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History of the Internet:

Internet = Collection of computers and other peripherals.

WWW = Collection of S/W and Corresponding protocols that are used to access a resource over a NW.

USA DOD → 1969 (ARPANET)

ARPANET

↳ USENET

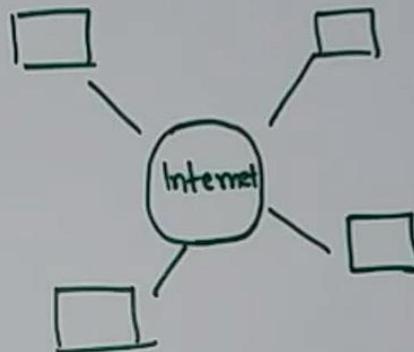
↳ CSNET

↳ BITNET

↳ NSFNET

↳ WWW (World Wide Web)

↳ NREN
↳ Intranet → within an organization.



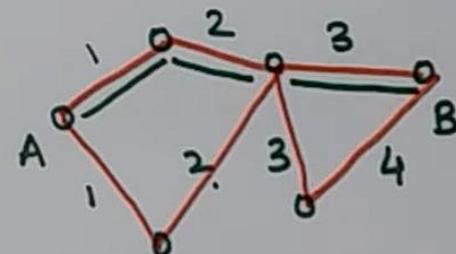
Protocols: Rules specifying the format of the messages to be exchanged among the nodes.

- i) Syntax → Structure of data & Control msg.
- ii) Semantics → Set of Control msg.
 - ↳ Actions
 - ↳ Response
- iii) Timing → order of event execution.

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- i) **HTTP** → It is a request/response Standard b/w client and server.
- vii) **UDP** → User datagram protocol.
- ii) **ICMP** → Internet Control Message protocol.
Send Error Messages.
- viii) **MIME** → Multipurpose Internet mail extension.
- iii) **OSPF** → Routing protocol.
↳ Open Shortest Path First
- iv) **RIP** → Routing Info" Protocol.
↳ dynamic routing protocol.
- v) **POP3** → Post office Protocol version3.
↳ E-mail clients to receive email from server.
- vi) **TCP/IP** Transmission Control Protocol/
Internet Protocol.



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World Wide Web Consortium(WWW)

Father of WWW → Tim-Berners Lee

i) In 1989 proposed web as a communication medium among scientist.

ii) In fall 1990 → first text-only browser.

iii) In fall 1991 → Conferences were held about web across the globe.

iv) 1993 → 50 websites.

Mosaic.

W3C is a Standard made to improve the quality of web.

→ Standards are open and non-proprietary.

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HTTP (Hypertext Transfer Protocol)

It is a protocol (Set of rules) originally designed for transmitting hypermedia.

- It also supports transmission of any file type.
- Application Layer protocol

Comm'g of two computers.

- i) Establishing a connection
- ii) Request for a document to be sent.
- iii) Sending the document
- iv) Closing the connection.

HTTPS

- Secure.
- Encrypted.

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Web Engineering (HTML Lecture.1)

Introduction to HTML

- HTML Stands for Hyper Text text with a link.
- Markup Language. used to make text more interactive and dynamic.
- Used to develop web pages.
- Created by Berners-Lee in late 1991.

< > — </>

Platform independent

defines document type

heading

paragraph

features of HTML

<!DOCTYPE> a.html,

<html> → web document

<body> → content of web page.

<h1> EEC classes</h1>

<p> HTML Tutorial </p>

</body>

</html>

Easy and Simple lang.

markup lang. it gives flexibility in designing web pages.

add link on pages

(HTML Lecture.2)

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Web Engineering - HTML Lecture.2

Tag	Description
<!DOCTYPE>	document type and html version.
<HTML>	Contains html document
<Head>	document's header <title>, <link>
<title>	document title
<body>	Content of the Web Page. <h1...>, <p>....
<h1...h6>	Heading
<p>....	parag

HTML Tags <h1> HTML </h1>

<h1> Contains three main parts </h1>

Basic Syntax:

<tag> Content </tag>

opening closing tag.

