;
            bottom: 0;
            width: 100%;
        }
    </style>
</head>
<body>
    <!-- Header -->
    <header>
        <h1>Your Website Title</h1>
    </header>

    <!-- Main Content -->
    <main>
        <h2>Welcome to Your Website</h2>

        <!-- Table -->
        <table>
            <thead>
                <tr>
                    <th>Column 1</th>
                    <th>Column 2</th>
                    <th>Column 3</th>
                </tr>
            </thead>
            <tbody>
                <tr>
                    <td>Data 1</td>
```

```
                <td>Data 2</td>
                <td>Data 3</td>
            </tr>
            <!-- Add more rows as needed -->
        </tbody>
    </table>
</main>

<!-- Footer -->
<footer>
    &copy; 2023 Your Website Name
</footer>
</body>
</html>
```

Unit – 3

HTML Editors and Tools

- HTML Editor Tools is a collection of free online resources that make web content composing easier than ever. Work with HTML code directly in your web browser without downloading and installing any suspicious

  software. With a powerful cross browser and device compatibility this HTML Editor will save you loads of time.
- An **HTML editor** is a tool for editing or evaluating code in hypertext markup language (HTML).

Use of Different HTML Editors and tools like Netscape Communicator and Microsoft Front Page –

An HTML editor. Remember: With these HTML editors, you'll want to have more than a basic understanding of HTML. These tools can help you fix mistakes, but they can't write your code for you.

Netscape Communicator-

- Netscape Communicator (or Netscape 4) is a discontinued Internet suite produced by Netscape Communications Corporation, and was the fourth major release in the Netscape line of browsers.
- It was first in beta in 1996 and was released in June 1997. Netscape Communicator addressed the problem of Netscape Navigator 3.x being used as both the name of the suite and the browser contained within it by renaming the suite to Netscape Communicator. It included more groupware features intended to appeal to enterprises.
- Netscape Composer is a WYSIWYG HTML editor initially developed by Netscape Communications Corporation in 1997, and packaged as part of the Netscape Communicator, Netscape 6 and Netscape 7 range of Internet suites.
- In addition, Composer can also view and edit HTML code, preview pages in Netscape Navigator, check spelling, publish websites, and supports most major types of formatting.

Microsoft front Page

- FrontPage is a Microsoft program used to create and edit HTML documents.
- It can be used to create large complex Web sites.
- FrontPage is a WYSIWYG (what-you-see-is-what-you-get) editor, meaning that you can create the Web page exactly as you want it to look on the screen, and the program adds the HTML source code necessary to make sure that the page looks right in a Web browser.
- FrontPage allows you to FTP, or publish, your site through FrontPage. This section of the manual will take you through all of the necessary steps to publish your web directly from FrontPage.

Basic Settings

To publish your Web site to our servers, you will need to use the following information:

- Publish destination: **http://www.yourdomain.com**
- Username: **yourdomain**
- Password: **yourpassword**

You will need to replace the above text with your own FrontPage account information.

Graphical and Animation Techniques

Use of Different Graphical and animation tools like Adobe Photoshop and Gif Animator etc –

