Date:
Page:

Web- World Wide Web (WWW)

The web or world wide web is the basically a system of internal ~~severs~~ ≠ servers thats supports formatted documents.

The documents are formatted in a markup language called HTML (Hyper Text Markup Language) that support links to other documents, as well as graphics, audio & video file. There are several application called web broswers that make easy to access the world wide web.

The world wide web is the universe of network accessible information & attachment of human ~~ker~~ knowledge.

The world wide web is a global information medium in which user can read & write through computer connect to the internet. Web is a service that operates over the internet. Web is not internet.

URL (Uniform Resources Locator)

URL is shortform of uniform Resource Locator. URL is the global address of document & other resources on the WWW.

An URL is one type of uniform resources identifier (URI). The term web address is a synonym for a URL. The uniform resource locator was developed by Tim Berners-Lee in 1994 & the internet

engineering task force (IETF) group. URL of a website that runs a script is called dynamic URL.

Internet

Internet is a global network connecting millions of computers all over the world. The internet is not similar is world wide web (WWW). It is also called as network of networks. It connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the internet. The world wide web or simply web is a way of accesing information over the medium of the internet. It is an information sharing model that is built on the top of the internet.

History of Internet:-

Since it creation in 1991 by Tim berners-Lee, one of the funding fathers of the internet, HTML has been ~~domai~~ language for creating webpages. HTML is a language consisting of text content surronded by markings that specified the mean of that contain.

HTML has gone through different versions

& standardization process over the years.

* **1993:-**
Initial official purposed description of HTML 1 submitted to IETF (Internet Engineering Task force) standard groups.

* **1995:**
HTML 2 becomes an official standard language by a publication called RFC 1866.

* **1997:**
HTML 3.2 standardizes various features including form, tables, images, maps and internationalization.

* **1998:**
HTML 4 is purposed by W_3C standards body, adding styles sheets, scripting frames, embedding objects and accessibilities for disabilities.

* **1999:**
HTML 4.01, the latest major version of the language is published by W_3C. A majority of webpages till today uses this version.

* **2000:**
XHTML, Extended HTML is purposed by W_3C.

Date:
Page:

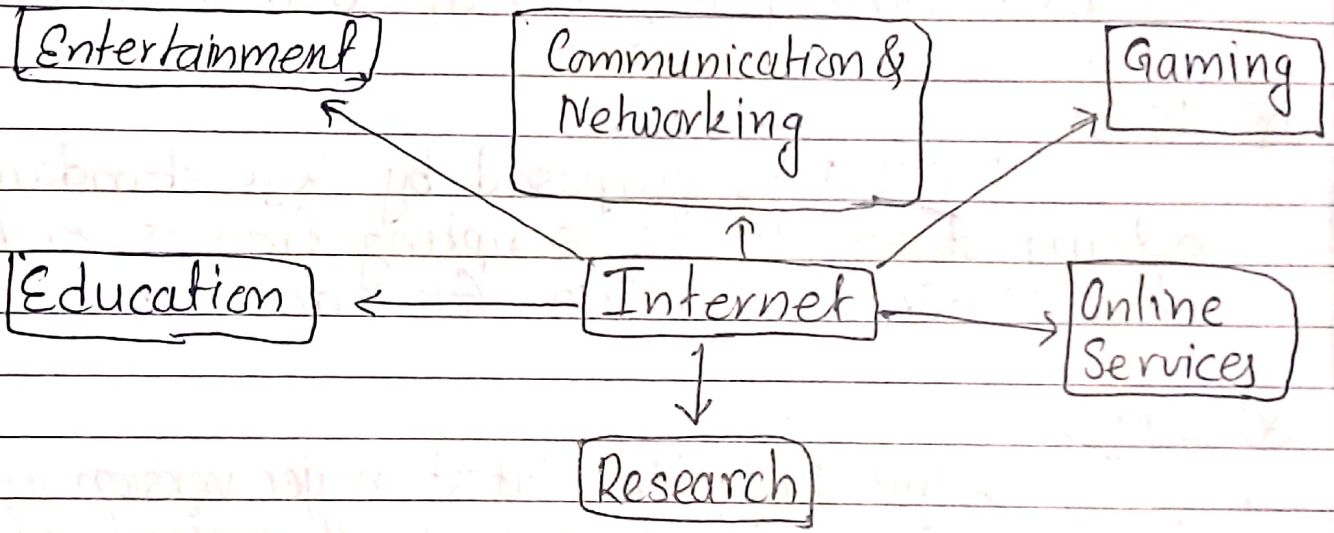
(*) 2014:

HTML5 officially released with the improvement of perious ~~element~~ versions.

ARPANET (Advanced Research Project Agency Network)

Advantages of Internet:

Internet covers almostly every aspect of Life we can think of. There we discuss some of the advantages of internet:-



- Internet allows us communicate with the people sitting at remote locations.
- We can surf for any kind of information over the internet.

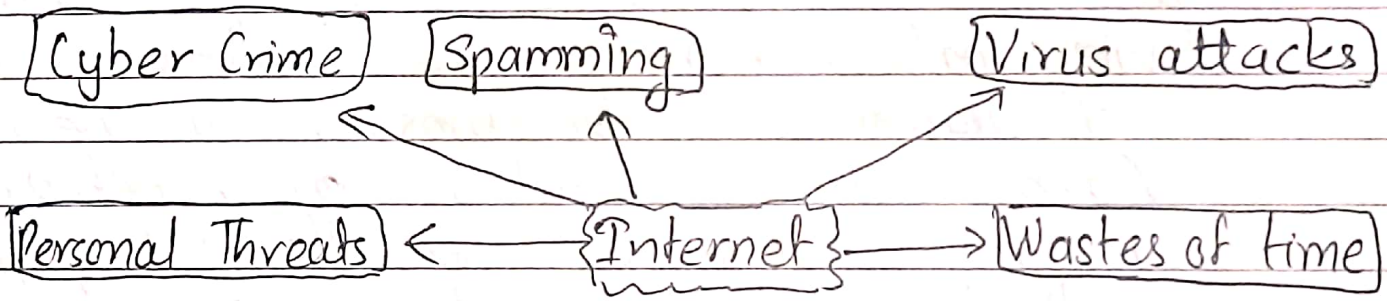
Date:
Page:

- Information regrading verious topic such as geographical information, health & science, technology & products can be surfed with the help of search engine.

- We can share information all ~~over~~ over the world through WWW using internet.

- Communication through internet ~~through~~ is quite cheaper than other communication method.

Disadvantages of Internet:



- There are always chances to loss of personal information such as credit card number, personal private information etc.

- Spamming correspond to the unwanted email in bulk.

- Virus can easily be spread to the computers

connected to internet. Such viruses attack may caused our system to crash or our important data may be deleted.

- There are many websites that do not provide authenticated information. This leds to misconception among many people.

What is Broswer?

A broswer is considered a software application that allow to people to access retrieve and view information on the internet. The information may be broswer can be in the form of text contain on a webpages, images, video & audio etc. The most popular web broswers currently in use are firefox. google chrome, internet explorer & safari etc.

There are a number of broswer that are design to access the web using mobile devices. A mobile broswer is also called micro broswer.

Date:
Page:

What is Search Engine?

The main purpose of search engine is to search for information on the internet. They are software program that searches website based content that the user types in. The search engine then goes through their databases of information in order to locate the information we are looking for. The main search engines currently been used are google, yahoo, bing.

Transmission Control Protocol (TCP)

TCP is a connection oriented protocol and offers end to end packet. It act as backbone for communication. TCP ~~is~~ correspond to transport layer of OSI (Open System Interconnection). TCP is a reliable connection. It supports full duplex operation, & multiplexing, flow control etc.

Internet Protocol (IP):

Internet Protocol is a connection less and unreliable ~~co~~ protocol. It ensure no ~~gare~~ guarantee of successful transmission of data. Internet Protocol ~~set~~ is the ~~set~~ principle set of digital message formats and rules for exchanging messages between computer across a single network or a series of interconnected networks. Messages are exchanges as data

packet.

