

UNIT 1 : E-COMMERCE

Introduction : E-commerce means buying and selling of goods and services over the internet. This include both business to business and business to consumer (B2C) transactions. E-Commerce deals with the exchange of money for soft or hard goods and services.

E-Commerce is a general concept covering any form of business transaction or information exchange executed using information and communication technologies. E-Commerce take place between companies, between companies and their customers or between companies an public administration. Electronic commerce includes electronic trading of goods, services and electronic material.

Definition : E-commerce is like so much in the areas of business and information system the subject of numerous definitions.

Some authors see e-commerce as largely or entirely an internet phenomenon.

Seddon (1997) has suggested that the world has just entered a third new phase in the evolution of IT capabilities : the internet era. The suggestion divides the evolution of information technology into 20 year period

1955 – 1974 The electronic Data processing era
1975 – 1994 The management information system era
1995 – 2014? The Internet era

Features of E-Commerce :

- 1) It include electronic trading of goods and services
- 2) It can be applied to trade cycle
- 3) It is fasted growing web page application
- 4) It completes the business transaction in few minutes
- 5) It offers services to customer for 24 hr.
- 6) It increases the efficiency of the trade
- 7) It provides diverse types of product
- 8) It offers services for all days
- 9) It extends the scope of business
- 10) It provides better customer services
- 11) It uses EDI technique for regular business transaction
- 12) It offers qualitative products at reasonable price
- 13) It provides facility of online transaction
- 14) Use of electronic cash, cheques & smart cash cards are notable features.

Function of E-Commerce :

The four functions of E-Commerce are :

- **Communication :** The aim of communication function is to deliver information and/or documents to facilities business transitions. For ex – e-mail.
- **Process Management :** The process management function covers the automation & improvements of business processes.
- **Service Management :** Service Management function is the application of technology to improve the quality of service.
- **Transaction capabilities :** Transaction capabilities provides the ability to buy/sell on the internet or some other on-line service. Ex- Rediff.com

Benefits of E-Commerce :

- 1) Reduced costs to buyers from increased competition in procurement, as more suppliers are able to compete in an electronically open marketplace.
- 2) Reduced costs to suppliers by electronically accessing on-line database of bid opportunities by online abilities to submit bids, and by on-line review of awards.
- 3) Reduced errors, time and overhead costs in information processing by eliminating requirement for reentering data.
- 4) Reduced inventories, as the demand for goods and services are electronically linked through just in time inventory and integrated manufacturing techniques.
- 5) Reduced time to complete business transactions, specifically reduced time from delivery to payment.
- 6) Better quality of goods as standardized specifications and increased competition; also better variety expanded markets and the ability to produce customized goods.
- 7) Increased access to a client base. Identifying and locating new clients and new markets.
- 8) Cost-effective document and fund transfer.
- 9) Faster time to market as business processes are linked, eliminating time delay between steps within the process.

Impact of E-Commerce of Business :

E-Commerce is impacting in a broader way on most of the business organizations. It is to decide how our organization is equipped to use e-commerce technology. This is the most important and difficult part of defining our strategy, because of the multifaceted nature of e-commerce and the various alternative it presents. The variables in this issue involved are :

- Need of change
- Risk avoidance
- State of the current operation
- Competition and financial stability

These will change the geography of our e-commerce landscape. The factors and components that affect our strategy development is shown in the figure.

Traditional Commerce Vs E-Commerce :

E-commerce involves combination of :

- Information technology
- Telecommunications technology
- Business processes

Traditional Commerce	Electronic Commerce
1. Scope is local or regional	1. Scope is global
2. Time required for business transaction is in terms of week	2. Time required for business transaction is in terms of minutes.
3. Product attributes are selected by seller	3. Product attributes are selected by buyer
4. Prices are listed by taking over view of local market	4. Prices are listed by taking over view of global market
5. Service is available between 9 am to 5 pm	5. 24 hr service is available for all 7 days
6. Marketing focus is related to product position	6. Marketing focus is related to customer relation.
7. Asset for traditional business is location of Shop.	7. Asset for E-commerce is customer database
8. Value proposition is related to product	8. Value proposition is related to product, information & Service
9. Paper documents are used for completing	

business transaction 10. Many departmental heads need to be consulted before completing a transaction.	9. Electronic documents are used in place of paper documents. 10. Simple administration of transaction is possible because everything is automated.
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Advantages of E-Commerce :

- 1) Companies are interested in electronic commerce because it can help in the increase of profit.
- 2) Electronic commerce can increase sales, decrease recurring costs and eventually end up in higher profits.
- 3) Unlike making advertisement in billboards, sending product catalogues to different customers through post, advertising can be easily done on the web at a lesser cost.
- 4) E-Commerce not only increases sales opportunities, but it also increases buying opportunities.
- 5) E-Commerce provides buyers with a wider range of choices than traditional commerce as it can consider many different product and services from a wider variety of sellers through the web.
- 6) E-commerce can be extended for the welfare of the society. Particularly, e-governance transaction in the form of electronic bill payment to the government, tax refunds to the public.

Disadvantages of E-Commerce :

- 1) E-Commerce possesses disadvantages as well. Some businesses will never do business electronically,
- 2) Items that need to be inspected through touch and smell are not possible to sell through e-commerce websites.
- 3) High cost items such as custom-designed jewellery and antiques is not possible to inspect adequately from a different geographical location, regardless of the virtual reality technologies that might be in use.
- 4) One major disadvantage of e-commerce today is the rapidly developing pace of the underlying technologies.
- 5) Perishable grocery products, such as fruit and vegetables are harder to sell electronically, as customer want to examine and select specific items that are still fresh and appealing.

Electronic Commerce and the Trade Cycle : -

E-commerce can be applied to all, or to different phases, of the trade cycle. The trade cycle varies depending on :

- The nature of the organization involved.
- The frequency of trade between the partners to the exchange
- The nature of the goods or services being exchanged

The trade cycle has to support :

- Finding goods or services appropriate to the requirement and agreeing the terms of trade.
- Placing the order, taking delivery and making payment
- After-sales activities such as warranty, service etc.

There are numerous version of the trade cycles depending on the factors outlined above and for many transactions, further complicated by the complexities of international trade.

- Regular, repeat transactions between commercial trading partners
- Irregular transaction between commercial trading partners where execution and settlement are separated
- Irregular transaction in once-off trading relationships where execution and settlement are typically combined.

Electronic Markets :-

An electronic market is an inter-organizational information system that provides facilities for buyers and sellers to exchange information about price and product offerings. The electronic market is primarily about the search phase of the trade cycle. The electronic market is most effective in assisting the buyer in a commodity market where products are essentially identical across all sellers.

“The effect of an electronic market in a commodity market is a more efficient distribution of information which causes decreasing profit possibilities for sellers.”

Usage of E-Market :

E-Market gives easy and fast access to data for products and services to the customers. The main use of E-Market is spreading and publishing information for the use of customers. E-Market is also referred to as the search phase of the trade cycle.

The best example of E-Market is airline tickets booking or enquiry. The other E-market system is the stock market.

Airline booking system and stock market system. Both systems help users to search information, make enquiry or to check the current status.

E-Market helps to serve or to solve customer's queries or problems. Models of E-Market are of different types that are :

1. Virtual superstores
2. Electronic storefronts to existing services
3. Bid/ask marketplaces
4. Virtual order centers
5. Intranet-based centers
6. Intranet-based electronic business communities
7. Virtual trading marketplaces.

Advantages :

1. No need of middlemen : e-market is direct online between producer and customer. Hence there is no need of a middle man in the distribution system which leads to saving in cost of commission.
2. Trading at low cost : Trading on internet requires less charges. Therefore, the operation cost of trading is very low as compared to traditional commerce.
3. Expansion of market : Worldwide buyers and sellers join hands in the market.
4. Increase in profit : Managing marketing activities through internet is profitable. It allows selling the products in many countries.
5. Searching cost : It saves searching cost by providing all information at a time. It also decreases the overall cost of the product.

Disadvantages :

1. Insufficient database : database with regard to producer, customer is not sufficient. There is a lack of information from all types of customers and suppliers is still not available on internet.
2. Lack of availability of consumer goods : Consumer's goods for daily needs are not completely available on E-Market. Daily needs such as vegetables, fruits, breads, milk are not available on E-market.
3. Mindset of customers : Majority of the customers do not know how to use internet. They are not fully aware about the benefits of E-commerce. Therefore they like the traditional approach of buying and selling. Today we can easily notice that majority of the people would like to visit the market place for purchasing the goods, this trend shows that the majority of the customers would like to continue with the traditional market and not E-market.
4. Skill person : To handle this system.

Future of E-Market :

The evolution to more open and interoperable electronic market place will depends upon the mass use of internet as E-market uses internet, co-operation between e-market availability of electronic business rules. On the basis of these E-market can have following future :

1. The use of Internet will make users aware for E-market and its use which leads to the mass use of E-market.
2. Instead of visiting travel agent, customer can visit online ticket booking of railway or airline website. It provides information of flights schedules or seat availability and can be book ticket
3. Customer can search online shops for the required product and services which help to get these product and services in low price without any middlemen.
4. Within a vertical industry. For Ex. a consumer would be able to manage all financial holdings across the various financial institutions that are maintaining them.
5. Across co-operating industries, but focused on a uniquely identified process.
6. The E-market providers can make their services “Open” to the available E-Market.