Imp (SEO) k.w

meta descr.

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Web Engineering- HTML Lecture.3 [HTML Lists]

Lists are used to display list of information.

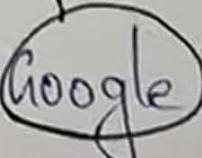
Ordered/Numbered List	Unordered/Bulleted List	features : 1 2 3] lists. Description/Definition List
<pre>, HTML CSS o/p: 1. HTML a.HTML 2. CSS b.CSS</pre> <pre><ol type="1"> <ol type="a"> <ol type="1" start="5"></pre>	<pre>, HTML CSS o/p:- • HTML • CSS marker</pre> <pre><ul type="square"> "disc" "circle"</pre>	<pre><dl>, <dt>, <dd> <dl> <dt> HTML </dt> <dd> Web Prog. lang </dd> <dt> CSS </dt> <dd> styling lang </dd> </dl> o/p: terms</pre>

→ Anchor tag <a>

It is used to create hyperlink to a resource
(webpage, pdf file, doc file, text file)

Attribute of Anchor tag

href (hyperlink reference)

Example: <html>
 <body>
  Google
 </body>
</html>

Target:-

It allows you to determine where the link will open

` open t `

→ Keyword to open a
new window

→ Image:-

- It is used to place an image on the Webpage
- `` tag is used to set an image on the Webpage
- Images are not part of the Webpage file

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Web Engineering- HTML lecture. 4 [HTML Tables]

display data in tabular form Row
Column

Table Example

`<table>, <tr>, <td>`

`<body>`

`<table border="1">`

`<tr>`

`<td> HTML </td>`

`<td> CSS </td>`

`<td> JavaScript </td>`

`</tr>`

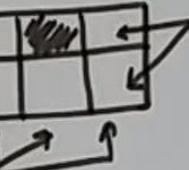
`<tr><td>... </td></tr>`

`</table> :`

`</body>`

table
headers

Col1	2	3
Html	CSS	JavaScript



`<th>` Cell padding and
Cellspacing.

width of the
border
and Content
border
of cell.

cellpadding.

`<table cellpadding="5">`

`<tr> <td>... </td></tr>`

(colspan, rowspan)

`<tr>`

`<th> col2 </th>` merges the merge

`<th> col2 </th>` columns the rows.

`<th> col3 </th>`

`</tr>`

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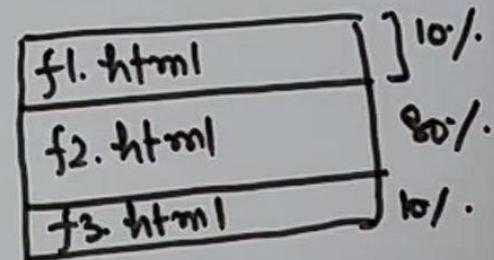
(Web Engineering- HTML Lecture.5) [HTML Frames]

- Frames are used to divide your browser window into multiple sections.
- Each section can load a separate HTML document.
- Collection of Frames = Frameset



Example to Create Frames

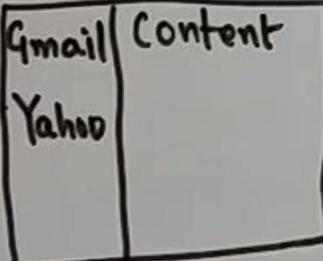
```
<html>
<head> .... </head>
<frameset cols="10%, 80%, 10%">
    <frame name="f1" src="f1.html" />
    <frame name="f2" src="f2.html" />
    :
    <frame name="f3" src="f3.html" />
</frameset>
</html>
```



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Creating Navigation Menu using Html Frames.