- Animation is not just for cartoons anymore. From full-screen moving images to small hover effects, touches of animation are popping up everywhere. Animation is trendy, fun and user friendly.
- And the obstacles to using animation have started to fall. With most users on high-speed connections and the ease of creating anything from simple movements or a silly gif to several minutes of action, animations have become practical and useful web design tools.

Use of Adobe Photoshop in Web design

PhotoShop is one of the most popular software programs for image editing. ... Web designers prefer to create their designs in PhotoShop first then convert it into HTML format. Many times, the designers do not handle the conversion jobs themselves but it is done by the coding experts.

Use of Gif Animator in Web Design

- This software is used for creating the gif animation for web pages that are inserted in web page by using html.
- Animated GIF inserting to HTML is similar to image inserting. For example, you can insert animated GIF to HTML with IMG tag: <IMG SRC="animation1.gif">. Tag IMG must be inserted between and tags.

Unit – 4

Interactivity

An interactive web design is a design for websites which uses other inbuilt software, modules or features aimed at creating an environment for a website or web application user to be actively engaged during visit or use as the case may be, thereby improving his or her user experience (UX).

Clint Server Model–

The client-server model is a distributed communication framework of network processes among service requestors, clients and service providers. The client server connection is established through a network or the Internet.

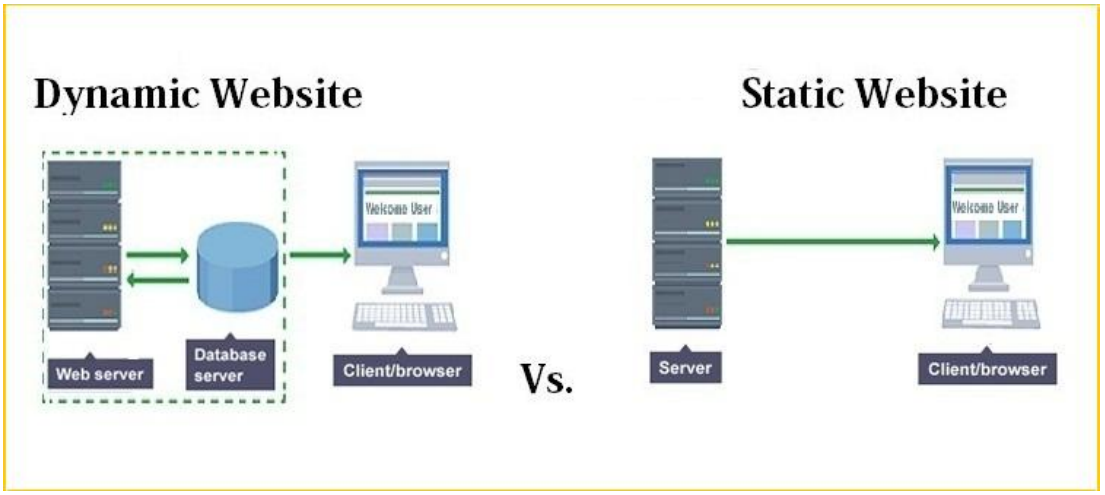
The client-server model is a core network computing concept also building functionality for email exchange and Web/database access. Web technologies and protocols built around the client-server model are:

- Hypertext Transfer Protocol (HTTP)
- Domain Name System (DNS)
- Simple Mail Transfer Protocol (SMTP)
- Telnet

Clients include Web browsers, chat applications, and email software, among others. Servers include Web, database, application, chat and email, etc.

Static and Dynamic web pages–

- Web pages can be either static or dynamic. "Static" means unchanged or constant, while "dynamic" means changing or lively. Therefore, static Web pages contain the same prebuilt content each time the page is loaded, while the content of dynamic Web pages can be generated on the-fly.



Static vs. Dynamic web pages?

Static	Dynamic
• Prebuilt content is the same each time the page is loaded	• Content is generated "on-the-fly" and changes regularly
• Content only changes when someone updates and publishes the file (sends it to the web server)	• Page contains "server-side" code, allows the server to generate unique content when the page is loaded
• HTML code	• PHP, ASP, and JSP or other • Can pull content from a database
• Example: About Us page with corporate background, mission, vision, etc.	• Example: upcoming events on a homepage pulling from a calendar and changing each day

Creating Forms–

- HTML Form is a document which stores information of a user on a web server using interactive controls. An HTML form contains different kind of information such as username, password, contact number, email id etc.
- The elements used in an HTML form are check box, input box, radio buttons, submit buttons etc. Using these elements the information of an user is submitted on a web server.

The form tag is used to create an HTML form.

Example of an HTML Form :