Electronic Data Interchange (EDI) : EDI is based on a set of standardized messages for the transfer of structured data between computer applications. It can have many applications, e.g. sending test results from the pathology laboratory to the hospital or dispatching exam results from the exam boards to schools, but it is principally used for trade exchanges : orders, invoices, payments and the many other transactions that can be used in national and international trade exchanges.

EDI is used for regular repeat transaction, see Figure. It takes quite a lot of work to set up systems to send and retrieve EDI message and in general, It is not applicable to one-off exchanges.

EDI means the electronic exchange of business documents in a computerized standard format which is universally accepted between two trading partners. In simple word EDI refers to paperless trading.

Thus EDI means exchange of documents in standardized electronic format between two or more business organizations automatically by using electronic media such as computer application of one business organization with computer application to another business organization.

Future of EDI :

- 1) Use of electronic devices such as computer for transaction.
- 2) Trading partners have agreed upon the standard format of the business documents
- 3) Use of standard format for all the business documents to be exchanged for completing business transaction.
- 4) Both business organization should use standard format documents
- 5) EDI follow the ANSI standards which are universally accepted
- 6) It follows the principles of co-operation
- 7) It facilitated “Paper less trading”
- 8) It uses value added network.
- 9) It expands the existing process of business organization
- 10) This system is universally accepted

Benefits of EDI :

EDI beneficial for both sender or receiver

1. Improvement in overall quality : By better record keeping, fewer errors in data, reduction in processing time, less reliance on human interpretation of data, minimized unproductive time.
2. Inventory Reduction : It permits faster and more accurate filling of orders, helps reduce inventory assists in JIT inventory management.
3. Provides better information for management decision marking. It provides accurate information and audit trails for transitions enabling business to identify areas offering the greatest potential for efficiency improvement or cost reduction.

4. Minimization of data Entry errors : The notable feature of EDI is easy transfer of the entire data as per requirement. EDI maintains accuracy in transfer to database as there is no need to type or retype the data again and again.
5. Improved and fast communication : EDI is better method of communication within few minutes with suppliers.
6. Better Customer Service : EDI provides better service to both sender and receiver, better service is one which given at right time to the right person with right price.
7. Paper less Transactions : In paper based system every transaction is supported by paper source document.
8. Efficient Management : Better planning, organizing, communicating, co-ordinating and controlling EDI transactions over internet is a notable feature.

Limitations of EDI :

- 1) High Costs : Application are costly to develop and operate. It is difficult for new users.
- 2) Limited accessibility : It does not allow consumers to communicate or transact with vendors in an easy way.
- 3) Rigid Requirement : Needs highly structured protocols, preciously established arrangement, unique proprietary bilateral information exchanges.
- 4) EDI application automate any certain portion of the transaction.
- 5) Application are narrow in scope

EDI Trade Cycle :

The EDI trade cycle involves trading partners who wants to exchange data from the organization. There may be two companies with a common customer or two banks whose customers wants to deal with one another or between two divisions of the same company.

Every trade comprises two main activities i.e. buying and selling. Thus two or more main partners involved are manufacturer or buyer and supplier.

- 1) Trading partners will have the flow of data between them through exchanges. The simplest the most common form of exchange is where one partner wants to send a single message
- 2) The recipient of data should be authorized recipient of such electronic data interchange. After confirming authorization the sender transfer or exchange data.
- 3) The exchange divide messages on which most EDI standards concentrate.
- 4) After receiving the data the receiver transfer it to its own computer system for further processing to obtain output.

Internet Commerce :-

E-Commerce can be and is used for once-off transaction. This area of trade is typified by the consumer purchasing over the internet but there are other networks :

- Television sales channels are in use in the US;
- The French Minitel is a mature example of an interactive public access network;
- And this type of e-commerce is also used by organization to make once-off or infrequent purchases of items such as computer and office supplies.

The Internet can be used for all or part of the Trade cycle :

- The first stage of the trade cycle is search and the facilities of the internet can be used to locate sites offering, or advertising, appropriate goods or services;
- An increasing number of sites offer facilities to execute and settle the transaction, or in normal parlance to make a purchase – delivery may be electronic or by a home delivery service depending on the nature of the goods or service being offered. The use of the internet for on-line

purchasing may or may not follow a search – publishing a web site address is an increasingly common feature on conventional advertising.

- The final use of internet e-commerce is for after-sales service. Many IT providers now offer on-line support and on-line services such as banking are arguably, a special case of the use of after-sales transactions.

INTERNET SECURITY :

Secure Transactions :

On the basis of early experience, Internet was finding a way to safely buy and sell goods or transfer funds over it. As messages go through so many computer between a buyer and seller, or transaction was secure. Details of credit card numbers and other sensitive information could easily be captured. The goal was to enable e-commerce by providing a safe, convenient and immediate payment system on the internet for transaction between consumers, merchants and their banks as well as between individual by processing them in real time. The secure payment system works as follows :

- If we visit the merchant's website and select items to be purchased and enter shipping instructions. The merchant's server then returns to us a summary of the item, price and transaction ID
- We have to click on the pay button which launches the cyber cash wallet. Choose a credit card option and click OK to forward the order and encrypted payment information to the merchant.
- The merchant receives the packet, strips off the order and forwards the encrypted payment information digitally signed and encrypted with our private key to the cyber cash server.
- The cyber cash server receives the packet, takes the transaction behind into firewall and off the internet unwraps data within a hardware-based cryptobox.
- The merchant's bank forwards the authorization request to the issuing bank via the card association or directly to the respective site. The approval or denial code is sent back to cyber cash.
- Cyber cash returns the approval or denial code to the merchant who passes it on to us.

Security Procedure :

Firewall :- The main function of any wall is to offer protection. Firewall is a reliable accepted security measure. Firewall is a software that regulates who can access the internet. It is a software/Hardware combination that separates an internal local area network from the external internet. It is similar to the Laxman rekha of Ramayana, in which no one can cross, except the authorized person.

Encryption :- It is the scrambling of digital messages in such a way that only the sender and receiver can read the message. Encryption is the process that hides meaning by changing messages into unintelligible message. Customer names, addresses and credit card numbers are processed by complex mathematical encryption algorithms to ensure that only the authorized server to which they are connected can decode the information .

Password :- A password is a secret word or string of characters that is used for authentication, to prove identity or gain access to a resource. The password must be kept secret.

The use of passwords is known to be ancient. Sentries would challenge those wishing to enter an area of approaching it to supply a password or watchword. Sentries would only allow a person or group to pass if they knew the password. In modern time user name and password are commonly used by people during a log in process that controls access to process that controls access to protected computer operating systems.

Access control List : An access control list (ACL) is a list of permissions attached to an object. An ACL specifies which users – or system processes—are granted access to objects, as well as what operations are allowed to be performed on given objects.

Digital Certificate : Digital certificates are the equivalent of a driver's license, a marriage license, or any other form of identity. The only difference is that a digital certificate is used in conjunction with a public key encryption system. Digital certificates are electronic files that simply work as an online passport. Digital certificates are issued by a third party known as a certification authority such as Verisign or Thawte. These third party certification authorities have the responsibility to confirm the identity of the certificate holder as well as provide assurance to the website visitors that the website is one that is trustworthy and capable of serving them in a trustworthy manner.

UNIT 2 : CREATING STATIC WEB PAGES WITH HTML :

Features of HTML

1. It is simple to use
2. It is computer language
3. It has special grammatical rules or syntax
4. It is easy to understand
5. It uses different tags for different important purposes
6. It uses web browser like Internet Explorer and Netscape Navigator
7. It is used for designing web pages.
8. It is used to define the layout of a web page.
9. It is used to improve the appearance of web pages
10. It displays pictures, images and animation effects
11. It assists us to make a web page user friendly.
12. The HTML document comprises of instructions
13. It uses hyperlinks which allow to establish a link between two HTML documents
14. It allows us to jump from one topic to another topic very quickly.
15. It also provides the notable features with cascading style sheets.