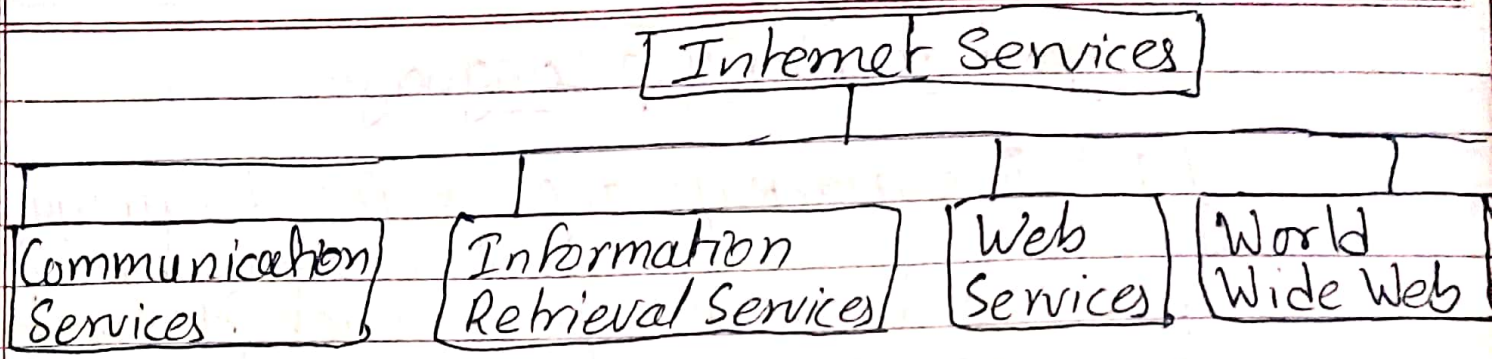
User Datagram Protocol (UDP)

UDP is connectionless and unreliable protocol like IP. It doesnot require making a connection with the host to exchange data. Their is no machanism for data delievery guarrantee. UDP transmits the data in the form of datagram. UDP is used by the applications that typically transmit small amount of data at one time.

HTTP (Hypertext Transfer Protocol)

HTTP is a communication protocol it defines mechanism for communication between broswer & the web server. It is also called request & response protocol because the communication between broswer & server take place in request ~~rep~~ response mechanism. HTTP request line specificies the request ~~line~~ method i.e. Get, Head, Post, Trace, Delete etc. HTTP request includes request lines, header field & message body.

Date:
Page:



Internet Services allow us to access huge amount of information such as text, graphics, sound & software over the internet. Above diagram shows the 4 different catagories:

① Communication Services:

- Email chat, Audio video calls, video conferencing etc.

② Information retrieval Services:

- File transfer protocol, Web content, News, Advertisements etc.

③ Web Services

- Web hosting, Web applications, Cloud Services etc.

④ World Wide Web (WWW)

- File Sharing, Hypertext transfer, Networking etc.

Date:
Page:

HTML

Hypertext Markup Language

HTML is a markup language for describing web documents. HTML documents are briefly describe by HTML tags. Each HTML tag describe different document content.

Hypertext refers to in which webpages are linked together. Markup language describe how html works.

Orginally, HTML was develop with the interest of defining the structure of documents like heading, paragraph, list etc. To facilate the sharing of scientific between researchers.

DHTML (Dynamic HTML)

Dynamic html is a combination of web development technologies use to create dynamically changing websites. Web pages may include animation, audio, video, effects & dynamic menus. It may include Javascript, VBscript, CSS etc. Dynamic website includes the features:

i) Dynamic Content
ii) Dynamic positining of web element
iii) Dynamic Style (color, font, theme, effects etc.)

Date:
Page:

DHTML posses the following problem:

i) It is complex to design then static websites.
ii) DHTML script may not working properly in all web broswers.
iii) The webpage layout maynot display correctly in different screen size & different broswers

HTML Tags:

HTML tags are keywords (tag name) surronded by angle brackets.

Eg.

<tag name> content </tag name>

→ HTML tags come in pairs like and
→ The first tag in pair is called start tag and the last tag is called end tag.
→ The end tag is written like the start tag but with a slash (/) before the tag name.

The <!DOCTYPE> Declaration

The <!doctype> declaration helps the broswer to display a web page correctly. There are different document types on the web.

To display a document correctly, the broswer must know the type of document & version.

The doctype declaration is not case sensitive. All cases are ~~eeeep~~ acceptable.

<!DOCTYPE> = <!doctype> = <!Doctype>

HTML Headings:

HTML headings are defined with the six type of different size heading. They are by default in bold style.

The six types of heading tags are <h1>, <h2>, <h3>, <h4>, <h5> & <h6>. The <h1> heading is the largest heading & <h6> heading is the smallest heading.

These tags are paired tag.

For eg:-

```
<h1> This is heading 1 </h1>
<h2> This is heading 2 </h2>
- - -
<h6> This is heading 6 </h6>
```

HTML Paragraph

HTML paragraph are define with the <p> tag.

Eg.

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

HTML Links

HTML Links are defined with the <a> tag.

```
<a href="www.youtube.com"> This is link </a>
```

The link destination is define in href attribute. Attributes are used to provide additional information about HTML element.

HTML Images:

HTML images are defined with <img> tag. The source file (src), alternative text (alt) and size (width & length) are provided as attributes.

Eg:

```
<img src = "my pic. jpeg" alt = "The picture is not available" width = "100" height = "100">
```

This is a singular tag.

Nested HTML elements

HTML element can be nested (ie. elements can content elements or tag inside tag).

HTML is everything from start tag to the end tag.

eg:

```
<!DOCTYPE html>
<html>
<body>
    <h1> This is largest heading. </h1>
    <p> <i> This is paragraph </i> </p>
</body>
</html>
```

Date:
Page:

HTML Attributes :

→ HTML elements can have attributes.
→ Attribute provides an additional information about an element
→ Attribute are always specified in the start tag.
→ Attribute come in name/value pair like name="value".

The Lang attribute

The document language can be declared in the <html> tag. The language is declared with the lang attribute.

~~Dedr~~ Declaring language is important for accessibility (screen readers) and search engines.

Eg:

```
<!doctype html>
<html lang="en-us">
<body>
    <h1> first heading </h1>
    <p> paragraph </p>
</body>
</html>
```

Date:
Page:

Title attribute:

HTML paragraphs are defined with tag. The title attribute is specified inside the tag.

eg:

The CTC college is located at dennagar, Butwal BCOM is one of the course study at CTC.

What is HTML Document?

An HTML document is a file contenting hypertext markup language with .html exetension, & pictures, audio, video, animations etc. An HTML document is a file containing html code. Except that it may content all the things required for a website.

HTML STYLES

Setting the style of an HTML element can be done with style attribute. The html style attribute has following syntax.

style="property : value"

eg: <h1 style="color: Red"> This is heading </h1>

Date:
Page:

HTML background Color:

The background color property defines the background for an HTML element. This example sets the background for the page to light grey.

```
<body style = "background-color = "lightgrey">
    <p> This is a paragraph
        The background is light grey <p>

<\body>
```

HTML Text Color:

The color property identifies the text color for an HTML element ~~<h3 sty~~

```
<h3 style = "color: blue"> This is heading with blue text </h3>
<p style = "color: blue"> This is paragraph in red color </p>.
```

HTML Fonts:

The font family property defines the font to be used for HTML element.

eg.

```
< h5 style = "font-family: courier "> This is courier font </h5>
<p style = "font-family: Verdana"> This is Verdana font </p>
```

Date:
Page:

HTML

Text size:

The font-size properly defines the text size for an HTML element.

eg:

```
<h2 style="font-size: 200%;">This is doreble sized font</h2>
<p style="font-size: 50%;">This is half sized font</p>.
```

HTML Text alignment

The text-align properly defines the horizontal text alignment for an HTML element.

Eg:

```
<p style="text-align: center;"> This text is aligned at center</p>
<h4 style="text-align: left;"> This text is aligned at left</h4>
```

HTML text formatting

Formatting elements were designed to display special types of text such as:

- Bold text <b>
- Italic text <i>
- important text
- Emphasized text
- marked text
- small text <small>
- Deleted text <del>
- Inserted text
- Subscript text <sub>
- superscript text <sup>
- underline text <u>

Eg:

```
<p> This is normal text. </p>
<p> <b> This is bold text </b> </p>
<p> <i> This is italic text </i> </p>
<p> <em> This is emphasized text </em> </p>
<p> <strong> This is strong text </strong> </p>
<p> <small> This is small text </small> </p>
<p> This is <del> blue </del> red color </p>
```

HTML <body> bgcolor attribute

bgcolor attribute specify the color of body background.

eg:

```
<html>
<body bgcolor = "lightblue">
    <h1> Hello world!!! </h1>
    <p style = "color: red"> This is a paragra-
    ph </p>
</body>
</html>
```

Date:
Page:

HTML Audio Element

To play an audio file in HTML use <audio> element.

```
<audio controls>
  <source src="mysong.mp3" type="audio/mp3">
  Your broswer doesnot support audio.
</audio>
```

Comment in HTML

The comment tag is used to insert comments to the source code. Comments are not displayed to the browsers.

