HTML

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Table tag

A table is a 2D matrix which contains rows and columns and to create a table we use table tag
There are two types of rows in a table.

1) Heading <TH> </TH> defines header cell
2) Data <TD> </TD> defines a single cell
<TR> defines a new row

Horizontal alignment is controlled by align attribute and it can take values left, right, center

vertical alignment of self content, values can be top, middle, bottom

width - to set width to a specific number of pixels
Border - controls the border to be placed around the table.

Cell-Padding : controls the distance between data and boundary of the cell

cell-spacing : controls the spacing between adjacent cell.

Row-span : allow the cell to take more than one row

column-span : colspan it instructs the browser to make cell define by the tag to take more than one column
TD, TH

Caption : gives name to a table align can be used with caption. Top and bottom

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SNo	Name
1	RAM

Student record

Date

```
<Doctype>
<html>
<body>
  <table  align="center"  border="2"  valign="middle
          cell padding="10"  cell spacing="10"
          width="50%">
  <TR> <TH> SNO </TH> <TH> Name </TH> </TR>
  <TR> <TD> 1 </TD> <TD> RAM </TD> </TR>
  <CAPTION  ALIGN="bottom"> Student Record </caption>
  </table>
  </body>
  </html>
```

span 3 cells

	MARKS		
NAME	C	C#	Java
RAM	6	4	5
GEETA	10	8	5

span 2 rows

Marksheet

```
<DOCTYPE>
<html>
<body>
<table  align="center"  valign="middle"  cellpadding="10"
        cell spacing="10"  border="2"  width="50%">
<TR> <TH> NAME </TH> <TH colspan="3" > Marks </TH>
                                                  </TR>
<TR> <TH> C </TH> <TH> C# </TH> <TH> Java </TH>
                                                  </TR>
<TR> <TD> RAM </TD> <TD> 6 </TD> <TD> 4 </TD> <TD> 5 </TD>
                                                  </TR>
```

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Two table dimension tags → <TR> and <TD>

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```
<TR> <TD> GEETA </TD> <TD> 10 </TD> <TD> 8 </TD> <TD> 5
                                                  </TD>

  </Table>
  </body>
  </html>
```

Q. Design a web page to implement internal hyperlinking

Q1. Design a web page to create your own CV using various text formatting tags of HTML

Creating Hyperlinks

HTML allows linking of one document to the other with the help of anchor tag. Anchor tag can link a document to text, image audio or video file. The text or an image that provide such linkage is called hypertext, hyperlink or hotspot

Syntax: <a href=" ">

Characteristics

1) It appears in blue color, it is underlined
2) when cursor is placed over it, it changes to handshape

internal Hyperlink < a href = "wikipedia.html # ordinary"
<a href = "# id">

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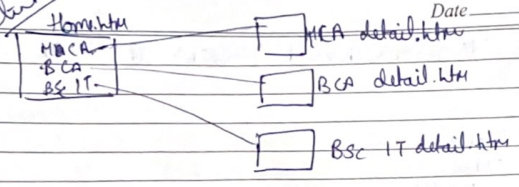
External linking