HTML Advantages

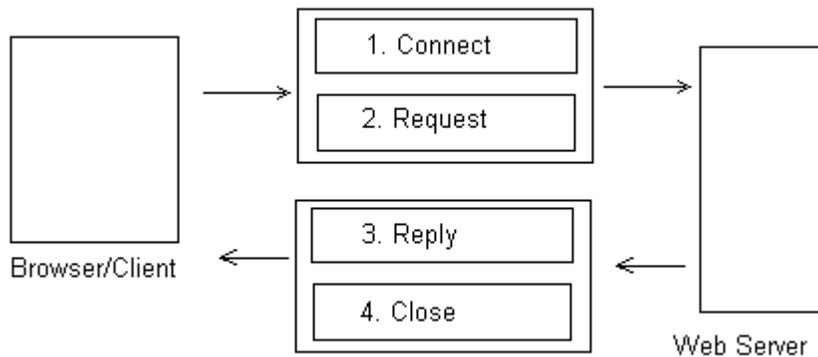
1. Easy to use
2. Simple syntax
3. Supported by most of the browsers and platforms
4. Widely used; established on almost every website
5. Very similar to XML syntax, which is increasingly used for data storage
6. Free- you need not buy any software
7. Easy to learn & write programs for new programmers
8. It has plain text; so it is easy to edit
9. It is also fast to download
10. It is now a standard
11. Simple to edit only requires a text editor
12. Can be easily edited with WYSIWYG editors
13. Can be used to present any kind of data

HTML disadvantages

1. It is static; needs to be manually updated or needs some scripting support to change it in some way.
2. Isn't rendered correctly in all browsers
3. It is not centralized

4. Very limited styling capabilities
5. Different vendors added
6. Tags can be used very loosely
7. Sometimes the structuring of HTML documents is hard to grasp
8. Security features offered by html are limited

Flow of Web information :



The process of communication on the internet is as follows :

1. A user enters the internet address of an HTML file in the address bar of a web browser.
2. The browser sends a request for the web page to a web server
3. The web server and the browser communicate using the hypertext transfer protocol.
4. The web server receives the request and recognizes that the request is for an HTML file because the requested file has an extension of .HTML or .html
5. The web server retrieves the appropriate HTML file from a local disk or memory and sends the file back to the web browser.
6. The user's web browser interprets the HTML file, and the results are displayed in the browser windows in the desired form.

Role of Web Browser :

To access information stored in the form of web pages, users must connect to a web server. Once connected, and interface that displays the contents of the web page is required.

Computer that offer the facility to read information stored in web pages are called 'Web Clients'. Using web browser we can view web pages and navigate through the WWW. The role of the browser is to format and display web documents to the viewer.

Web clients run special software called a 'Browser' that allows them to :

- Connect to an appropriate server
- Query the server for the information to be read
- Provides and interface to read the information returned by the server.

Some of the most popular browser software that client run to generate query to web servers for information are :

Netscape Navigator :

Internet Explorer :

Role of Web Server/Internet Server :

Web pages are created using HTML syntax. These pages must be organized and stored at a central computer.

The organization of web pages into directories and files stored on the HDD of a central computer is called Web Site Creation.

Management

- Accept a client's request for information
- Respond to a client's request by providing the page with the required information

Some of the popular software, which servers run to allow them to respond to client request for information it internet information server.

Web server software stand manages web pages.

Process of Web Publishing :

Web design is the skill of creating presentations of content that is delivered to an end user through the world wide web, by way of a web browser.

Web design is a type of graphic design intended for development and styling of objects of the internets information environment to provide them with high end consumer features and aesthetic qualities.

The process of designing web pages, web sites, web applications or multimedia for the web may utilize multiple disciplines such as animation, authoring, communication design, corporate identity, graphic design, human-computer interaction, information architecture, interaction design marking photography etc.

Create Web Page in HTML ?

```
<HTML>
  <HEAD>
    <TITLE>
      Create web page
    </TITLE>
  </HEAD>
<BODY>
  <H1>
    Welcome to HTML
  </H1>
</Body>
</HTML>
```

To Create Web Page in HTML, you can use common editors like windows Wordpad or Notepad if you save the page in text format. You can even use a word processor like Microsoft Word, but note that you cannot save normal web page in .doc, .txt format.

The name you give the WebPage doesn't matter as long as you give it the extension .html to indicate that it's an HTML Document. For Ex. You might enter the previous text into a file named one.html. Because of the fact that MS-DOS used to only recognize three-letter extensions, you can also use the extension .htm and not have a problem with most browsers.

That's the process. Just enter the previous HTML in a file and save the file in text format, giving it the extension .html, such as one.html Congratulations – you've just created your first web page!

About HTML

HTML stand for Hyperlink Markup Language is the language you use to create web Pages. HTML is a collection of platform-independent styles used to create a documents for the World Wide Web(WWW), popularly known as the web. The Code written in HTML is interpreted by the browser. The structure of all web pages is similar. A webpage has some common attributes, such as heading, paragraph text, bulleted list, images, and footers. However, each web page can have a different combination and attributes. Left to themselves, web browsers would take the text and images in your web

HTML : BCCA 2ND YR

page and wrap them up into what looks like a single paragraph without any line breaks. In other words, HTML is all about specifying the structure and format of your web page.

The result of this HTML appear in Microsoft Internet Explorer
<HTML> is a tag.

TAGS /Basic Element :

1) <HTML> : HTML tag to indicate that this web page is written in HTML. Entire document with the <HTML> starting or opening tag and the corresponding ending or closing tag, </HTML>

Purpose : - Starts the HTML document and contains that documents surrounding everything else except the <HTML> Tag.

Start Tag/Eng Tag :- Optional / Optional

Attributes :

Class :- Class of the element

Dir : Given the direction of directionally neutral text

ID :- Unique alphanumeric identifier for the tag, which you can to refer to it

Lang :- Base Language used for the tag.

Version :- Deprecated.

2) HEAD : The <head> element includes information about the HTML documents. Information given within the <head> is not displayed as part of the web page contents.

This tag makes our documents appear more structured. The elements related to the head element are as follows :

1) Base

2) Title

3) Meta

Purpose :- Contains the head of an html document, which holds information about the document such as its title.

Start Tag/Eng Tag :- Optional / Optional

Attributes :

Class :- Class of the element

Dir : Given the direction of directionally neutral text

ID :- Unique alphanumeric identifier for the tag, which you can to refer to it

Lang :- Base Language used for the tag.

Style :- Inline style indicating how to render the element

Title :- Holds additional information

3) Title :-

Purpose :- Contain the Title of the HTML Document, which will appear in the Web browser's title bar and is used by search engines to refer to the document. Each <head> element should include a <title> element.

Start Tag/Eng Tag :- Required/ Required

Attributes :

Class :- Class of the element

Dir : Given the direction of directionally neutral text

ID :- Unique alphanumeric identifier for the tag, which you can refer to it

Style :- Inline style indicating how to render the element

4) BODY :- Creating A Web Body Page's Body

Purpose :- Contain the Body of the HTML Document, which include the content that will actually appear in the web browser. The entire content of the Web page is placed in the page's <BODY> element.

Start Tag/Eng Tag :- Optional / Optional

Attributes :

Alink :- Deprecated.

Background : Deprecated. The URL of a Graphics file to be used in tiling the browser's Background.

BGColor : Deprecated. The color of the browser's Background.

ID :- Unique alphanumeric identifier for the tag, which you can refer to it

Style :- Inline style indicating how to render the element

Lang : Base Language used for the tag.

Left Margin : Specified the left Margin, the empty space at left of the document, in pixels.

Margin height : Gives the height of the margins at top and bottom of the page in pixels.

Margin width : Gives the width of the left and right margins of the page in pixels

Right margin :- Specifies the right margin, the empty space to the right of the document, in pixels.

Top margin : Specifies the top margin, the empty space at the top of the document, in pixels.

Ex. : <body topmargin=100, leftmargin=50, rightmargin=50, bottommargin=50 text=red bgcolor=yellow>

<P> Paragraph = The paragraph <p> tag tells the browser that the text in our documents constitute a paragraph. The paragraph element is nested inside the <body> element.

This tag is very useful in formatting text and displaying in meaningfully. The paragraph tag uses <p>

</p> tages to insert a blank white space between two block of text. The closing tag </p> is optional.

Attributes :

- 1) Align
- 2) Class
- 3) DIR
- 4) ID
- 5) LANG
- 6) TITLE

For Ex. :-

```
<HTML>
```

```
  <HEAD>
```

```
    <TITLE>
```

```
      Paragraph
```

```
    </TITLE>
```

```
  </HEAD>
```

```
<BODY>\
```

This is the first paragraph. By default it align to left

```
<p align="center">
```

This is the second paragraph in the page. It align at center.

```
</p>
```

This is the third paragraph. It also align left.

```
</Body>
```

```
</HTML>
```

**
 LINE BREAK :** The
 tag is singular tag. The
 tag breaks the line of text or graphic and simply jumps to the start of the next line. It does not affect the font or the spacing of our documents

Attributes :

- 1) Align
- 2) Class
- 3) DIR
- 4) ID
- 5) LANG
- 6) TITLE

For Ex. :-

```
<HTML>
  <HEAD>
    <TITLE>
      break
    </TITLE>
  </HEAD>
<BODY>\
The flowers are blooming <BR>
Their fragrance is in the air <BR>
It brings me memories of my beloved one <BR>
Certainly the best of the fair<BR>
</Body>
</HTML>
```

Headings :

The heading element tags are, <H1>, <H2>, <H3>, <H4>, <H5>, and <H6>. These elements create the “Headlines” in your web pages by displaying bold text in a variety of sizes. <H1> Being the largest. There are six tags, <H1> through <H6> exits.

Purpose : Creates a heading in the web pages, like a headline, using bold font and various sizes. <H1> creates the largest text and <H6> is smallest.

Start Tag/Eng Tag :- Required / Required

Attributes :

Align :- Specifies the alignment of text in the heading. Set to Left, Center, Right, or Justify.

Class : Class of the element.

Clear : Stops text from flowing around other elements.

Dir : Gives the direction of directionally neutral text.

ID :- Unique alphanumeric identifier for the tag, which you can refer to it

Style :- Inline style indicating how to render the element

Lang : Base Language used for the tag.