We can use comment to explain our code. This can help us when we edit the source at a later date. This is specially useful when we have a lot of code.

eg:

```
<!-- This is a comment. comments are not displayed in broswer-->
<html>
  <body> <p> <b> where is comment line?
  </b> </p> </body>
</html>
```

Date:
Page:

The <basefont> element

The <basefont> element is supposed to set a default font size, color and typeface for any parts of the document that are not otherwise contained within a <font> tag. We can use the <font> element to override the <basefont> setting.

eg.

```
<body>
  <basefont face="Arial" size="2" color="
  #OFF2BF">
  <p> This is a page having default font</p>
  </body>
```

Strike text

Anything that appears within <strike> ... </strike> element is displayed strikethrough which is a thin line through the text.

eg:

```
<body>
  <p> This is <strike> strike</strike>
      text </p>
  <h2> Ram is <strike> bad boy
  </strike> male </h2>
  </body>
```

Date:
Page:

HTML List

HTML offers web authors three ways for specifying list of information. All list must contain one or more list elements. List may ~~be~~ contain--

 An unordered list. This will list items using bullets.

 An unordered list. This will use different schemes of numbers to list your items.

<dl>- A definition list. This arranges the items in the same way as they are arranged in the dictionary.

HTML Unordered List

Unordered list is the collection of related items that have no special order or sequence. This list is created by using html <ul> tag. Each items in the list is marked with a bullets.

The type attribute

We can use type attribute for <ul> tag to specify the type of of bullet we use. By default, it is a disc. Followings are possible options:

```
<ul type="square">
<ul type="disc">
<ul type="circle">
```

Date:
Page:

eg: (*)

```
<html>
<body>
<p> This is unordered list </p>
<ul type = "square">
<li> physics </li>
<li> chemistry </li>
<li> Maths </li>
</ul>
</body>
</html>
```

(*)

```
<html>
<body>
<p> This is unordered list of fruits </p>
<ul type = "circle">
<li> mango </li>
<li> banana </li>
<li> Orange </li>
<li> Grapes </li>
</ul>
</body>
</html>
```

Date:
Page:

HTML Ordered list

If we are required to put our items in a number list instead of bulleted then HTML ordered list will be used. This list is created by using <ol> tag. The numbering starts at one & Each incremented by one for each successive ordered list element tag with <li> tag.

The type attributes

We can use type attribute for <ol> tag to specific the type of number we will use. By default, it is a number (1,2,3---).
Following are the possible options:

<ol type="1"> - Default case numbering
<ol type="I"> - Upper case numerals
<ol type="i"> - lower case numerals.
<ol type="a"> - lower case alphabet
<ol type="A"> - upper case alphabet

```
eg: <Html><body> <p> This is ordered list of subjects
  </p>
    <ol type="i">
     <li>physics</li> <li>chemistry</li>
     <li> maths</li> <li> Electricals</li>
     <li> Web technology</li>
     </ol>
     </body></html>
```

Date:
Page:

The start attribute

We can use start attribute for the <ol> tag to specify the starting ~~of~~ point of numbering we need.

eg:

```
<ol type="1" start="5">
<ol start="10">
<ol type="i" start="4">
<ol type="A" start="5">
<ol type="a" start="3">
```

HTML Tables

The html tables allow web authors to arrange data like text, images, links & other tables etc. Into rows & columns of cells. HTML tables are created using the <table> tag in using the <tr> tag is used to create table rows and <td> tag is used to create data cells.

Eg.

```
<html>
<body>
    <table border="1">
    <tr>
        <td> R1 C1 </td><td> R1 C2 </td>
    </tr>
    <tr>
        <td> R2 C1 </td><td> R2 C2 </td>
    </tr>
```

Date:
Page:

```
</table>
</body>
</HTML>
```

R_1C_1	R_1C_2
R_2C_1	R_2C_2

Here, the border ~~attribute~~ is an attribute of <table> tag. It is used to put the border across all the cells. If we donot need border. We can use broder = "0".

Table heading

Table heading can be define ~~can~~ using <th> tag. This tag will be put to replace <td> tag. Normally we will put our top row as table heading otherwise we can use <th> tag in any row.

~~Table~~

Cell padding & Cell spacing

There are two attributes called cell padding & cell spacing which ~~with~~ we will use to adjust the white space in our table cells. The cell spacing attribute defines the ~~distance between cell~~ ~~border~~, b and the content within a cell.

Ex
```
<html>
<body>
<table cellspacing="3" cellpadding="2" border="1">
  <tr>
    <th> S.N</th> <th> Name </th>
    <th> salary </th>
  </tr>
  <tr>
    <td> 1. </td> <td> manoj </td>
    <td> 20,000 </td>
  </tr>
  <tr>
    <td> 2 </td> <td> Manohar </td>
    <td> 30,000 </td>
  </tr>
  <tr>
    <td> 3. </td> <td> Shanit </td>
    <td> 1,00,000 </td>
  </tr>
</table> </body> </html>
```

Colspan and Rowspan Attributes

We can use colspan attribute if we want to merge two or more columns into a single column.

Similarly we can use rowspan attribute if we can to merge two or more rows.

Date:
Page:

(9) Write the HTML Code to Create Table as follows:

S.N.	Subject	FM	PM	Obtained Marks		Total	Remarks
				Theory	Practical		
1	Physics	80	32	50	20	70	Pass
2	Chemistry	80	32	60	15	75	Pass
3	Maths	100	40	80		80	Pass
4	Web	80	32	50	12	62	Pass
5	logic	80	32	10	10	20	Fail
					Result:	307	Fail

Table: Student Marks Sheet

```
<!DOCTYPE html>
<html>
<body>
<table border="1" style="text-align:center">
<tr>
<th rowspan="2"> S.N. </th>
<th rowspan="2"> Subject </th>
<th rowspan="2"> FM </th>
<th rowspan="2"> PM </th>
<th colspan="2"> Obtained Marks </th>
<th rowspan="2"> Total </th>
<th rowspan="2"> Remarks </th>
</tr>
<tr>
<th> Theory </th>
```

<th> pradical </th>
</tr>
<tr>
<td> 1 </td>
<td> physics </td>
<td> 80 </td>
<td> 32 </td>
<td> 50 </td>
<td> 20 </td>
<td> 70 </td>
<td> pass </td>
</tr>
<tr>
<td> 2 </td>
<td> chemistry </td>
<td> 80 </td>
<td> 32 </td>
<td> 60 </td>
<td> 15 </td>
<td> 75 </td>
<td> pass </td>
</tr>
<tr>
<td> 3 </td>
<td> Maths </td>
<td> 100 </td>
<td> 40 </td>
<td colspan="2"> 80 </td>
<td> 80 </td>
</tr>

```
<td> pass </td>
</tr>
<tr>
<td> 4 </td>
<td> web </td>
<td> 80 </td>
<td> 32 </td>
<td> 50 </td>
<td> 12 </td>
<td> 82 </td>
<td> pass </td>
</tr>
<tr>
<td> 5 </td>
<td> logic </td>
<td> 80 </td>
<td> 32 </td>
<td> 10 </td>
<td> 10 </td>
<td> 20 </td>
<td> Fail </td>
</tr>
<tr>
<td colspan="6" style="text-align: right">
Result: </td>
<td> 307 </td>
<td> Fail </td>
</tr> <caption> Table: Student Marks Sheet
</caption> </table>
</body> </html>
```

Date:
Page:

Day	Seminar		
	Schedule		Topic
	Start	End	
Sunday	8:00 am	5:00 pm	Introduction to HTML
Monday	8:00 am	11:00 am	HTML lists
	11:00am	5:00 pm	HTML Table
	8:00am	11:00 am	HTML Frame
Tuesday	11:00 am	2:00 pm	HTML Form
	2:00 pm	5:00 pm	HTML CSS
Wednesday	8:00am	5:00 pm	Project work

Table: Schedule for seminar

```
<html>
<body>
<table border="1" cellspacing="0" cellpadding
="0" style="text-align: center">
<tr>
<td> <th>
<th rowspan="3"> Day </th>
<th> Seminar
<th colspan="3"> Seminar </th>
</tr><tr>
<th colspan="2"> Schedule </th>
<th rowspan="2"> Topic </th>
</tr>
<tr>
<th> Start </th>
```

```
<th> End </th>
</tr>
<tr>
 <td> Sunday <td>
 <td> 8:00 am </td>
 <td> 5:00 am </td>
 <td> Introduction to HTML </td>
 </tr>
<tr>
 <td rowspan="2"> Monday </td>
 <td> 8:00 am </td>
 <td> 11:00 am </td>
 <td> HTML lists </td>
 </tr>
 <tr>
 <td> 11:00 am </td> <td> 5:00 pm </td> <td>
 HTML Table </td> </tr>
 <tr>
 <td rowspan="3"> Tuesday </td>
 <td> 8:00 am </td> <td> 11:00 am </td>
 <td> HTML Frame </td> </tr>
 <tr> <td> 11:00 am </td> <td> 2:00 pm </td>
 <td> HTML Form </td> </tr>
 <tr> <td> 2:00 pm </td> <td> 5:00 pm </td>
 <td> HTML CSS </td> </tr>
 <tr> <td> Wednesday </td> <td> 8:00 am
 </td> <td> 5:00 pm </td> <td> Project work
 </td> </tr> </table>
<caption> Table: Schedule for seminar. </caption>
 </body> </html>
```

Date:
Page:

HTML FORMS

HTML Forms are required when we want to collect some data from the site visitor. For example: During User Registration we would like to collect information such as name, email, credit card, age etc.