```
<!DOCTYPE>
<html>
<Body>
<H1> <a href="MCA_detail.htm"> MCA </a>
<H1> <a href="BCA_detail.htm"> BCA </a>
<H1> <a href="BSCIT_detail.htm"> BSCIT </a>
</body>
</html>
```

Concept of Image Mapping

Image map is used to divide an area (image into various portions) that are hyperlinked.

Syntax : <Map name="M1">
<Area shape="" coords="" href="">
</Map>
<IMG SRC="" Use Map="#M1">

Attributes description
Shape : It specifies shape of the region it can take values rect, circle, polygon, default

Coords: set coordinates of the shape. If the shape is rect = (x_1, y_1, x_2, y_2)
circle = $(x_0, y_0$, radius)

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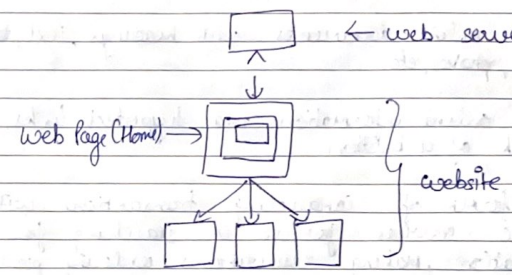
polygon = tri- 3 points etc

href : url of the document

WEB Architecture



Web Server: A computer including software package, that provides a specific kind of service to client software running on other computers. A system which accepts web page requests from the client Machines and redirect the request to the Machine which holds the relevant website containing the web page.

Website: A homogenous collection of web Pages.

Web Page: A consolidated page designed and developed with an intention of displaying information.

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HTML stands for HyperText MarkUp Language. It is a special kind of text document that is used by web browsers to present text and graphics. HTML documents are often referred to as "Web pages". The browser retrieves web pages from web servers

Features

1) Publish online documents with headings, text, table, lists, photos, etc

2) Retrieve online information via hypertext links, at the click of a button

3) Design forms of conducting transaction with remote services, for use in searching for information, making reservations, ordering products, etc

4) Include spread-sheets, video clips, sound clips and other applications directly in their documents.

5) HTML is case insensitive i.e the case used to open and close the tag is not strictly monitored

6) <HTML> </html> will have the same effect

7) HTML provides a pre-defined set of tags that can be used to present any kind of data and information

8) Most of the tags that are used in coding the HTML document are easily parsed by any kind of browsers

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HTML Tags

It is a Mark up - inserted into an HTML document to provide information about a unit of content.

Identify a page element's type, format, and appearance

All HTML tags are enclosed in brackets (i.e <table>)

Some tags require closing tags - though all tags must have a closing it is not strictly checked in normal web page. But for some tags (like Text-area) the closing tags are mandatory.

Types of HTML tags

1) Layout Tags
- Basic Tags
- Structural Tags

2) Semantic Tags
- Presentation Tags
- Links & Graphics
- Lists
- Dividers
- Backgrounds & Colors
- Special Characters

3) Application Tags
- Forms
- Tables
- Frames

4) Logical Tags
- Emphasized tag
- Strong tag
- Code tag

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Layout Tags: Define the appearance of the webpage. It talks about the overall look of the webpage where which text should appear where and which image should appear where is decided.

Semantic Tags: On contrary to Layout tags which define where the text/image is to be displayed the semantic tags define how they should be displayed. They define the format in which the text/image should be displayed.

Application Tags: These tags are used for creating advanced and complex arrangements of webpage's (Ex frames) and also to provide a base for user interaction.

Layout Tags

- Defines the layout of the web page
- Defines what text goes where and is displayed where
- A Typical HTML page starts and ends with <HTML> tags
- The entire page is divided into two logical sections the Head and the Body.

The Head section is enclosed by <Head> Content </Head> generally contains information recurring in more than one page eg Company Logo. The Head also includes the Title Section enclosed by <Title> </Title> and text between this tag is displayed in the title bar of the browser.

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The BODY section is enclosed by <BODY> Content </BODY> generally contains information that is normally not repeated.

Structural Tags

<H?> </H?> Heading tags '?' Ranges from 1 to 6

<Pre> </Pre> Preformatted Text

Heading Tags

eg <H1> Hello World </H1>

Preformatted Tags

used to apply structural exactness to that of the text in the editor

eg <Pre>

text

</Pre>

Semantic Tags

Presentation Tags

These tags are used to present text on the web page

eg <B> for bold , <I> for Italicizing the text.

Links & Graphics

These tags are used to link text from one page to another or on the same page.

eg hyperlinks & bookmarks

Lists

Used to display items in form of a list of terms

eg ordered list, unordered list & Glossary list

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Dividers
Used to make a clear differentation between text
eg Paragraph, line dividers

Backgrounds and Colors
Used to change the Background colors or images

Special characters

Example
```
<HTML>
<HEAD> </HEAD>
<BODY>
This is the default text format <BR>
<FONT NAME="IMPACT" SIZE="12" COLOR="RED">
This is the from Font Tag </FONT><BR>
<B> This is a Bold Text, </B> <BR>
<I> This is a italicised Text, </I> <BR>
<U> This is underlined text </U> <BR>
Text like date require to be super scripted
like this 12 <SUP> th </SUP> <BR>
and when writing chemical formulas like
that of water H <SUB> 2 </SUB> O <BR>
</BODY>
</HTHL>
```

Presentation Tags: Bold <B></B> Superscript
Italic <I></I> Subscript
Underline <U></U>

Links & Graphics: Anchor <A>

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The word hyper stands for "Without limits" i.e there is no boundary. The Anchor <A> tag is used to hook a link in one place which links that point to point which can exists any where in the Internet.

An anchor can be used to create a link to another document (with href attribute) or to create a bookmark inside a document (with the name attribute)

Syntax:
```
<A HREF="URL">Display Text </A>
```

Types of links

1) Internal links: Internal links again are of two types one links a point from one page to another page in the same website and the other links a point from a page to another point in the same page (Bookmark)

2) External links: External links are most similar to that of first type of Internal links only difference is that the link is pointing to an external page (out of the scope of the current existing page).

Hyperlink: It can be created like
```
<A HREF="URL" TARGET="FRAME">Display Text</A>
```
Two attributes
HREF → Hyper reference
Target → tells the browser regarding where it has to open the newly requested page.

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values for TARGET attribute

- "_main" same window
- "_blank" new window
- "_parent" same window (regardless of frames)

BookMark: Create a bookmark for whom a link can be created

<A Name="Bookmark Name"> Display BookMark Title </A>

Creating a link to already created Bookmark

<A HREF="#BookmarkName"> Display link to bookMark </A>

diff b/w bookmark & hyperlink is hyper reference starts with "#" symbol.

Creating bookmark <A Name="Book"> Bookmark</A>

Creating link to bookmark

<A HREF="#Book"> Go to Bookmark </A>

Image: <Img SRC="URL" ALT="Alternate Text">

SRC= used to mention the path where the Image file is located and image file name.

ALT= used to display an alternate text in case the image file could not be loaded.

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List

Three types of list

1) Glossary List: If the terms are displayed in the form of subtitle followed by a description then the list is called as a Glossary list. The entire on this particular page can be treated as a Glossary list.

<DL> </DL>

DL → definition list → signifies the starting & closing of GL

DT → Term → title to be defined <DT> </DT>

DD → Data → data to be displayed <DD> </DD>

eg