Language : Scripting Language for the tag.

Ex. :

```
<HTML>
<HEAD>
<TITLE>
  Using the H1 to H6 Heading Tags
</TITLE>
</HEAD>
<BODY>
<H1> Welcome to HTML </H1>
<H2> Welcome to HTML </H2>
```

```
<H3> Welcome to HTML </H3>
<H4> Welcome to HTML </H4>
<H5> Welcome to HTML </H5>
<H6> Welcome to HTML </H6>
</Body>
</HTML>
```

List Element :-

List is used to distinguish selected text from the rest of a page. HTML provides several types of list for different purpose as follows.

- Unordered lists
- Ordered list
- Definition lists

Unordered list :-

The unordered list elements is used to present information that has no particular order. When we use the unordered list element, the information in the list is bulleted, indented and separated from the rest of the text by white space.

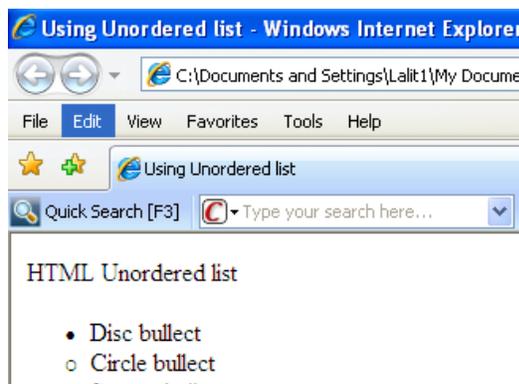
We can represent unordered list by using ` ` tages inside `<Body> ... </body>`tag. The `` tags contain the list items, which represented by using `` tag. `` tag is a singular tag.

Attributes:

- 1) Class
- 2) Clear
- 3) Type :- specifies the type of list item. For unordered lists set to DISC (default solid bullet), SQUARE (Solid Square) or Circle (Hollow bullet)
- 4) Compact
- 5) DIR
- 6) ID
- 7) LANG

For Ex :-

```
<HTML>
<HEAD>
<TITLE>
    Using Unordered list
</TITLE>
</HEAD>
<BODY>
HTML Unordered list
<UL type=disc>
<Li type=disc>Disc bullect
<Li type=circle> Circle bullect
<Li type=square>Square bullect
</UL>
</Body>
</HTML>
```



ORDERED LIST :-

The ordered list element is used to present information in some specific order. When we use the ordered list element, the information in the list in number according to its sequence, indent and separated from the rest of the text by white space.

We can represent ordered list by u sing ` ` tages inside `<Body> ... </body>`tag. The `` tags contain the list items, which represented by using `` tag. `` tag is a singular tag.

TYPE	DESCRIPTION
------	-------------

HTML : BCCA 2ND YR

Type = "1"	Arabic numbers, such as 1,2,3
Type = "A"	Upper case alphabets, such as A,B,C
Type = "a"	Lower case alphabets, such as a,b,c
Type = "I"	Upper case Roman number, such as I,II,III
Type = "i"	lower case Roman number, such as i,ii,iii

For Ex : -

```
<HTML>
<HEAD>
<TITLE>
```

Using ordered list

```
</TITLE>
</HEAD>
<BODY>
```

HTML Ordered list

```
<OL type="1">
<Li> Super computer
<Li> Mainframe computer
<Li> Minicomputer
```

```
<LI type=I value=1>PC
<LI type=1 value=50>PC-XT
<LI type=a value=5>PC-AT
<OL>
<Li> BCCA 1
<Li> BCCA 2
<Li> BCCA 3
</OL>
</Body>
</HTML>
```

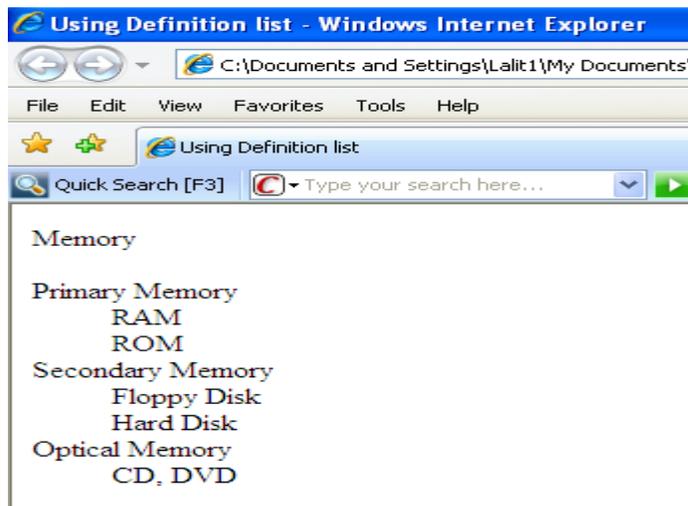


Definition List :

The definition list element is used to specify a term and provide its definition in an HTML document. We can specify the definition list by using the <DL> </DL> tags. Following by the <DT>(Definition term) tag and the <DD> definition description) tag.

Ex. :

```
<HTML>
<HEAD>
<TITLE>
Using Definition list
</TITLE>
</HEAD>
<BODY>
Memory
<DL>
<DT> Primary Memory
```



```
<DD> RAM
<DD> ROM
<DT> Secondary Memory
  <DD> Floppy Disk
  <DD> Hard Disk
<DT> Optical Memory
  <DD> CD, DVD
</DL>
</Body>
</HTML>
```

 Creating List Items :

Purpose : Create a list item to use in ordered or unordered lists.

Attributes :

- 1) Class
- 2) Clear
- 3) DIR
- 4) ID
- 5) Lang
- 6) Language
- 7) Type
- 8) Value

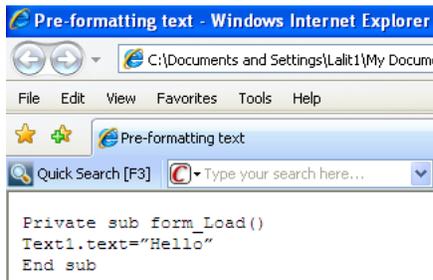
<PRE> Preformatted Text :

Purpose : Tells the browser that the enclosed text is preformatted and should not be reformatted.

The pre-formatted text is used to present blocks of text in fixed-width font. The formatted text is printed to the browser windows in exactly the same format as it is placed in our HTML documents including whitespace. It is generally used to print code sample and it prints in browser using courier font.

Ex :

```
<HTML>
<HEAD>
<TITLE>
  Pre-formatting text
</TITLE>
</HEAD>
<BODY>
<PRE>
Private sub form_Load()
Text1.text="Hello"
End sub
</pre>
<pre>
```



When it comes to block quotes, W3C says

We recommend that style sheet implementations

Provide a mechanism for inserting quotation marks

Before and after a quotation by BLOCKQUOTE in a

quotation

```
</PRE>
</Body>
</HTML>
```

MARQUEE :-

Displays scrolling text in a "Marquee" Style. The Marquee tag is used to create a scrolling effect for the selected text in an HTML page. When we used this tag, the selected text is highlighted and scrolls from right to left or vice-versa. The MARQUEE element used the <MARQUEE> </MARQUEE> tag to scroll the enclosed text.

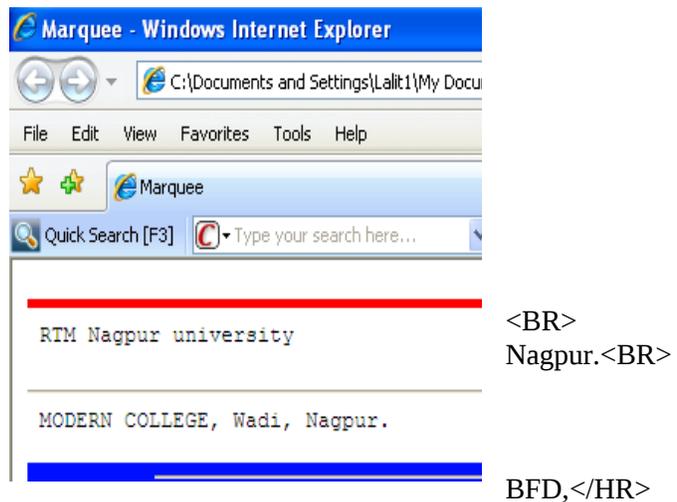
HTML : BCCA 2ND YR

Attributes :-

- 1) Align : Set the alignment of the text relative to the marquee. Set to : TOP, MIDDLE, BOTTOM
- 2) Behavior : Set how the text in the marquee should move. Can be scroll , slide or alternate
- 3) BGCOLOR : Sets the background color for the marquee box. Set the a color value or a predefined color name.
- 4) HEIGHT : Specifies the height of the marquee. The default is the height of the marquee's. Set to a height in pixels or a percentage of the available display height.
- 5) HSPACE : Gives the left and right margins outside the marquee . set to a pixel value
- 6) LANG : Base Language used for the tag
- 7) VSPACE : Sets the top and bottom spacing margins outside the marquee.
- 8) Scrolldelay : Set the number of milliseconds between each successive display of the text.
- 9) Direction : Sets the direction the text should scroll. Can be left, right, down, up.