A form will take input from the site visitor and then will post it to a back-end application such as asp script, ~~PH~~ PHP etc. The backend application will perform required processing on the passed data based on the defined logic behind the application.

There various form elements available like text fields, text area, radio button, submit button, drop down menu etc.

The html <form> is used to create an html form.

Form attributes:

Following are the list of most frequently used form attributes.

① Action:

Backend script ready to process ~~or~~ our passed data.

Date:
Page:

② Method: Method to ~~be~~ be used to upload data. The most frequently used are GET & POST methods.

③ target: Specify the target window or frame where the result of the script will be displayed.

④ Enctype: We can use enctype attribute to specify how the broswer encodes the data before it sends to the server.

Syntax:

```
<form action = "script URL" method="GET/POST">
    form elements like input, textarea etc.
</form>
```

⑧ HTML Form Controls:

Their are different types of forms controls that we can use to collect data using HTML2 forms.

① Text input Controls
② Check boxes controls
③ Radio box controls
④ Select box controls
⑤ File Select Box
⑥ Hidden Controls
⑦ Clickable buttons
⑧ Submit and Reset Button

Date:
Page:

Text Input Controls:-

There are three types of text input controls used in html forms they are

1) Single line text input controls:

This control is used for item that require only one line of user input such as search box, name box etc. They are created using html <input> tag.

2) Password input controls:

This is also a single line text input but it masks the character as soon as the user enter it. They are also created using html <input> tag.

3) Multiline text input controls:

This is used when the user is require to give details that may be longer that single sentences. Multiline input controls are created using html tag <textarea>.

Date:
Page:

Single line text input controls Attributes:

Following is the list of attributes for <input> for creating text field.

① **Type:** It indicates the types of input control and ~~for~~ for text input control. it will be set to text.

(11) **name:** It is used to give the name to the control.

③ **Value:** It can be used to give and initial value inside the control.

④ **Size:** It is used to specific the width of the text-input controls in terms of characters.

⑤ **Max length:** It is used to specific the maximum number of characters. A user can enter into the text box.

Date:
Page:

* Password input controls:

Attributes:

① Type:
It indicates the type of input control and for password input control it will be set to password.

② Name:
③ Value:
④ Maxlength:
⑤ size:
} same as single

* Multiline text input controls.

Attributes:

① Name: = single
② rows: it indicates the no of rows of text area box.
③ Cols: it indicates the no of columns of textarea box.

Date:
Page:

Example:

```
<!doctype html>
<html>
<title> Form elements </title>
<body>
 <form>
 First Name: <input type="text" name="First_
 name"> <Br>
 Last Name: <input type="text" name="last_
 name"> <Br>
 Password: <input type="password" name="
 pw-box "> <Br>
 Description: <textarea rows="50" cols="100"
 name = "Des_box">
  Enter Your description here:
  </textarea>
 </form>
 </body>
 </html>
```

(*) Checkbox Controls:

Checkboxes are used when more then one option is required to be selected. They are also created using html <input> tag but type attribute is ~~sate~~ set to checkbox.

Attributes:

① Type ⇒ need to set checkbox:

② Name:
③ Value: The value will be used if the checkbox is selected.
④ Checked: set to checked if we want to select by default.

Ex:

```
<form>
    <input type="Checkbox"> phy<12> <Br>
    <input type="checkbox"> Chemistry<Br>
    <input type="checkbox"> Nepali <Br>
</form>
```

Radio Button Control:

Radio button are used when out of many options, just one option is required to be selected. They are also created using html <input> tag. But the type attribute is set to radio.

Attributes:

① type: need to set as "radio".
⑪ name:
③ value:
④ Checked:

Date:
Page:

Select Control Box/dropdown box:

A select control box, also called dropdown box which provides option to listdown various option in the form of dropdown list from where user can select one or more option.

Attributes:

① Name:-
② Size:- It is used to present a scrolling list box.
③ Multiple:- If set to "multiple" then allows a user to select multiple items from the menu.

~~File Upload box:~~

Example:-

```
<form>
<select name = "select-box">
<option value = "Jhapa" selected > Jhapa </option>
<option value = "Syangja" > syangja </option>
<option value = "Rupandehi" > Rupandehi </option>
<option value = "Rolpa" > Rolpa </option>
</select>
</form>
```

Date:
Page:

④ File Upload Box:

If we want to allow a user to upload a file to our website, we will need to use a file upload box, also known as fileselectbox. This is also created using the input tag but the type attribute is ~~set~~ to ~~fid~~ "file".

Example:

```
<form>
    upload your file here: <Br>
    <input type = "file" name = "upload-box"
    accept = "pdf/*">
</form>
```

Attributes:

① Name;
② accept: types of files specific ~~foil~~ which we want to take in sever accepts.

④ Button Controls:

There are various ways in html to create clickable buttons. We can also create a clickable button using <input> tag by setting its type attributes to button. The type attribute can take the following values.

Date:
Page:

1) Submit:
This creates a button that automatically submit a form.

2) Reset:
This creates a button that automatically resets form controls to their initial values.

3) Button:
This creates a button that is used to trigger a client site script.

4) Image:
This creates a clickable button but we can use an image as background of the button.

Example:-

```
<form>
<input type="submit" name="submit" value=
" submit> <br>
<input type="reset" name="reset" value=
"reset"> <br>
<input type = "button" name ="ok" value
= "ok" > <br>
<input type = "image" name = "img-button"
src = "mypic.jpg>
</form>
```

Date:
Page:

* Hidden form controls:

Hidden form controls are used to hide data inside the page which later on can be published to the server. This controls hides inside the codes and does not appear on the actual page. For example:- Hidden form is being used to keep current page no.

Example:-

```
<form>
<p> This is page 10 </p>
<input type = "hidden" name = "page number"
value = "10" >
<input type = "submit" name = "Submit"
value = "submit">
</form>
```

<select>
<option value="sel

Date:
Page:

Q Write the HTML code to create a form as shown in below in a webpage.

Employee Registration form

First Name:
last name:
Address: Rolpa
Gender : Male Female
Description:
Hobbies: playing swimming
Reading sleeping
Email: password:
Submit reset Cancel

<textarea row="5" col="100">
</textarea>

Coding

```
<html>
<body>
<h2><u> Employee Registration Form </u></h2>
<form>
First Name: <input type="text" name="First_name"> <br>
Last Name: <input type="text" name="Last_name">
Address: <select>
```

Date:
Page:

selected

```
<option value="Rolpa"> Rolpa </option>
<option value="Dang"> Dang </option>
<option value="Palpa"> Palpa </option>
<option value="Rupandehi"> Rupandehi </option>
<option value="Pyuthan"> Pyuthan </option>
</select> ~~<br>~~ <br>
Description: <textarea> </textarea>
Hobbies: <input type="checkbox"> playing
        <input type="checkbox"> swimming
        <input type="checkbox"> Reading
        <input type="checkbox"> Sleeping
        <br>
Email: <input type="text">
Password: <input type="password"> <br>
<input type="submit" value="Submit">
  <input type="reset" value="Reset">
  <input type="cancel" value="cancel">
</form>
</body>
</html>
```

Dreamweaver

Date:
Page:

HTML EDITORS & TOOLS:-

HTML editor is a computer program for editing html file. Although the html file can be written with any text editor, specalized html editor can offer easy and new functionality. For example: many html editors work not only with html but also with related technologies such as CSS, XML, & javascript.

① Macromedia Dreamweaver:-

Macromedia Dreamweaver is a software program that is use for the purpose of web development. While the program was initially developed under macromedia, it is now owned by Adobe systems. The latest version of dreamweaver are incorporating a no of different technolgies such as javascript, CSS and other scripting systems. Dreamweaver is a highly succesful program ie. the premier tool for html editors. It can be used on a no of different platforms such as linux, windows and MAC.