A.html	Menu.html	Content.html
<pre><framset cols="20%,80%> <frame src="Menu.html" name="menu"/> <frame src="Content.html" name="Content"/> </framset></pre> 	<pre><body> Gmail Yahoo </body></pre>	<p>menu</p>  <p>Content.html</p> <pre><body> <h1> </h1> </body></pre>

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Web Engineering- HTML Lecture.6 [Html Forms] HTML Form Tags

Tag	Description
<form>	defines HTML form to enter i/p
<input>	defines input control
<textarea>	defines multi-line i/p control.
<label>	Passive Element.
<fieldset>	Group relative elements
<legend>	Caption of fieldset
<Select>	Drop-down list
<optgroup>	related options in drop-down list
<option>	option in dropdown list
<button>	clickable button.

HTML Form Syntax:

```
<form action = "server page url"
      method = "get/post">
    //input form control
    text field,
    textarea.
</form>
```

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Example of Creating HTML Forms and fieldSet.

```
<form>
<fieldset><legend> Personal Information </legend>
<br> First Name: <input type="text"
name="fname"> <br>
:
<input type="email" name="email">
<input type="radio" name="gender"
value="Male" checked> Male
<input type="radio" name="gender"
value="female"> Female
</fieldset>
<fieldset><legend> Address Data </legend>
<select name="country"><option value="India">
India </option>
:
</select> <input type="Submit" value="Submit">
```

Personal Information

first Name:

Last Name:

Email:

Gender: Male female

Address Data

Complete Postal Address.

Select Country

Submit

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(Web Engineering - HTML Lecture.7) [XHTML]

XHTML

↳ Stands for Extensible HyperText Markup Language.

→ Similar to HTML

→ More strict than HTML

Steps to Convert from
HTML to XHTML

Major Differences from HTML

i) DOCTYPE is mandatory.

ii) <html>, <head>, <title> and <body> are mandatory.

iii) Elements must be properly nested and always be closed. <title> _____ </title>
<body> _____ </body>

iv) lowercase , one root element.

ii) Add XHTML <!DOCTYPE> to the first line of every page.

iii) Add xmlns attribute to html element

iv) Change all element name to lowercase.

v) Close all elements

vi) Change all attribute names to low

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Web Engineering

CSS Lecture.1

CSS stands for Cascading Style Sheets.

↳ used to control the style of a web development in a simple and easy way.

Advantages of CSS

i) Save time → write CSS

once and use it for multiple HTML files.

ii) Page loads faster

iii) Easy maintenance.

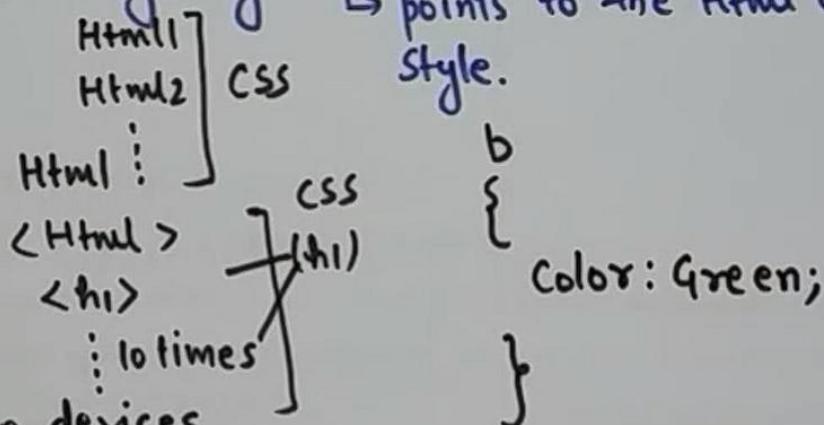
iv) Compatible with multiple devices

v) Global Web Standards.

CSS Syntax:

Value
Selector { Property : Value; }

↳ points to the HTML element to style.