EX :-

```
<HTML>
<HEAD>
<TITLE>
    Marquee
</TITLE>
</HEAD>
<BODY>
<PRE>
<HR size=5 width=500 align=left
noshade color=red> RTM Nagpur university
<HR>  MODERN  COLLEGE,  Wadi,
<MARQUEE Align="Top" Loop="infinite"
Behavior="Slide" BGcolor="#00FFFF"
width=100% Direction="Right">
<HR>  BCCA,  BBA,  BCA,  MCM,
</MARQUEE>
</Body>
</HTML>
```



```
<BR>
Nagpur.<BR>
BFD,</HR>
```

<HR> Horizontal Rules : Draws a horizontal line to separate or group elements vertically. This element contains no content.

Attributes :

- 1) Align : Sets alignment of rule, set to LEFT, CENTER or RIGHT.
- 2) Class : Class of the element
- 3) Color: Set the color of the rule. Set to a color value or predefined color.
- 4) ID : Unique alphanumeric identifier for the tag which can use to refer to it.
- 5) NOSHADE : Render the rule as two-dimensional, not three dimensional in appearance.
- 6) Size : Sets the vertical size of the horizontal rule in pixels.
- 7) Width : Sets horizontal width of rule. Set to actual pixel count or a percentage.

Ex .:

```
<HTML>
```

<HEAD>

<TITLE>

Using the Horizontal line

</TITLE>

</HEAD>

<BODY>

<HR>

Here what <HR align=left width=80%> look like:

<HR Align=left width=80%>

Here what <HR align=center width=60%> look like:

<HR Align=center width=60%>

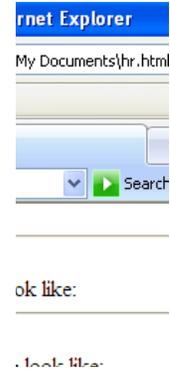
Here what <HR align=right width=80%> look like:

<HR Align=right width=80% size=12 noshade>

</MARQUEE>

</Body>

</HTML>



Formatting of HTML Tag :

Physical HTML Tag : Physical tags are mainly used for formatting text like displaying text as bold, underline, or italics. As physical tags are not browser dependent, so these are more stable than logical tags.

Here's list of the HTML physical style tags.

 Display bold Text.

<I> Display Italic Text.

<IT> Display "teletype" text.

<Big> Display text larger than usual.

<S> and <Strike> Display strikethrough, which has been deprecated in HTML 4.

<Sub> Display a subscript.

<U> Display underline.

<Small> Display text smaller than usual.

Logical styles (tags) : Anything pertaining to logic is called logical. Logical style text tags are used to define the way the text is to be used in a particular context. They are mostly used where the developer needs to display a quote, definition and emphasize on a word.

Following logical tags are used :

 The purpose of this tag is to present character in bold and stand out from the rest of the document.

<DFN> : This definition tag is used to define a concept. It is used to explain a definition.

Comment in an HTML :

Comments are written into HTML documents to describe something about the page comments are never displayed in the browser windows. They are written so that anybody who goes through the code can understand what the HTML page contains.

The Comments are written as –

< !—This is comment -- >

Displaying special characters/Symbols :

There are some special characters, which have to be presented

Link :

Creating Hyperlinks

You use the <A> element to create hyperlinks in HTML. The most common form of hyperlink is undoubtedly the text hyperlink, where the hyperlink itself usually appears underlined and in a different color from the surrounding text to set it off from that text. I'll take a look at creating text hyperlinks first. A Hyperlinks and using the HREF attribute to set the target of the hyperlink to <http://W3C.org> . This is the URL that the browser will navigate to when the user clicks the link.

Linking to A section of a Documents :

A link of a selection document instead of linking to the document as a whole. When you navigate to a document using the document's URL the browser opens the document and positions the top of the document at the top of the browser windows.

<A> Creating A Hyperlink or An Anchor

Purpose : Creates a hyperlink(use the HREF attribute) or an anchor (use the name attribute)

Start Tag/End Tag : Required / Required

Attributes :

Access Key : Assigns a Keyboard shortcut to the hyperlink you usually use a platform-dependent key, like the Alt key in windows, along with the shortcut to give the hyperlink the focus.

Charset : Specifies the character encoding of the target of the hyperlink.

Class : Class of the element

Name : Specifies an anchor name, the name you want to use when referring to the enclosed items as the target of a hyperlink.

HREF : Holds the target URL of the hyperlink. Either this attribute or the name attribute must be used. Set to a URL.

<LINK> - Setting Link Information

Purpose : Specifies the relationship of other documents to the current one as specifying an external style sheet. <Link> is an element for the <Head> section of a page.

Start Tag/End Tag : Required /Omitted

Attributes :

Charset : Specifies the character encoding of the target of the hyperlink.

Class : Class of the element

Dir : Gives the direction of directionally neutral text

Name : Specifies an anchor name, the name you want to use when referring to the enclosed items as the target of a hyperlink.

HREF : Holds the target URL of the hyperlink. Either this attribute or the name attribute must be used. Set to a URL.

Disabled : Indicates that the relationship to other documents is initially disabled.

SRC : Gives the link's source.

Rel : Specifies the relationship described by the hyperlink,

URL :

URL Stands for Uniform Resource Locator(Not, as many people think, Universal Resource Locator). A URL is a Web Address. Most people think of URLs as something like this :

<http://www.starpowder.com/steve/superduperpage.html> but in fact there are many forms of URLs, including relative and absolute URLs. I'll take a look at these first.

Relative and Absolute URLs :

If I wrote something like this <http://www.W3C.org>, you'd realize that I was referring to a specific **URL** :

```
<A HREF=http://www.W3C.org>
```

But what if I wrote this ?

```
<A HREF = "Mountaineering.html">
```

Mountaineering.html as the URL – but it's a perfectly valid URL. It's Valid because it's a relative URL, relative to the current page. If the current page visible in the browser is <http://www.W3C.com> then the web browser will know that the hyperlink in the this html points.

Using relative URLs can save you a lot of time when writing Web pages because they are shorter and often easier to specify.

URL is used when your web page sends data to the web server after the user clicks a Submit button. This data is tacked on the end of the URL.

Type of URLs

Here is a list of the different types of protocols you can use to create URLs with :

- File – File URLs; the address in the URL refers to a local file.
- ftp – File Transfer Protocol, the protocol for transporting files on the Internet. You can also specify an FTP username and password as part of the URL.
- Gopher – This URL uses the Gopher protocol on the internet use a gopher server to find and get files
- http – Hypertext transfer protocol, the protocol you use with Web Pages.
- https – secure hypertext transfer protocol, the protocol you use with secure web pages.

Image tag and Their related attributes,

```
<IMG> =
```

In line Images

The HTML Format for the inline image tag is :

```

```

Where filename.gif is the name of a GIF file that resides in the same directory/Folder as your HTML document. By "Inline", this means that a web browser will display the image in between text. **Attributes for tag are given below :**

src : Specifies the graphic file name with relative path.

Align : specifies the vertical alignment of text next to image with values top, middle and bottom

Specifies the horizontal alignment of image in the window with values (left, right)

Alt : specifies the alternative text for user. The value may display in place of image if it is not downloaded from internet or be used as a tool tip.

Border : applies border to the image with specified thickness i.e. number of pixels

Height : the height attribute is used to increase the height of the image. Value indicates the number of pixels

Width : The Width attribute is used to increase the width of the image. Value indicates the number of pixels

Hspace : the hspace attribute is used to insert a buffer of horizontal space on the left and right of an image.

Vspace : the Vspace attribute is used to insert a buffer of vertical space in between the top and bottom of the image.

Ex :-

```
<html>
```

```
<head>
<title> Image Example </Title>
</head>
<body>

</body>
</html>
```

Link to external images : If we apply <a> tag to image tag then it creates that image as hyper graphics means, a link is created for html document from the image. It is also called as hyperlink button. Following is the example of a hyperlink button :

```
Ex :-=
<html>
<head>
<title> Using hyperlink Image Example </Title>
</head>
<body>
<p><a href="japan.html">  </a>
<a href="Sanfran.html">  </a></p>
</body>
</html>
```

Popular images formats for internet and html

Basically JPEG, and GIF format are used to insert images in Internet and Html documents. These formats are very popular

Table : Basic Table tags and their related attributes

A table is two dimensional matrix, consisting of rows and columns. Table allows us to present data in tabular form on a web page. They also serve an important role in managing document layout.

Table Variables :

Cell : Basic element in a table is a cell or the grid. A cell is formed when row crosses a column.

Rule : the cells in a table are divided using horizontal rules, called rules

Row span/Column span : Certain cell occupies width to two cells or the height of two cells, they are known as row span and column span of the cell, respectively.

Cell spacing : is the amount of space between cells in a table.