Date:
Page:

(11) Eclipse:

Eclipse is a complex development environment ie perfect for people who do a lot of coding on various platform and with different languages. It is structured as plugins, so if we need to edit something we just find the apporiate plug-in and go to work.

If we are creating complex web-applications, eclipse has a lot of ~~feature~~ feature to help make our applications easier to built. There are java, javascript, PHP plug-ins as well as plug-in for mobile app developer

(3) Coffee-Cup Html Editor:-

The coffeecup html editor comes into two versions, a free versions and full version. The free version is a good product but we should be aware that a lot of features this platform offers do require us to buy full version. The coffee-cup html editor was ~~develop~~ a traditional editor.

(4) Notepad++ ~~Notepad~~:

It is a latest and easy html editor. It offers many other languages to edit such as C, C++, java etc. Notepad++ is the extend version of traditional notepad. It helps us to detect the tags, predefined

keywords and errors. This tool is simple to use but we need broswer to execute the code.

Use of Photoshop in Webdesign:

Photoshop is an image editing software developed and manufacture by adobe systems. Photoshop is considered one of the best photo editing software. It allows the users to manipulate, crop, resize, & correct color on digital photos. The software is particular popular among professional photographs and graphic designer. We use photos, logos, ~~and~~ graphical design, simple animations or, graphical button and user interactive themes in web. Such things can be created easily using photoshop tool so photoptshop plays an ~~very important~~ important role in web design.

Date:
Page:

Frame:-

HTML frames are used to ~~divide~~ divide our broswer window into multiple sections where each section can load a ~~spe~~ seprate html document. A collection of frames in the broswer window is known as frameset. The window is divided into frames in a similar way the table are organized into rows and columns.

Disadvantages of frames

There are few drawbacks with using frames such as:-

1) Some smaller devices cannot fit with frames ~~becaa~~ because their screen is not big enough to be divided.

2) Sometimes our page will be displayed differently on different computers due to different screen resolution.

3) The broswers back button might not work as the user hopes.

4) Then are still few broswers that donot support frame technology.

Date:
Page:

Creating frames:-

To use frames on a page, we use <frameset> tag instead of <body> tag. The <frameset> tag defines how to ~~def~~ divide the window into frames. The rows attribute of <frameset> tag defines horizontal frames & cols attributes defines vertical frames. Each frames is indicated by <frame> tag and it defines which html documents should open into the frame.

Example:-

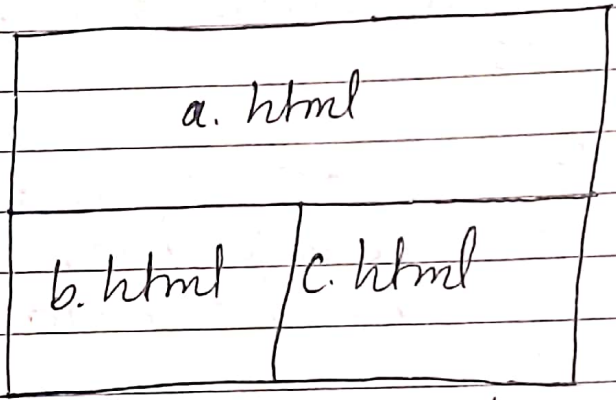


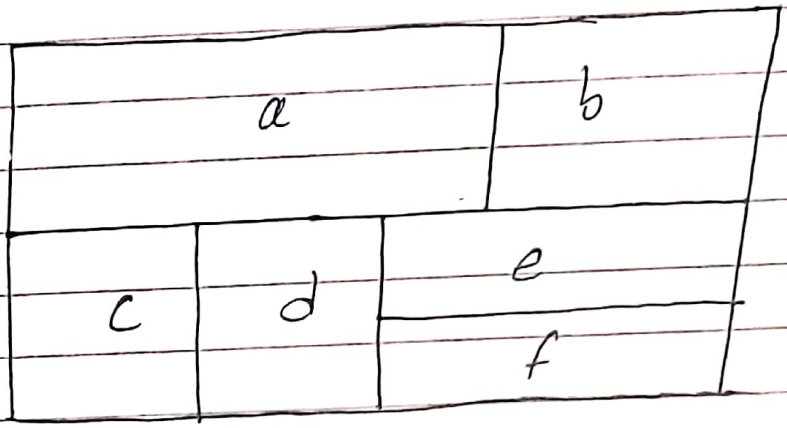
fig: framing Example

```
<html>
<head> <title> frame </title> </head>
 <frameset rows="50%, 50%">
    <frame src="a.html">

    <frameset cols="*,*">
    <frame src="b.html">
```

```
<frame src = "c.html" >
  </frameset>
</frameset>
</html>
```

Ex 2:




```
<html>
<frameset rows = "*, *" >
  <frameset cols = "70%, 30%" >
   <frame src = "a.html" >
   <frame src = "b.html" >
    </frameset>
  <frameset cols = " 25%, 25%, 50%" >
   <frame src = "c.html" >
   <frame src = "d.html" >
   <frameset rows = "*, *" >
    <frameset ~~rows = "*"~~ src = "e.html" >
    <frame src = "f.html" >
    </frameset>
  </frameset>
</frameset></html>
```

Date:
Page:

The <frameset> tag attributes

① Cols: Specifies the no of colums that are contained in frameset and size of each column.
- Absolute value in pixels are cols = "100,500,100"
- percentage value in pixels use cols = "20%, 40%, 40%"
- Use * symbol such as cols = "20%, *, 30%"
  * represent remaining partion.
- Relative width of the broswer use cols = "2*, 3*, 1*"

② Rows: Specifies the no of rows that are contained in a frameset and size of each rows similar to cols attributes the rows attribute can take the values.

③ border:- It represent the width of the border.
eg border = "5".

④ Frame border: This attribute takes the values either 0 or 1 eg frameborder = "1".

⑤ The <frame> tag attributes

① Src :- Use to give the source which is load in the frameset. Its value can be url of html file.

Date:
Page:

② Name:- It gives the name to a frame It is used to indicate which frame a document should be loaded into.

③ Frameborder:-
It species whether or not the border of that frame are shew. It takes the value either 0 or 1.

④ marginwidth:-
Allows us to specify the width of space between the left and right of the frames border and frame's content.

⑤ Marginheight:-
Allows us to specify the height of space between the top and bottom of the frame's broder and frame's content.

Introduction to HTML5

HTML 5 is the fifth and current version of HTML. It has improve the markup available for documents and have introduce application programming interfaces (API) and document object model (DOM).

Features:-

(I) Supports audio and video controls using <audio> and <video> tag.

(II) There are new graphic elements including vector graphics and tags.

(III) Drag and drop feature.
(IV) Geo-location Services.
(V) Web storage facility.
(VI) Use sql database to store data offline.
(VII) Allows drawing varrous shapes like cricle, triangle, rectangle etc.
(VIII) Capable of handling incorrect Syntax.

Advantages:-

(*) All broswer supported
(*) More device friendly.
⇒ Easy to use and implement
⇒ HTML5 in integration with CSS, Javascript etc

can built beautiful application.

Disadvantages:-

⇒ long codes have to be written which is time consuming.

⇒ Only latest version of browsers support it.

HTML-5 Semantics:
HTML tags are classified into two types:-
① Semantic
② Non-Semantic

▷ Semantic Elements:
Semantic elements have meaningful names which tell about type of content. For example: header, footer, table etc. HTML 5 introduces many semantic elements as mentioned below ~~such~~ which make the code easier to write and understand for the developer as well as instructs the broswer on how to treat them.
article, details, aside, figcaption, figure, footer, header, main, mark, nav, section are semantic elements.

2) Non- Semantic elements:

Tags like div, span fall under non semantic categories as their names don't tell anything about kind of content is present in it.

div is a block level element or division of section. It is used as a container.

HTML 5 new elements :-

① <article>:

This tag is used to represent an article.

② <aside>:

The <aside> tag is used to describe the main object of the web page in a shorter way like a highliher

③ <figcaption>:

This tag is used to set a caption on the figure element.

④ <figure>

This tag is used to add diagrams or photos in a documenter.

Date:
Page:

(5) <footer>

This tag is used to define the footer of html document.

(6) <main>

It defines the main contain of the body of a document.

(7) <mark>

This tag is used to define the marked text.

(8) <nav>

This tag is used to declare the navigational section in html documents

(9) <time>

This tag is used to display the human readable time.

(10) <wbr>

This tag in html stands for word break opportunity.

(11) <output>

This tag is used to represent the result of calculation performed the client side script

Date:
Page:

(12) <svg>
It is a tag used to define scaleable vector graphics.