```
<DL>
<DT> Coffee </DT>
    <DD> Black hot drink </DD>
</DL>
```

output: Coffee
Black hot drink

2) Ordered List: The sequence is of much more importance as the no of terms, they are listed with the help of numbering sequence.

eg

```
<OL TYPE="A">
    <LI> Country </LI>
    <OL Type="1">
        <LI> India </LI>
    </OL>
</OL>
```

output: A. Country
1. India

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3) Unordered list: If the sequence of the terms is not of much importance then the terms are listed under unordered list where the terms are listed with the help of bullets.

eg

```
<UL TYPE = "Square/Circle/Disc">
    <LI> Country </LI>
        <UL TYPE = " ">
            <LI> India </LI>
        </UL>
</UL>
```

Paragraph: <P> </P> used to divide the entire text into paragraph.

```
<p align = "left/center/right/Justify">Text</p>
```

Line Break:

Dividers: <HR> is used to include a horizontal line whenever necessary. It has two attributes Align and size to mention the alignment and the size of the line. It also has color attribute to mention the color for the line. It is basically used to mark a clear differentiation between two texts.

```
<HR align = "left/center/right" size = " " width = " " color = " ">
```

Background and Colors

The Background attribute can be used to display an image as background. The value for this attribute

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<BODY Background = "URL">Date

will the path to the file which is to be displayed as background

The BGCOLOR attribute helps in displaying a color as background