Cell padding : is the space the horizontal and vertical alignment

Alignment : We can specify the horizontal and vertical alignment

Table Row Element : The table row element is used to create row in a table. The table row element uses the <TR> tag inside the <table> tag to create a row. Attribute of table row element :

- a) Align Attribute : The align attribute is used to specify the horizontal alignment of the content for all cells or a row.
<TR Align="Left, Right, or center">
- b) Valign attribute :- The align attribute is used to specify the vertical alignment of the content for all cells or a row.
- c) BgColor : The BgColor attribute is used to specify the background color of the row

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Table data Element : The table data element is used to create a data cells. A data cells in a table may or may not contain any data. The table data element uses the <TD> tag within the <table> and <TR> tag to create a data cell/

ROWSPAN : The ROWSPAN attribute is used to specify the number of rows the cell can span

```
<body>
```

```
<table border>
```

```
<TR>
```

```
<TD rowspan=2>This cell span across two rows
```

```
<TD> but these words<TD> span across
```

```
<TR>
```

```
<TD> different cells <TD> and two rows
```

```
</table>
```

```
</body>
```

This cell spans across	But these words	Span across
two rows	Diffent cells	And two rows

Table Heading Element : The table heading element is used to create heading cells for a table rows, columns or both. The table heading element uses the <TH> tag to create heading cells, which makes the cell bold.

UNIT 3 :- Frames and Embedding Multimedia

Frames :

<Frameset> :- Creating Frames

Purpose : Structures a document using frames. Replaces the <Body> element and uses the ROWS and / or COLS attribute to set up the frame. Use the <Frame> element to specify the content and name of individual frames.

There are two type of Frames

- 1) Vertical Frames
- 2) Horizontal Frames

Start Tag/ End Tag : Required / Required

Attributes :

Use this attribute in the outermost Frameset tag to set the border thickness for the frames within the Frameset. Set to positive integers indicating the pixel space between frames; set to 0 to set the Frameborder to NO.

Border Color : Set the color of the borders for the frames in the frameset.

Class : Class of the element.

Cols : Sets the number of columns in the frameset.

Frame border : Sets whether or not borders surround the frames in the Frameset.

Frame spacing : Sets the pixel spacing between frames.

ID : Unique alphanumeric identifier for the tag, which you can use to refer to it.

LANG : Base language used for the tag.

Row : Sets the number of rows in the frameset.

FRAME Tag :

Once the browser windows is divided into rows and columns, each unique section defined can be loaded with different HTML documents. This is achieved by using the <FRAME> Tag. **Following are the attributes :**

HTML : BCCA 2ND YR

SRC="URL" => Indicates the URL of the documents to be loaded into frame.

Marginheight = Specifies the amount of the white space to be left at the top and bottom of the frame. The value is no. of pixels

Marginwidth : specifies the amount of the white space to be left along the sides of the frame. The value is no. of pixels.

Name : Gives the frame a unique identification or name so it can be targeted by other documents. The name gives must begin with an alphanumeric character.

NORESIZE : Disables the frames resizing capability.

SCROLLING : Controls the appearance of horizontal and vertical scrollbars in a frame. This takes the values "YES", "NO" or "auto".

For Ex :=

```
<HTML>
<HEAD>
</title>
Modern College Page
</title>
</head>
<Frameset rows="40%,*"SCROLLING=NO NORESIZE>
<Frameset Cols="50%,50%" Name=MyFrame Marginheight=10>
    <FRAME SRC="C:\1.html>
    <FRAME SRC="C:\2.html>
</Frameset>
<Frameset Cols="50%,50%">
    <Frame SRC="C:\3.html>
    <frame SRC="C:\4.html>
</frameset>
</html>
```

FRAME LINKING :-

1. While linking frame two attributes plays important role – Name and target
2. Name attribute is specified with frame and target attribute is used with <a> tag to specify the target i.e. where to display the frame.

```
<html>
<head>
<title>
Letter A</title>
</head>
<body>
<B>This is Letter A</B>
<BR>
<B> I am observing letter A</B>
</body>
</html>
```

Save as A.html

```
<html>
<head>
<title>
```

```
Letter A</title>
</head>
<body>
<B>This is Letter B</B>
<BR>
<B> I am observing letter B</B>
</body>
</html>
```

Save as b.html

image maps <map> and <area> :- A single image in which different areas can contain different links. Each hyperlink is associated with a defined area of the image called hotspot. When clicked it activates that link i.e. a single image holding different links on different areas for different purposes.

An image map is a large image that contains numerous hot spots that can be selected, sending the user to a different anchor destination. There are two basic types of image mapping.

- 1) Server-side image mapping
- 2) Client side image mapping

In the server side image map, the user clicks on an image but the server must decode where the user clicked before the destination page is loaded. With the client side image maps, all of the map information which regions map to which URLs can be specified in the same HTML file that contains the image.

Server side Image Map :-

To specify server side image map, use <a> element to enclose a specially marked element. The <a> element href attribute should be set to the URL of a program or map file to decode the image map. The Elements must contain the attribute ISMAP so that the browser can decode the image appropriately

In the server side image map, the following process is followed.

- i. The user clicks somewhere within the image
- ii. The browser sends a request to the web server, asked for the URL of the documents associated with the area clicked.
- iii. After consulting a file that shows which co-ordinates map to which URL the server send back the requested information
- iv. After receiving the response, the browser requests the new URL.

Client-Side image map :-

Which using client-side image mapping the usemap attribute to the element and have it reference a <map> element that defines the image map's active areas.

<map> Tag :- The map element has one attribute, Name, which is used to specify the identifier associated with the map. The map name is then referenced within the element, using the USEMAP attribute attribute and the associated fragment identifier.

<area> Tag : The <area> tag should be used within <map> and </map> elements. This tag specifies the area or shapes on the map, which create that image map. The <area> element requires no closing element.

From Designs :

A form in HTML is enclosed between the <form> and </form> tags. The forms itself contains regular text, other HTML elements such as tables and form elements such as text boxes, check boxes, pulldown menus buttons etc. It is also called as form controls or form fields.

Attribute :-

Action : This is usually set to a URL of the program that will handle the form data. This URL will usually point to a CGI script to decode the form results.

Form Object Properties :

- Action : This specifies the URL or CGI script file name the form is to be submitted to it allow reading
- Element : An array of field and elements in the form
- Encoding : This is a read or write string. If specifies the encoding method the form data is encoded in before being submitted to the server.
- Length : The number of field in the elements array
- Name : the form name, corresponds to the form name attribute
- Target : the name of the frame

FORM DESIGN :

Introduction :

An HTML form provides data gathering functionality to a web page. It provides full range of GUI control. A form is an area that can contain form elements. When creating an interactive web site for the internet it is necessary to capture user input and process this input. Based on the result of the processing appropriate information from a web site can be dispatched to be viewed. Both the capturing of user input and the rendering of appropriate web pages takes place in the client side.

Form element are elements that allow the user to enter information (Like text fields, textarea, field, drop down menus, radio buttons, checkboxes etc) in a form.

Form Object Methods :

- Reset () – Used to reset the form elements to their default values.
- Submit () – Submits the form as though the submit button were pressed by the user.

Event :

- OnReset
- OnSubmit

INPUT :

The most used form tag is the <input> tag. The type of input is specified with the type attribute. A form element that can be represented as a text box, password text box, check box, radio button, submit button, reset button, hidden input field, image (which acts as a submit button,) File selection box or general button.

Attributes :

- Name : Can be used so that the value of the element can be processed.
- Type : Can be used to specify the type of input. Values can be text(default), password, checkbox, radio, submit, reset, hidden, image, file or button.
- Value : Can be used to specify the initial value. It is required when type is set to checkbox or radio. It should not be used when type is set to file.
- Checked : Can be used type is set to checkbox or radio to set the initial state of check box or radio button to be selected. It must be used in the format checked= “checked”
- Mextlength : Can be used to specity the maximum number of character allowed in a text box.
- Src : can be used when type is set to image to specify the location of an image file.

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Form Controls :-

Text Fields : The text control enables us to create a text field. Text field are used when we want the user to type letters numbers etc. in a form

First Name : `<input type="Text" Name = Fname Size=20
Type=text`

This generates a input field, where the user can enter up to maxlength character. The size attribute list the length of the input field. The value attribute specifies the initial value for the input field.

`<Form>`

First Name = `<input type="Text" name="Firstname">`
`
`

Last Name = `<input type="Text" name="Lastname">`

PASSWORD :

The password control is control is similar to the text control. It enables us to create a password field. Whenever we type text in the field. An asterisk (*) is displayed in place of each character input. This field is used when the user has to enter a password without displaying the text of the password.

`<input Type= "PASSWORD" Name=Password> Enter Password </input>`

Ex :

`<form>`

User Name `<input Type= "Text" name="uname">` `
`

PASSWORD `<input type="Password" name="pass">`

`</form>`

RADIO BUTTOM :

Radio Buttons are used when we want the user to select one of a limited number of choices. If the user selects a radio button from a group then the others become deselected. We can group RADIO Button by giving them the same NAME but different VALUE. The VALUE indicated the button content. By default all RADIO buttons are unselected. We can control this status by defining the CHECKED attribute within the Input tag.

EX :

`<form>`

`<input Type= "radio" name= "Gender" Value="male"> Male
`

`<input Type= "radio" name= "Gender" Value="female"> Female`

`</form>`

Checkboxes :

Checkboxes are used when we want the user to select one or more options of a limited number of choice. We can create a group of checkboxes by giving them the same Name and different Value, Checked attribute will select the check box by default.