(13) <canvas>
This tag in html to draw graphics on webpage using javascript

(14) <audio>
It defines the music or audio content.

(15) <video>
It defines the video ~~contain~~.
content.

(16) <section>
It defines the sysmetic grouping of content.

(17) <meter>
It defines the scalar measurement within a known range.

(18) <source>
It defines the source for <video> ~~tag~~ and <audio> tag.

Date:
Page:

(19) <track>

It defines the track for <audio> and <video> tag.

(20) <bdi>

It differentiates the text from other text that may be formatted in different directions.

Examples :-

① <aside>
<h3> contents -- </h3>
 contents --
</aside>

② <figure>
<img src="a.jpeg">
<figcaption> my picture </figcaption>
</figure>

③
<footer>
 copyright to CTC college
</footer>

(iv) meter tag
Anil's score : <meter value="5" min="0"
max="10"> 5 out of 10 </meter>

(v) <details>
<summary> My homework </summary>
 computer science engineering
 This is engineering
</details>

HTML Graphics

① HTML Canvas :-
The html canvas element is used to draw graphics, on the fly, via javascript. The canvas element is only the <canvas> tag for graphics. We must use javascript to actually draw the graphics. Canvas has several methods for drawing paths, circles, boxes, text and adding images. A canvas is a rectangular area on an html page. By default, a canvas has no border and no content.

Example:

```
<canvas id="my-canvas" width="700"
height="400"> </canvas>
```

Date:
Page:

(11) HTML SVG :-

SVG stands for scaleable vector graphics. It is used to define the graphics for the web. The html <svg> element is a container for svg graphics.

SVG also has several methods for drawing lines, boxes, circles, text and graphics images.

Ex:

```
<svg width="100" height="100">
  <circle cx="50" cy="50" r="40"
  stroke="green" stroke-width="4"
   fill="yellow">
</svg>
```

HTML Multimedia:

Multimedia on the webpages is sound, music, videos, movies and animations. Multimedia comes in different formats. It can be almost anything we can hear or see. Web pages often contain <multimedia> elements of different types and formats. HTML 5 multimedia promises and easier future for multimedia.

Before html-5, a video would only be played in a broswer only with a plugin (like flash). The html-5 <video> specifies the standard way to embed a video in a webpage. To start a video

automatically use the autoplay attribute. In HTML-5, three supported video formats are mp4, ogg & webm.

Eg:

```
<video width="320" height="240" autoplay>
  <source src="movie.mp4" type="video/mp4">
</video>
```

Before HTML-5, a audio file would only be played in a browser with a plug-in (like flash). The HTML-5 <audio> tag specifics a standard way to embed a video in a webpage. There are 3 audio supported formats are mp3, wav & ogg.

The controls attribute adds audio controls, play, pause and volume.

```
<audio controls>
  <source src="music.ogg" type="audio/ogg">
</audio>
```

Date:
Page:

Use of flash in web design:

Flash is a software technology for creating and managing interactive multimedia web applications (like:- websites, animations, movies, games, advertisement, banners and more). It gives us almost unlimited options in the design of our pages.

Flash movies/sites are proceded entirely by the viewer's computer and not by the server. This makes the technology less server demanding but still a good webhost should be picked for the overall stable and fast performance of our site.

macromedia argues that the flash is the way to go instead of HTML because of the following reasons:-

→ Flash movies loads faster and save on download time because flash is vector based where as HTML is not.

→ Flash intelligently caches its movies so they dont have to be reloaded.

→ Flash gives the user a more responsive 'rich-client' like experience.

→ We can do some really nice work in flash that would be difficult and sometimes impossible in HTML alone.

Use of Embed tag

Sometime we need to add music or videos into our webpages. The easier way to add videos or sound in our web site is to include the special HTML tag called <embed> tag. This tag causes the broswer 'itself' to include controls for multimedia automatically provided broswer supports <embed> tag and green media type we can also include a <noembed> tage for the broswer which don't recognize the <embed> tag.

The <embed> tag is supported in almost major browsers. The <embed> tag also defines an embeded object with in html document.

```
<embed src="html/mymusic.mp3" width="150"
height="60">
  <noembeded> <img src="mypic.gif">
  </noembeded>
  </embed>
```

Date:
Page:

Attributes:

① Align- Determines how to align object
② autostart- media starts automatically.

(III) loop- played continuously
(IV) playcount- specifies the no of times to play a sound.

(V) hidden- Takes values true or false that hides or shows the element on the page.

(VI) width- width of the object
(VII) height- Height of the object
(VIII) Name- specifies the names of object
(IX) volume- control the volume of the sound.

Date:
Page:

(*) Document Object Model (DOM):-

DOM is an application program interface (API) for html and XML document. It defines the logical structure of documents and the way a document is accessed and manipulated. In the DOM, the term document is use in broad sense.

Every webpage resites inside a broswer web window, can be considered as an object. A document object represents the html document that is displayed in that window. The document object has various properties that refer to the offer objects which allows access to and modification of document content.

The way, a document content's accessed and modified is called Document object model or DOM. The objects are organized into a hierarchy. This hierarchical structure applies to the organization of objects in a web document.

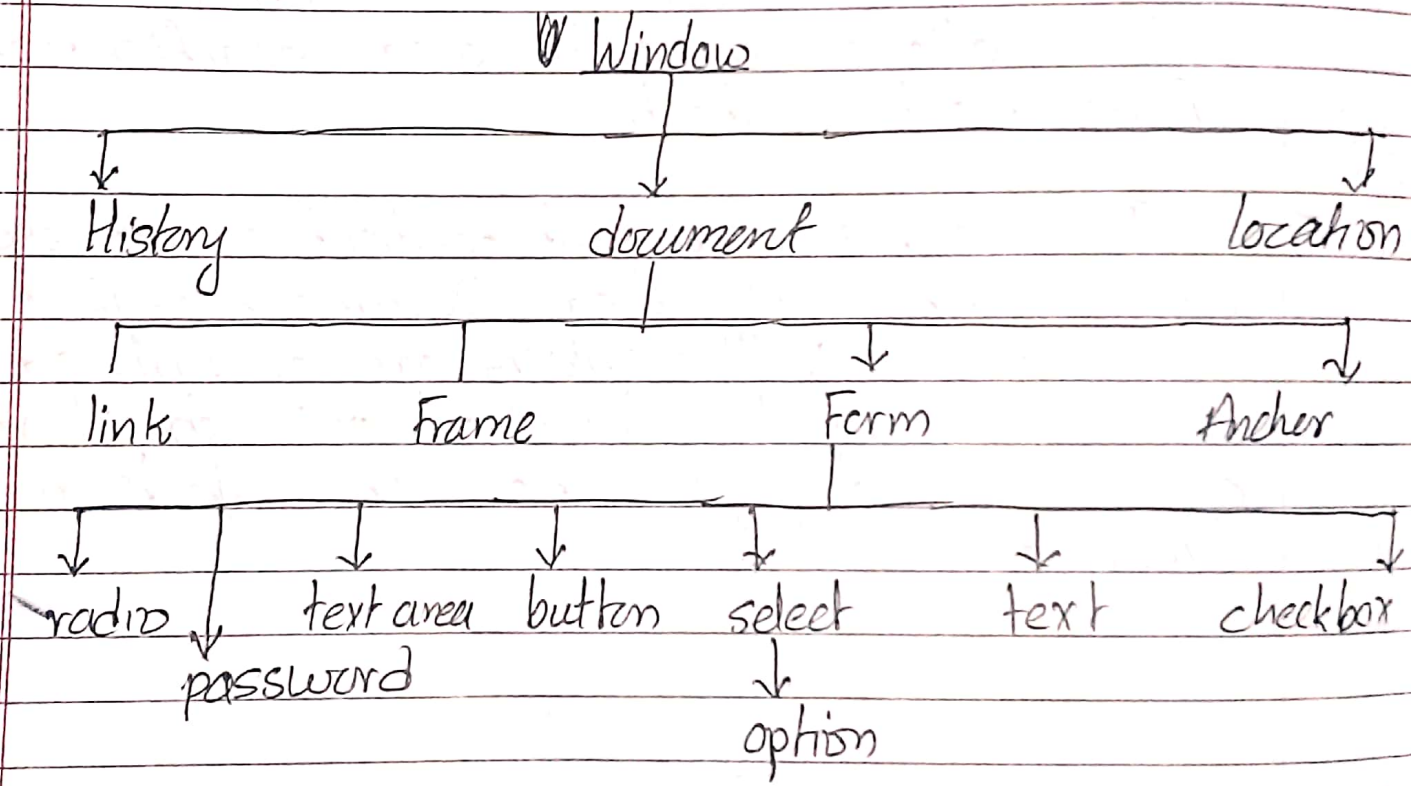
Date:
Page:

→ Window object:- Top of the hierarchy.
→ Document object:- The document contains the contents of the page.