```
<BODY Bgcolor = "Color">
```

Special Characters: There are certain characters that cannot be directly displayed on the screen

eg copyright, blank space.

To display these kind of characters HTML provides a unique way i.e use of ampersand symbol and the character code or a specific code defined in HTML.

Syntax: &#char code; or &code;

<	<
>	>
&	&
"	"
Registered Trade Mark	® or ®
Copyright	© or ©
Non-Breaking space	

Forms in HTML

Forms are designed or developed to collect information from users.

Mode of accepting Input from user.

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<FORM NAME=" " ACTION=" " METHOD=" "></FORM>

Elements of form
These are the data fields in the form, such as text fields and checkboxes.
The <INPUT> tag can be used to create
Text boxes - Radio buttons
Check boxes - Submit buttons
Reset buttons - Password
Generic buttons
There are other tags like TEXTAREA and SELECT for other purposes.

A form is an area that can contain form elements.
Form elements are elements that allow the user to enter information (like text field, text area field, drop down menus, radio buttons, check boxes, etc) in a form.

It has three main attributes
1> Name: used to identify the form
2> Action: points towards which page the data is to be sent
3> Method: takes one the two values GET/POST
Defines what kind of action is to be performed

Input Tag
- The most used form tag is the <Input> tag.
- It a single tag option for gathering info
- The type of input is specified with the type

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- Contains all of the other options for acquiring info including simple text fields, password fields, radio buttons, check boxes, and the buttons to submit and reset the form.
- <INPUT TYPE="*"> * can take the following values

Text	Textfield
Radio	Radio Button
Checkbox	Checkbox
Password	Password TextField

Text Fields: Textfields are used when you want the user to type letters, numbers, etc in a form

Radio Buttons: Radio Buttons are used when you want the user to select one of a limited no of choices

Checkboxes: Checkboxes are used when you want the user to select one or more options of a limited number of choices

Text Area: This component allows to enter a multiline text. For eg address.
It has three attributes
Name: name of the component
Rows: Number of rows
Cols: Number of columns

<TextArea Name=" " Rows=" " Cols=" ">
Text to be displayed in the Text Area
</TextArea>

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Select

- select option is used to display multiple options to the user in a restricted amount of space.

- It is also enforced to restrict the user in selecting a minimum / maximum number of options from the available list.

```
<Select name="multiple">
    <option value="taken value">Display text</option>
</Select>
```

- <select> is used to define the list
- It has a Name attribute which is used to name the component
- <option> tag is used to add items to the list
- The value attribute is used to assign the value to the component
- The text in-between the <option></option> tag is only to display but actually the value attribute is responsible for assigning the value to the component.

eg
```
<select name="locations" align="center">
    <option value="EC1">EC1</option>
    <option value="EC2">EC2</option>
    <option value="EC3">EC3</option>
    <option value="EC4">EC4</option>
</select>
```

Password

```
Enter Pass <input type="password" id="p">
    max length="8"
```

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Submit Button

```
<input type="submit" name="s" value="submit">
```

[submit]

Reset Button

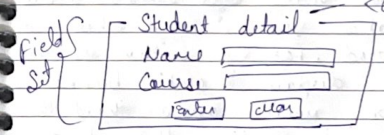
```
<input type="ResetButton" name="R" value="Reset">
```

[Reset]

Previous values are reset

Fieldset

It is used to group related information of a form and is used with legend tag which provide caption for the group elements.




```
<form>
    <fieldset>
        <legend> Student detail </legend>
        Studentname <input type="text" id="t1">
        <br />
        Course <input type="text" id="t2"><br />
        <input type="submit" value="submit">
        <input type="reset" value="clear">
    </fieldset>
</form>
```

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Some of the element of form introduced in HTML 5

```
<input type="email">
<input type="search">
<input type="URL">
<input type="color">
<input type="Date">
<input type="Number">
<input type="Range">
```

Frames

HTML frames allows developers to present documents in multiple views, which may be independent windows or subwindows. Multiple views offer designers a way to keep certain information visible, while other views are scrolled or replaced. For eg within the same window, one frame might display a static banner a second a navigation menu, and a third the main document that can be scrolled through or replaced by navigating in the second frame.

Frameset: HTML defines a framepage layout called as FRAMESET which defines how many frames are present in the page and how they are aligned. The Frameset is defined with the <FRAMESET> </FRAMESET> tags. It has two attributes "ROWS" and "COLS" which define whether the frame is divided into rows or cols.

Frame: Once the layout is defined it's the frames

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Frames are the webpage that will loaded in the different segments created by the Frameset. Each frame should be given a name which will be used by the Hyperlink as target values.

```
<Frameset cols="25%,*">
    <Frame src="left.htm" Name="left">
    <Frame src="right.htm" Name="right">
</Frameset>

<Frameset cols="25%,*">
    <Frame src="top.htm" Name="header">
    <Frame src="body.htm" Name="body">
```

Nested frames

```
<Frameset rows="25%,75%">
    <Frame src="top.htm" Name="left"/>
    <Frameset cols="25%,75%">
        <Frame src="left.htm" Name="left">
        <Frame src="right.htm" Name="right">
    </Frameset>
</Frameset>
```

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