EX :

`<form>`

`<input Type= "Checkbox" name= "Documents" Value="SSC"> SSC Result
`

`<input Type= "Checkbox" name= "Documents" Value="HSSC"> HSSC Result
`

`<input Type= "Checkbox" name= "Documents" Value="Caste"> Caste certificate
`

`<input Type= "Checkbox" name= "Documents" Value="Lev"> Leaving
`

`</form>`

Reset Button :

The Reset control enable us to create RESET button on the form. We the user click the RESET button, the value entered by the user in the form are cleared automatically or are set back to the default values it any.

EX :

```
<form>
Checkbox properties <BR>
Name : <input type="text" name="name"><BR>
Value : <input type="text" name="value"><BR> <BR>
Checked <input type= "checkbox" name= "1" ><BR>
Required<input type= "checkbox" name= "2" ><BR>
<BR>
<input Type= "Submit" Value="Submit">
<input Type= "reset" Value="Reset">
</form>
```

Submit Button :

The submit control is used to create Submit button on the form. When the user chlick the submit button, the browser sends the value in each input field on the form to the Web server specified in the ACTION attribute of the FORM tab. The create a submit button we need to specify the value as submit for the type attribute of the input tag. The value attribute specifies the label of the button. Name attribute is used to specify the name of the submit button.

EX :

```
<form>
<name= "input" action = "Users.asp" Method="get" >
<input type= "Text" name= "User" >
<input Type= "Submit" Value="Submit">
</form>
```

Select :

The Select element is a container element. This element is used to create a listbox or a drop down listbox in a form. To create a drop down listbox or a listbox the select element used the <select>...</select> tag. The option element is contained within the select tags. The option element defines the options in the list box. Each selected element should contain at least one option element.

Attribute :

- Multiple : Indicates that the user is allowed to make several selections from the listbox
- Name : Identifies the user selection when the form is submitted
- Size : Specifies the number of visible items. If the value specified in the size attribute is greater than one, then the resulting form control is a listbox instead of a drop down list box.

Options :

The Option element can only occur within a SELECT elements. It represents a choice in the list and can take the following attributes :

- Selected : indicates that the option is initially selected
- Value : indicates the value to be returned if a particular option is selected.

```
<select>
```

```
<option selected> Angel Fish </Option>
<option> Cat Fish </Option>
<option> Discuss </Option>
<option> neon Tetra </Option>
</select>
```

Textarea : The <Textarea> tag is used to create a multiline text input area for the user. It is very useful in those forms where we want a detailed user feedback with multiple line entries. We can place some default text in this area.

Ex. :

```
<form action="html_textarea.html" method="post">
<textarea name="textarea12"> This is the default size. </textarea>
<br>
<textarea cols="45" rows="4" name="textarea13"> </textarea>
</form>
```

Image :

The type="image" control allows us to use a graphic image or a picture as the equivalent of a type="Submit" button.

The type="image" also allows us to display a mouse-sensitive image map within a form.

The src attribute is used to set the location of the image file. The alt attribute to provide text for answer that cannot display an image.

CODE : <input type="image" nam="submitgif" src="/images/submit.gif" onclick="submitform()" border="0">

Ex:-

```
<form>
<h1>Check Box</h1>
Name<br> <input type="Text" name="r1"><br>
Value <br><input type="text" name="r2"><br>
<input type="checkbox" name="r3">Selected <br>
Click on the image to submit the form<br>
<input type="image" name="submit" src="c:\computer.jpg" onclick="submitform()" border="0"
height="100" width="100">
</form>
```

File Control :

The type="file" control is used to attach a file to a form. When the form is submitted, the file is passed along with all the other contents of the form.

This control displays an input window and a browse button. By clicking on the browse button, the user can search direction for the desired file. Alternately, we can enter the path and name of the file into the input window.

For Ex.

```
<Form method="post" enctype="multipart/form-data" action="1.asp">
<input type="file" name="file1">
```

EX:

```
<form>
<h1>select the file in upload</h1>
<Form method="post" enctype="multipart/form-data" action="1.asp">
<input type="file" name="file1"><br>
<input type="submit" value="submit">
```

</form>

Embedding Multimedia :

Introduction : We can add music or video into our web page using different ways. The easiest way to add video or sound to our web site is to include the special HTML tag call <embed>. This tag causes the browser itself to include controls for the multimedia automatically. We do not need to have any active, Java VM, VB Script or JAVA Script to support this <embed>tag.

We can include<noembed> tag to support browsers which don't recognize the <embed> tag. For Ex. We can use <embed> to display a movie of your choice, and <noembed> to display a single JPG image.

In the following example water.mid file will be embedded into the webpage. If the browser is not supporting the <embed> tag then it will display only waterfall image enclosed in the <noembed>tag.

```
<embed src=C:\water.mid" width="100%" height="60">
```

```
<noembed></noembed>
```

```
</embed>
```

- **BACKGROUND** :- We can use any image as a background for web page. The browser tiles this background image on to our page. We can make our own background image or use already existing image.

To insert an image as a background, we need to include the BACKGROUND attribute in <BODY> element as follows.

```
<Body Background="Sun.jpg">
```

Adding Audio and Video on web page :

We can add audio and video to an HTML page to make the page interesting and appealing to a user. Audio and video also helps to add utility to our page.

Inserting Audio/sound into web page :

We can add audio to an HTML page by using various formats. For ex.

FORMAT	EXTENSION
Wave/Wav	.wav
AIFF/AIFC	.aiff, .aif
Real Audio	.ra
MPEG/MPG	.mp3
AU	.au
MIDI	.mid

The .wav format was developed by Microsoft and IBM. It is the audio standard for windows platform.

The .AIFF/AIFC format (audio interchange file format) This format is used on macintosh platform.

The real audio format is lower quality audio, but loads much more quickly. The file size of real audio file is much smaller compared to WAV or AIFF formats.

The .MPEG/MPG format(moving picture Experts Group) The main feature of MPEG is that it does not occupy space and yet gives very good sound quality. The latest MP3 format

The .AU format is a sun Microsystems format. it is popular in the Unix environment and has the advantage of being available on a wide variety of system.

Hyperlinking to Music in a Web Page :

We can link music with web page using anchor tag.

```
<body>
```

```
<A href="sound.mid"> click here to listen to me </a>
```

```
</body>
```

When user click on the link the console will automatically appear on the screen. Which run sound file and display controls to user for play, pause, stop, play time etc.

Adding sound using the EMBED TAG :

```
<HTML>
<HEAD>
<title>
</title>
</head>
<body>
  <a href="scene2.mid"> listen Music</a><br>
  <embed src="scene3.mid" Autostart="True" HIDDEN="false" Controls="Console"
  Volume="80" width="135" Height="50">
  <Body>
</html>
```

Adding Sound using the EMBED tag :

<EMBED> tag is used to add audio and video files into html page. That is these file can be run within the browser. The EMBED tag was initially compatible only with netscape browsers and then other browsers like internet explorer 4.0 and above.

EMBED tag also supports various controls to customize the console such as start stop and pause file.

```
<title> Modern Website </title>
</head>
<body>
<a href="C:\abc.mp3"> listen music</a><BR>
<EMBED SRC="abc.mp3" Autostart="True" Hidden="False" Controls="console"
volume="80" width="135" height="50">
</body>
</html>
```

Attribute :

Autostart = "True" it tells the browser to play music when the web page is loaded. If it is false then we have to play it manually

HIDDEN : False : It tell the browser not to hide the console. True will hide control;

Volume : 60: set the volume of the music. The volume can be set to between 1 to 100, 50 is the default value.

Controls : This attribute is used to set stanadard console which display the control like play pause and stop sound it has also has following values.

Controls : "Console" gives te complet console with play stop and pause button.

Controls : "Smallconsole" display only a play and stop buttons

Controls ; " Playbutton" display only a play button.

VIDEO FILE FORMAT :

Following are the common video formats which can be used in html are

Format	Extension
AVI	.avi
Quick Time	.mov
MPEG	.mpeg . mpg
GIF	.gif

We can add video into our web page by creating hyperlink to the video as follows :

```
<A HREF="prog1.avi" ALT="Video of program"> Click to see program files</A>
```

Adding video using the DYN SRC tag :

We can include inline video using DYN SRC (Dynamic Source) attribute with IMG tag.

```
<img dynsrc= "prog1.avi" Start="Fileopen" Width="410" height="320" Alt="program video"
Border="15" controls loop="2">
```

The Dynsrc attribute is used to provide pathname of the video format

Start attribute controls the starting the video itself

Loop attribute is used to set the number of times the video to play.

Adding video using the EMBED tag :

We can also insert video using EMBED tag as following

```
<EMBED src= "prog1.avi" border="0" Autostart="True" height="410" Height="320"
Loop="true">
```

Unit 4 :

CASCADING STYLE SHEETS (CSS) AND XML

DYNAMIC HTML:

DHTML is a new and emerging technology that has evolved to meet the increasing demand for eye-catching and mind-catching web sites i.e. website must be more attractive, dynamic. DHTML allows the web authors to add interactive and dynamic features in the web, which makes the web more attractive.