→ Form object:- Everything enclosed in the <form> & </form> tags sets form object.

→ Form controls elements:- radio buttons, text boxes, submit button etc.

Here is a simple Hierarchy of few important objects.



Date:
Page:

Cascading Style Sheets (CSS)

CSS is a simple mechanism for adding style (Example: Fonts, Colors, Spacing) to the web documents.

CSS describes how html elements are to be displayed on screen, paper or in other media. CSS saves a lot of work. It can control the layout of multiple web pages all at once. External style sheets are stored in CSS file.

CSS is used to define the styles for our web pages, including the design, layout and variation in display for different devices and screen sizes. It is a powerful mechanism for changing the layout and looks of web document. In formal it is a makeup tool for web pages.

The Advantages of Style Sheet include the ability to make global changes to all document from a single location. Style Sheet are said to cascade when they combine to specify the apperance of a page.

- The style assignment is done with the <style>-- </style> tag. It may contain a lot of attributes to describe more.

Date:
Page:

Example:

Syntax:-

```
<style type="text/css">
  Tag {attribute: value;
       attribute: value;
      }
</style>
```

Eg

```
p
{
color: red;
text-align: center;
}
```

Benefits of CSS:-

1) Seperation of content and presentation.
2) Smaller web page file size.
3) Improved webpage download speed.
4) Improved rendering speed.
5) Changing presentation for different devices.

Date:
Page:

External Style sheets:

External Style sheets are composed of standard text, which consists of a series of entrie, Each composed a selector and declaration. The selector indicates the html elements affected by the properties in the declaration. These external style sheets are then saved as a file with exetension .css which can be linked, to a webpage via the <link> tag. Such as

```
<link rel="stylesheet" href="mystyle.css">
```

Eg:

```
<head>
<link rel="stylesheet" type="text/css"
 href="mystyle.css">
 </head>
```

With an external style sheet, we can change the look up an entire website by changing just one file. An external style sheet can be written in any text edition. The file should not contain any html tags. The stylesheet ~~file~~ file must be saved with a ~~dot~~ .css exetension.

Here, Is how the "mystyle.css" looks:

```
body {
    background-color: lightblue;
    }
```

Date:
Page:

```
h1 {
    color: red;
    margin-left: 20px;
}
```

Introduction to Margins:

The CSS margin properties are used to generate space around elements. The margin properties set the size of the whitespace outside the border. With CSS we have full control over the margins. There are CSS properties for setting the margin for each side of an element (top, right, left & bottom).

All the margin properties can have the following values:

→ **auto:**
The broswer calculate the margin.

→ **length:**
Specific the margin in px, pt, cm etc.

→ **%** -
Specifics the margin in percentages of the width of the containing element.

→ inherit:
Specifics the margins should be inherited from the parent element.

Example:-

```
p {
margin-top: 100 px;
margin-right: 100 px;
margin-bottom: 50 px;
margin-left : 80 px;
}
```

To shorten the code, it is possible to specific all the margin in one property.

Example:

```
p {          {top  right  bottom  left}
margin: 25px  50 px  75 px  100 px;
```

We can set the margin property to auto horizontally center the element within its container. The element will then take up the specified ~~width~~ width and the remaining will be split equally between the left and right margins.

Date:
Page:

Margin-collapse:

Top and bottom margins are sometime collapse into a single margin that is equal to the larger of two margins. This doesnot happen on left and right margins.

eg; h1 { margin: 0 0 50px 0; }
eg; h2 { margin: 25px 50px 75px; }

Class

A particular paragraph may need to look different from others paragraphs. It is probably because the content of the paragraph is in some way different from the other paragaraph. The apperance of paragraph is a function of the content of the paragraph.

Style sheet support classes or set of styles changes for a document. A class can be defined to change the style in specific way for any element. It is applied to and class can be used to identify the logical set of style changes that might be different for different html elements.

The html class attribute make it possible to define equal styles for elements within the same class name.

Date:
Page:

In the example we have three elements that can point to the same name.

Eg:

```
<!doctype html>
<html>
<head>
<style>
div.cities {
        background-color: blue;
        color white;
        margin: 20px 0 20px 0;
        padding: 20 px;
        }
</style>
</head>
<body>
<div class = "cities">
<h2> Kathmandu </h2>
<p> Kathmandu is capital of Nepal.
</p>
</div>

<div class = "cities">
<h3> pokhara </h3>
<p> pokhara is a city of Seven lakes.
</p>
</div>
<div class = "cities">
<h2> Butwal </h2>
<p> Butwal is located at province
        number five </p>
```

Date:
Page:

</body>
</html>

HTML ~~&~~ DIV Tag

⇒ All webpage can be divided into segments or divisions called divs. Each segment start with tag and ends to . These segment can be positioned anywhere on the page. The tag has a position attribute that can take two values, absolute or relative. Absolute position the segment with respect to the top/left edge of the broswer window. In constrast with absolute, relative position the segment in relation to other elements on the page.

The html tag is used for defining a section of our document. With the tag we can group large sections of html element together and format them with css.

For example:

```
<html>
<body>
  <p> This is Some text </p>
  <div style="color:#0000FF">
```

Date:
Page:

<h3> This is heading in a div element </h3>
 This is some text in div element

 This is outside of div element
</body>
</html>

eg:

```
<div class="outer_div">
    This is div tag.
    <div class="inner_div">
        contains this div tag.
    </div>
</div>
```

Layer

HTML2 document content layers are each defined with the <layer> tag. A layer tag can be thought of as a miniature HTML document whose content is defined between the <layer> and </layer> tags. Alternatively, the content of the layer can be retrieved from another HTML Document by using src attribute with the layer tag.

The <layer> tag and </layer> tag each start with a new layer, and the </layer> and </layer> tag end the layer.

Layers defined with the <layer> tag can be explicitely positioned by setting top and left attributes. If we do not set either of these attributes, they default to the left and top values of the current position in the containing layer. For a layer at the top level, we can think of the document as the container layer.

The html <layer> tag is used to position and animate elements in the page. A layer can be though of as a seperate document that resides on the top of main one, all existing with in one window.

Eg Syntax:

```
<layer id="layer 1" top="250" left="50"
  width="200" height="200" bgcolor="red">

  <p> layer 1 </p>
</layer>
<layer id="layer 2" top="350" left="150"
  width="200" Height="200" bgcolor="blue">
</layer>
```

Javascript

Date:
Page:

Introduction

A script is a small piece of program that can add interactivity to our website.
Now-a-days, only Javascript and associated frameworks are being used by most of the web developers, VBScript is not even supported by various major browsers.

You can keep Javascript code in a separate file and then include it wherever it's needed, or you can define.

External Javascript

It's better to keep that functionality in a separate Javascript file and then include that file in our HTML documents. A Javascript file will have extension as .js and it will be included in HTML files using <script> tags.

In HTML, Javascript code must be inserted between <script> and </script> tags.
The <script> element either contains script statements, or it points to an external script file through the src attribute.
Common uses for Javascript are image manipulation, form validation, and dynamic

Date:
Page:

changes of content.

Example:

```
<!DOCTYPE html>
<html>
 <head>
   <title> Javascript External Script</title>
   <script src="/html/script.js" type="text/
  javascript" /> </script>
</head>
<body>
 <input type="button" onclick="Hello();" name=
"ok" value="Click Me" />
</body>
</html>
```

The HTML <noscript> Tag

The <noscript> tag is used to provide an alternate content for users that have disabled scripts in their browser or have a browser that doesn't support client-side scripts:

```
<noscript> Sorry, your browser does not support
Javascript ! </noscript>
```

Date:
Page:

Javascript Functions and Events:

- A JavaScript function is a block of code designed to perform a particular task.

- A JavaScript function is executed when "something" invokes it (calls it).

- A JavaScript function is a block of Javascript code that can be executed when "called" for. For example, a function can be called when an event occurs, like when the user clicks a button.

Syntax:

```
function name(parameter1, parameter2, parameter3)
{
  // code to be executed
}
```

Eg:

```
function myFunction(p1, p2)
{
 return p1 * p2;
}
```

When Javascript reaches a return statement, the function will stop executing.

Date:
Page:

```
var x = myFunction(4,3);
function myFunction(a,b)
{
  return a*b;
}
```

Javascript objects:

- Objects are variables too. But objects can contain many values.

- This code assigns many values (Fiat, 500, white) to a variable named car:

- The name:values pairs in JavaScript objects are called properties:

- Objects can also have methods.