```
<!DOCTYPE html>

<html>

<body>
```

```
<form>
 Username:<br>
 <input type="text" name="username">
 <br>
 Email id:<br>
 <input type="text" name="email_id">
 <br><br>
 <input type="submit" value="Submit">
</form>
</body>
</html>
```

Unit – 5
Web Technologies

The methods by which computers communicate with each other through the use of markup languages and multimedia packages is known as web technology. In the past few decades, web technology has undergone a dramatic transition, from a few marked up web pages to the ability to do very specific work on a network without interruption.

Overview of various web technologies and their Applications

Java Script–

Introduction:

JavaScript is a lightweight, interpreted programming language with object oriented capabilities that allows you to build interactivity into otherwise static HTML pages.

JavaScript code is not compiled but translated by the translator. This translator is embedded into the browser and is responsible for translating javascript code.

Key Points

- It is Lightweight, interpreted programming language.
- It is designed for creating network-centric applications.
- It is complementary to and integrated with Java.
- It is complementary to and integrated with HTML
- It is an open and cross-platform

JavaScript Statements:

JavaScript statements are the commands to tell the browser to what action to perform. Statements are separated by semicolon (;).

JavaScript statement constitutes the JavaScript code which is translated by the browser line by line.

Example of JavaScript statement:

```
document.getElementById("demo").innerHTML = "Welcome";
```

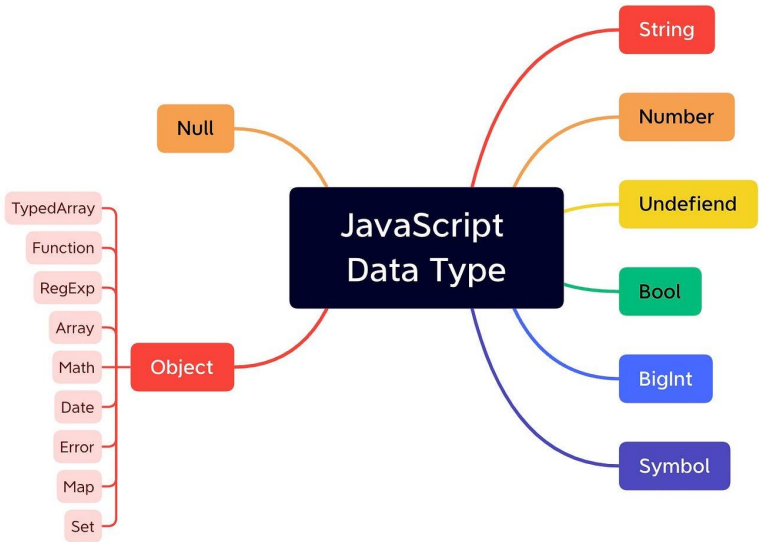
Following table shows the various JavaScript Statements −

Statement	Description
break	Exits a switch or a loop
class	Declares a class
const	Declares a variable with a constant value
continue	Breaks one iteration (in the loop) if a specified condition occurs, and continues with the next iteration in the loop
debugger	Stops the execution of JavaScript, and calls (if available) the debugging function
do ... while	Executes a block of statements and repeats the block while a condition is true
for	Loops through a block of code a number of times
for ... in	Loops through the properties of an object
for ... of	Loops through the values of an iterable object
function	Declares a function
if ... else ... else if	Marks a block of statements to be executed depending on a condition
let	Declares a variable

JavaScript Data Type:

There are two kinds of data types as mentioned below −

- Primitive Data Type
- Non Primitive Data Type



Creating Sample Program:

Following is the sample program that shows time, when we click in button.

```
<!DOCTYPE html>
<html>

<body style="text-align: center;">
    <h1 style="color: green;">
        GeeksforGeeks
    </h1>
    <h4>
        How to count the number of
        times a button is clicked?
    </h4>
    <button id="btn">Click Here!</button>
    <p>
        Button Clicked <span id="display">0</span> Times
    </p>
    <script type="text/javascript">
        let count = 0;
        let btn = document.getElementById("btn");
        let disp = document.getElementById("display");

        btn.onclick = function () {
                        count++;
        disp.innerHTML = count;
        }
    </script>
</body>
</html>
```

Active Server Pages–

- Active Server Pages (also known as ASP or classic ASP) is Microsoft's first server-side script engine that enabled dynamically-generated web pages. While the initial release was an add-on to the Internet Information Services (IIS) component of Windows NT 4.0, it was later incorporated into the Windows Server operating system.
- ASP employs server-side scripting to dynamically produce web pages based on a specific request from the client. The result is

a HTML webpage sent back to the client for display. VBScript is the default scripting language used for writing ASP, although other scripting languages can be used.

- ASP is now obsolete and replaced with ASP.NET. Though, ASP.NET is not strictly an enhanced version of ASP; the two technologies have completely different underlying implementations. ASP.NET is a compiled language and relies on the .NET Framework.

Macromedia Flash–

- Macromedia Flash is a tool that allows powerful animations, interactive features and other complex elements to be embedded in Web pages.
- It got its start in the mid-'90s as an animation tool called FutureSplash, built by a company called FutureWave. FutureWave distributed a tool called FutureSplash Animator that content creators could use to build cartoons. It also provided a second product called FutureSplash Player, which was an early Web browser plugin that could make the animations appear on websites that featured them.

Embedding Java applets in a web pages–

- An applet is a tiny application that adds dynamic content to the larger web application in which it is embedded. Within the HTML environment, the applet is recognized by an <applet> tag enabling the HTML browser to invoke the applet class.
- An applet is a program written in the Java programming language that can be included in an HTML page, much in the same way an image is included in a page.

The HTML <applet> tag specifies an applet. It is used for embedding a Java applet within an HTML document.