(CSS Lecture.2)

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Web Engineering (CSS Lecture.2)

Different CSS Selectors

1.) Element Selector

→ Selects elements based on the element name.

eg:- <html><head>

<title>...</title></head>

<style type="text/css">

h1 → element name

{ background-color: red; }
Property Value

</style>

<body><h1> EEC Classes</h1>

</body></html>

2. Id Selector

uses the id attribute of an HTML element to select.

eg:- <html><head>...</head>

<style type="text/css">

#id1 { background-color: red; }
#id1 → element

#id2 { background-color: blue; }
#id2 → element

</style>

<body>

<h1 id="id1"> EEC </h1>

</body> : "id2"

</html>

3. Class Selector

Selects elements with specific class attribute.

eg:-

<style type="text/css">

p.c1 { color: red; }
p.c1 → dot(.) character
{ color: red; } → class-
names

p.c2 { color: purple; }
p.c2 → class-
names

<body>

<p class="c1"> EEC </p>

<p class="c2"> Classes </p>

</body>

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Web Engineering

CSS Lecture.3

Ways to Insert CSS

i) Internal Style Sheet
defined within <style>
element, inside <head>
Section of HTML page.

eg: <head>....</head>
<Style type="text/css">
 h1 → selector value
 { background-color: red;
 } → property
</Style>
<body><h1> EEC </h1>
</body>

ii) Inline Styles

Used to apply a unique
style for a single element.
Add style attribute to
the relevant element.

eg: attribute

<body> → p ↗ v
 <h1 style="color: red;
 margin-left: 30px;"> EEC
 </h1> ↗ p ↗ v
 <p> Welcome </p>

</body>

 a href="mystyle.css" >

iii) External Style Sheet

eg:- // mystyle.css

```
body
{
    background-color: yellow;
}
h1 {
    color: red;
}
```

```
// a.html
<html>
<head> ...
<link rel="stylesheet" type="text/css"
      href="mystyle.css" ...</title></head>
<body>
    <h1> EEC classes </h1>
    <p> Welcome </p>
</body>
</html>
```

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Web Engineering (CSS Lecture.4)

CSS Box MODEL

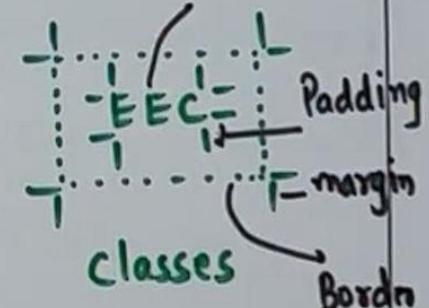
- It means design and layout of an HTML Element.
- It is a box that wraps around every HTML Element.

Box Model → Content: text/Images.
→ Padding: clears area around content
→ Border: goes around padding and content
→ Margin: clears the area around the border

Example of CSS Box Model:



```
div{  
color: red;  
width: 300px;  
border: 25px  
solid red;  
padding: 25px;  
margin: 25px;  
} content
```



(CSS Lecture.5)

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Web Engineering (CSS Lecture.5)

CSS Text Properties

i) Text Color

↳ 'color' property is used.

- Color
 - name ✓
 - HEX Value ✓
 - RGB Value ✓

Example:
body {
background-color: #000;
color: red;
color: #ff0000;
color: rgb(255,255,0);

ii) Text Alignment
↳ 'text-align' property.
used to set horizontal alignment of text.

Example:

```
h2 {text-align: left; :right; }  
p {text-align: center; }
```

iii) Text Decoration
↳ 'text-decoration' prop. is used.
used to remove underlines from links:

```
a {text-decoration: none; }
```

Values:- overline;
line-through;
underline;

(CSS Lecture.6)

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Web Engineering
(CSS Lecture.6)

CSS FONTS

FONT FAMILY

'font-family' property is used.

Ex:-

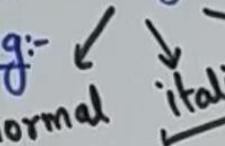
p
{

font-family: "Times New Roman", Times, serif;

} font-size = 2.5em
2.5 × 16 = 40px

FONT STYLE

'font-style' property.

Eg:-  normal → italic → oblique

p.N { font-style: normal; }

p.I { font-style: italic; }

p.O { font-style: oblique; }

<p class = "N" > ~~text~~ </p>

<p class = "I" > ~~text~~ </p>

<p class = "O" > ~~text~~ </p>

FONT SIZE

'font-size' property.