- Methods are actions that can be performed on objects.

Eg:

1. `Var car = {type:"Fiat", model:"500", color:"white"};`
2.
```
var person = {
  firstName: "John",
  lastName: "Doe",
  age: 50,
  eyeColor: "blue"};
```

Date:
Page:

JavaScript Events

- HTML events are "things" that happen to HTML elements.
- When Javascript is used in HTML pages, Javascript can "react" on those events.

An HTML event can be something the browser does, or something a user does.
Here are some examples of HTML events.

- An HTML web page has finished loading
- An HTML input field was changed
- An HTML button was clicked.

```
<button onclick="displayDate()">The time is?
</button>
```

Common HTML Events

Here is a list of some common HTML events:

Event	Description
Onchange	An HTML element has been changed
Onclick	The user clicks on HTML element
Onmouseover	The user moves the mouse over an HTML element
Onmouseout	The user moves the mouse away from an HTML element.

Date:
Page:

Onkeydown	The user pushes a keyboard key
Onload	The broswer has finished loading the page.

JavaScript - Image Map

- We can use Javascript to create client-side image map. Client-side image maps are enabled by the usemap attribute for the <img /> tag and defined by special <map> and <area> extension tags.

- The image that is going to form the map is inserted into the page using the <img /> element as normal, except that it carries an extra that it carries an extra attribute called usemap.

- The value of the usemap attribute is the value of the names attribute on the <map> element, which you are about to meet, preceded by a pound or hash sign.

- The <map> element actually creates the map for the image and usually follows directly after the <img /> element. It acts as a container for the <area /> elements that actually define the clickable hotspots.

Date:
Page:

Syntax:

```
<map name="tutorials">
<area shape="poly" coords="74,0,113,29,98,72,
                           52,72,38,27"
 href="/perl/index.htm" alt="Perl tutorial"
 target="_self" onMouseOver="showTutorial('perl
" onMouseout="showTutorial('')" />
</map>
```

JavaScript Browser Object

The Browser Object Model (BOM) is used to interact with the broswer.
The default object of browser is window means you can call all the functions of window by specifying window or directly.

For example:

```
window.alert("hello javatpoint");
```

References to various BOM elements.
window : The main browser window
window.navigator: Information about the browser itself.
window.screen: The user's screen
window.history: URLs visited by a user
window.location: The current URL.

Date:
Page:

Ex Open a new window when clicking a button:

```
<!DOCTYPE html>
<html>
<head>
<script>
function openWin() {
window.open("https://www.mysite.com");
}
</script>
</head>
<body>
<form>
<input type="button" value="Open Window"
onclick="openWin()">
</form>
</body>
</html>
```

Validation, Errors, Debugging, Exception Handling and Security

An Important aspect of secure application development is to prevent information leakage. Error messages give an attacker great insight into the inner workings of an application.
The purpose of reviewing the Error Handling code is to assure the application fails safely under all possible error conditions,

Date:
Page:

expected and unexpected. No sensitive information is presented to the user when an errors occurs.

- Validating a website is the process of ensuring that the pages on the website conform to the norms or standard defined by various organizations.

- The Exception Handling in Java is one of the powerful mechanisms to handle the runtime errors so that normal flow of the application can be maintained.

- Debugging is the routine process of locating and removing computer programs bugs, errors or abnormalities.

Date:
Page:

Introduction of jQuery

- The purpose of jQuery is to make it much easier to use JavaScript on a website.
- jQuery is a lightweight, "write less, do more", Javascript library.
- jQuery takes a lot of common tasks that require many lines of JavaScript code to accomplish.
- jQuery also simplifies a lot of the complicated things from JavaScript, like AJAX calls and DOM manipulation.
- The jQuery library contains the following features:
  - HTML / DOM manipulation
  - CSS manipulation
  - HTML events methods
  - Effects and animations
  - AJAX
  - Utilities

jQuery - Selectors

➢ jQuery selectors allow you to select and manipulate HTML element(s).
➢ jQuery selectors are used to "find" HTML elements based on their name, id, classes, types,

attributes, values etc.

➤ All ~~see~~ selectors in jQuery start with the dollar sign and parentheses: $().

➤ We can select all <p> elements on a page like this: $("p")

Examples of jQuery Selector

$("*"): Selects all elements
$(this): Selects the current HTML element
$("p.intro"): Select all <p> elements with class = "intro"
$("p.first"): Select the first <p> element
$("[href]"); Selects all elements with an href attribute

jQuery - Attributes

jQuery attr() Method :-

The attr() method sets or returns attributes and values of the selected elements.

When this method is used to return the attribute value, it returns the value of the FIRST matched element.

➤ Return the value of an attribute:
$(selector).attr(attribute)

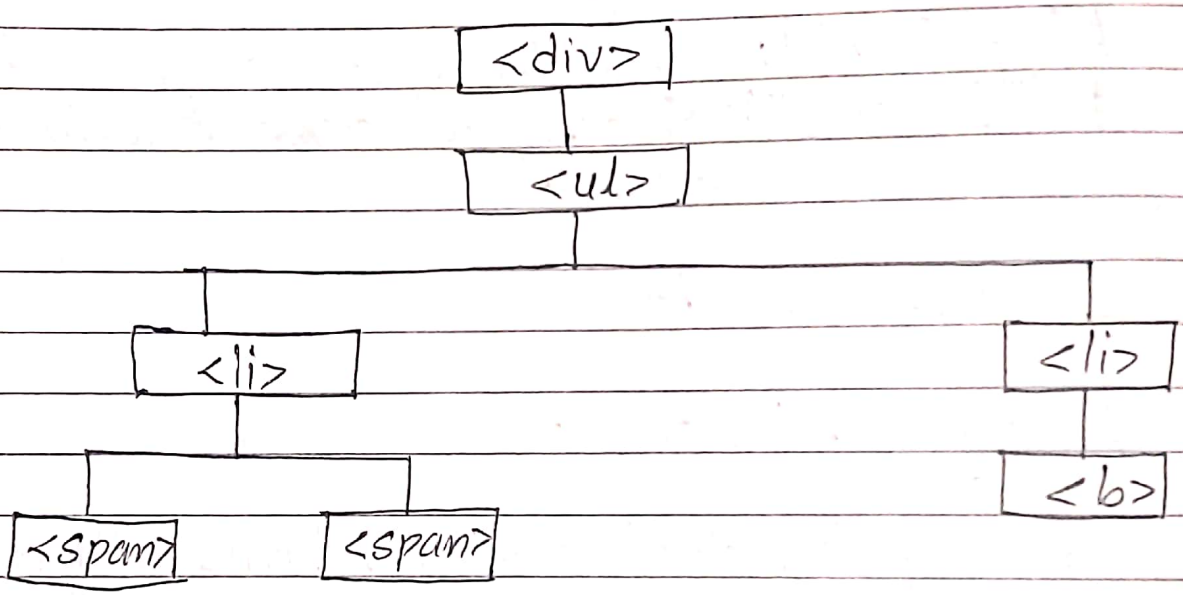
➤ Set the attribute and value:
$(selector).attr(attribute, value)

Date:
Page:

jQuery Traversing:

jQuery traversing, which means "move through", are used to "find" HTML elements based on their relation to other elements. Start with one selection and move through that selection until you reach the elements you desire.

The image below illustrates an HTML page as a tree (DOM tree). With jQuery traversing, we can easily move up, down, and sideways in the tree, starting from the selected element.



Date:
Page:

jQuery CSS:

The css() method sets or returns one or more style properties for the selected elements.

- To return the value of a specified CSS property, use the following syntax:
  - css("propertyname");

- To set a specified CSS property, use the following syntax:
  - css("propertyname", "value");

- The following example will set the background-color value for ALL matched elements:
  - $("p").css("background-color", "yellow");

jQuery Events

An event represents the precise moment when something happens.
Examples:

- moving a mouse over an element
- selecting a radio button
- clicking on an element

In jQuery, most DOM events have an equivalent jQuery method.

Date:
Page:

To assign a click event to all paragraphs on a page, you can do this:

- $("p").click();

click(), dblclick(), mouseenter(), mouseleave(), mousedown(), mouseup(), hover(), focus() etc are the popular events.

jQuery effects

Method	Description
animate()	Runs a custom animation on the selected elements
clearQueue()	Removes all remaining queued functions from the selected elements
delay()	Sets a delay for all queued functions on the selected elements
dequeue()	Removes the next function from the queue, and then executes the function
fadeIn()	Fades in the selected elements
fadeOut()	Fades out the selected elements
FadeTO()	Fades in/out the selected elements to a given opacity