Absolute Size

Sets the text to specified size.

Relative size

Sets the size relative to surrounding elements.

Eg:- **p** {
font-size: 50px;
} 1em = 16px.

Em
1em = Current font size
16px

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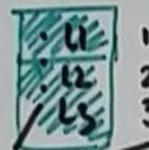
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Web Engineering (CSS Lecture. 7)

CSS Lists

Lists Properties

- ↳ Set diff. list item markers.
- ↳ Set image as " " " ".
- ↳ Adding background color.



style .

i) list-style-type property

- ↳ Specify type of list item marker.

```
ul.a{ list-style-type: circle; }
```

↳ Square :

```
ol.c{ list-style-type: upper-roman;  
      lower-alpha;
```

ii) list-style-image property] Sets image as marker.

```
ul.a{  
      list-style-image: url('abc.gif');  
    }
```

iii) Lists with colors

```
ol.li{ background: #ff0000;  
      }
```

```
<ul class="a">  
<ol class="b">  
  <li> — </li>
```

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Web Engineering

(CSS Lecture.8)

(CSS Tables)

↳ used to improve the look of an HTML table.

i) Table Borders (border)

table, ~~tr, td~~
 { border: 2px solid Red;
 }

Courses	no. of Lectures
css	8
Java	100

table, td, th
 { border: 1px solid Black; }
 vertical-align: bottom;
 text-align: left;

courses

↳ used to collapse border into a single border.

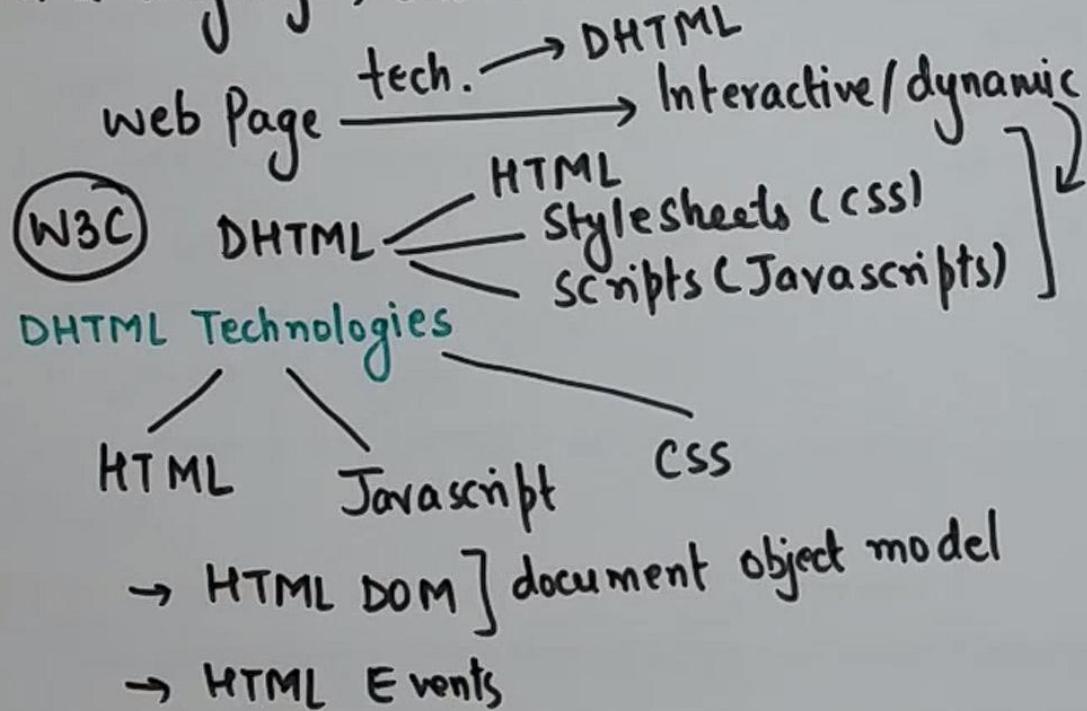
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(Web Engineering- Html Lecture.8) [DHTML]

DHTML stands for Dynamic HTML.

Not a language, but it is a Web Standard.



DHTML

- Dynamic Hypertext Markup language refers to web pages that move, animate or respond to the user after download to the browser.
- It describes HTML pages with dynamic content
- Any element on a webpage - images, text, tables, styles, etc can manipulated, responding to user mouse action, without reloading anything from the server.
- Result : - Flexible layout - Motion without plug-ins

→ DHTML works through a combination of:

- HTML 3.2 or 4.0
- Java script
- CSS

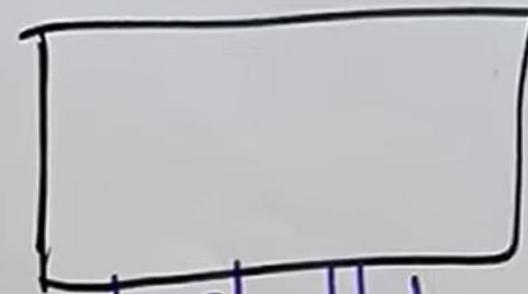
- Document object Model (DOM) - a means of accessing a document's individual parts.

DHTML CSS positioning

→ First the element must specify the position attribute (relative or absolute)

Then we can set the following CSS-P attributes:

- left - the ele's left position
- top - the ele's ~~at~~ top position
- visibility - specifies whether an element should be visible or hidden
- z-index - the element's stack order
- filter - add more style effects to your text & images



Eg:

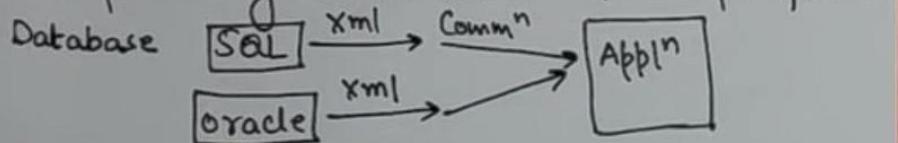
```
<div style="position: relative;  
font-size: 50px; z-index: 2;">LAYER 1 </div>  
  
<div style="position: relative;  
top: -50; left: 5; color: red;  
font-size: 80px; z-index: 1"> LAYER 2 </div>
```

LAYER 1
LAYER 2

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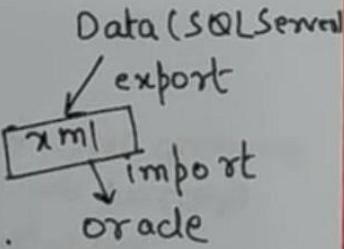
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XML :- eXtensible Markup Language. You can create your own
 → Used to store and transport data. tags.
 → Self descriptive.
 → Used to carry data (Not used to display data)
 → Self-defined tags.
 → Platform and language independent.
 → Helps in easy communication b/w two platforms.



Features and Advantages:-

- Separates data from HTML.
- Simplifies data sharing.
- Simplifies data transport.
- Increases data availability.
- Simplifies platform change.



XML Example:

```

<?xml version="1.0" encoding="ISO-8859-1"?>
<college> <!-- Root Element -->
    <child> <!-- child -->
        <class1> <!-- declaration -->
            <Name> Amit </Name>
            <RollNo> 1 </Roll No>
        </class1>
        <class2> <!-- child Element. -->
            <Name> Mohan </Name>
            <Roll No> 2 </Roll No>
        </class2>
    </child>
</college>
  
```

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HTML

- i) Display Data (Look and feel).
- ii) Markup language itself.
- iii) Not Case sensitive
- iv) Predefined Tags
- v) Static

eg:- <html>] Predefined Tag
 <body>
 <p> HTML INTRO
 <p> display
 </body>
</html>

XML

- i) Transport and Store the data.
- ii) Provide framework to define markup languages.
- iii) Case-Sensitive]
- iv) Can Create own tags
- v) Dynamic

eg:- <College> {
 <class>
 <Name> {
 </Name>
 </class>
 </College> }
 transport