DHTML combines HTML with Cascading Style Sheets (CSSs) and Scripting Languages. HTML specifies a web page's elements like table, frame, paragraph, bulleted list, etc. Cascading Style Sheets can be used to determine an element's size, color, position and a number of other features. Scripting Languages (JavaScript and VBScript) can be used to manipulate the web page's elements so that styles assigned to them can change in response to a user's input.

8.1.1 Advantages of DHTML

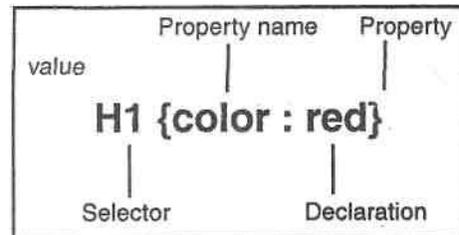
1. Enables us to separate content from formatting
2. Reduces download time by removing formatting information from the document.
3. Allows us to ensure a consistent appearance across a site.
4. Creates interactive web pages.
5. It removes the load of processing data, picture or may be an animation from the web server to the client machine.
6. It can be embedded in a HTML file without creating a separate file.
7. It is a combination of HTML, Scripting and object-oriented programming which creates attractive web pages.
8. Dynamic HTML document displays on its structure known as DOM (Document Object Model).

CASCADING STYLE SHEETS (CSS)

CSS was first developed in 1997 and now, all modern browsers support all of CSS Level 1, most of CSS Level 2, and some aspects of CSS Level 3.

Style Sheets are powerful mechanism for adding styles (e.g. fonts, colors, spacing) to Web documents. The different features of Style Sheets can be added into the HTML document for better appearance of the web page and it doesn't affect the HTML document.

It was intended to allow developers to separate content from design so that HTML could perform its own task for displaying content, without worry about the design and layout. The browser follows an order called a cascade - to interpret the information. A Web style sheet is intended to cascade through a series of style sheets, like a river over a waterfall. The water in the river hits all the rocks in the waterfall, but only the ones at the bottom affect exactly where the water will flow. The same is true of the cascade in Web style sheets.



8.2.3 Defining a Style :

A rule is a statement that defines a style. A rule consists of two parts :

1. Selector
2. Declaration

Selector: A selector is an HTML element that is linked to a particular style. For example, the selector in the preceding diagram is the H1 element.

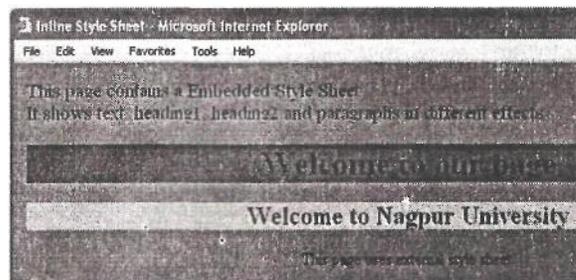
Declaration : A declaration defines the style for the selector. A declaration has two parts, property name and property value. Property name is the name of the property for which we need to define a style.

Property value is the value assigned to the property. For example, as in the diagram, color is the property and red is the value assigned to the color property. **The different Style Sheets are :**

1. **Inline Style Sheet:** It adds a specific style to the document controlled by the tags. For ex. We want to color a paragraph with red. Then mention it as red and control the paragraph settings inside the span tags.
2. **Embedded Style Sheets :** This method embeds the styles inside the `<style>` tags and ends with `</style>` tags. They are placed inside the `<body>` tag.
3. **External (Linked) Style Sheets :** This method embeds the Style from an external file. For ex. Style is created and saved with an extension .css. Later it is linked with the HTML document.

1. Inline Style Sheet

In the Inline Style Sheet; we have to set style with tags. Suppose we want to set the font style of the



paragraph we should write `<P style = "font`

style: italic"> For example:

```
<HTML> <HEAD>
  <TITLE> Inline Style Sheet </TITLE> </HEAD>
<BODY bgcolor="lime"> <P style="font-size:14pt"
font-weight="bold" "font-style:italic: id="p1"
color:yellow>
```

This page contains a Embedded Style Sheet
 It shows text, heading1, heading2 and paragraphs in different effects <CENTER> <H1 style=background-color:blue ;font-style:italic id="p2">

Welcome to our page ->

```
<H2 style=background-color:pink ;font-style:italic id="p2">
  Welcome to Nagpur University
</H2>
<P> This page uses external style sheet.</P> </CENTER>
</BODY> </HTML> ,
```

2. Embedded Style Sheets

The Embedded Style Sheets are the part of a Web Page itself. They are useful because they collect the styles applied throughout the page and put them into one place - the <STYLE> element in the page's head. For example: <HTML> <HEAD>

```
<TITLE> Embedded Style Sheet </TITLE> </HEAD>
<STYLE>
```



```
  BODY {background-color:lightblue;
coloured; margin -left: 0.5in; margin-
right:0.5in} H1 {background-color:yellow;
coloured}
H2 {background-color:pink; color:blue}
P {font-size: 14pt;color:green;} </STYLE>
<BODY>
```

This page contains a Embedded Style Sheet
 It shows text, heading1, heading2 and paragraphs in different effects

```
<CENTER> <H1>
  Welcome to our page - </H1> <H2>
```

Welcome to Nagpur University </H2>

E-Commerce and Web Designing

<P> This page uses external style sheet.</P> </CENTER>
</BODY> </HTML> '

3. External Style Sheets :

External style sheets are stored separately from our web page. These are useful if we are setting the styles for an entire web site. When we change the styles in an external style sheet, it will reflect to all pages that use it. The <LINK> element is used to specify that our pages use an external style sheet. Setting its HREF attribute is used to specify the name of the style sheet. (That file has the extension .CSS for CSS style sheets.)

For Ex. The HTML file having name myfile.html

<HTML> <HEAD>

<TITLE> External Style Sheet </TITLE> <LINK
REL="stylesheet" HREF="style.css"> </HEAD>
<BODY>



This page contains a
External Style
Sheet
 It shows
text, heading!,
heading2 and
paragraphs in different effects

```

<CENTER> <H1>
  Welcome to our page </H1> <H2>
  Welcome to Nagpur </H2>
<P> This page uses external style sheet.</P> </CENTER> </BODY> </HTML> The style is
created and saved in a file named as style.css

```

```

<style>
BODY {background-color: "lightblue"; color: red; font-family: Arial}
H1 {background-color:yellow; color:red}
H2 {color:blue}
P {font-size: 14pt; color:green;}
</style>

```

Cascading Styles

Cascading styles are called cascading because a child element (i.e. an element enclosed in another element) can inherit the styles of its parent. In this example, a style (setting indentation and font size) is applied to a <DIV> element. Another <DIV> element inside the first <DIV> element will inherit those styles:

```

<HTML>
<HEAD>
<TITLE> Style Inheritance</TITLE>
<STYLE>
DIV.indentlarge{font-size: 24pt;margin-left: 10%}
</STYLE>
</HEAD>

```

```

<BODY>

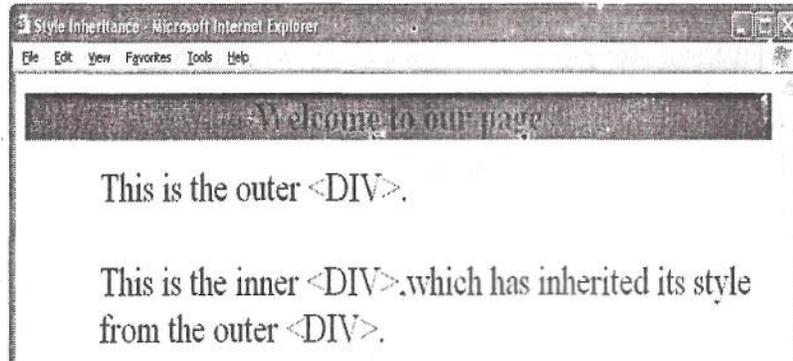
```

```

<CENTER>
<H1 style=background-color:blue ;font-style:italic>
Welcome to our page </H1>
</CENTER>
<DIV CLASS="indentlarge">
This is the outer &lt;DIV&gt;.
<BR> <BR> <DIV>

```

This is the inner <DIV>, which has inherited its style from the outer <DIV>.
 </DIV> i. </BODY> </HTML>



Style Sheet Properties

Font Properties / Attributes:

The CSS can support different many font properties. These font properties are used to set font style, font size, weight, etc.

Font Family :The first thing that appears in the Font attributes is the Font Family. There are many types of font available and while describing a style we have to mention the font family. For ex. {Font-Family: Arial}. We can also provide more than one font styles; so it will display another font style if the first style is not available. For ex. {Font-Family: Arial, Arial Black}.

Font Size: The font size attribute is used to specify the size of the font. We can specify font size using five different measurement units

1. Point: We can describe it in points. For ex. {Font-size: 14pt}.
2. Pixel: We can measure fonts in pixels. For ex. {Font-size: 20px}.
3. Centimeter: We can specify in Centimeter.. For ex. {Font-size: 6cm}.
4. Inches : We can specify in Centimeter.. For ex. {Font-size: 1 in}.
5. Percentages : We can set font size in percentage also. For ex. {Font-size: 120%}.

Font Style : The style attribute helps us to set the style of the font. For ex. {font-style: italic}. To set the default status of the font use attribute as {font-style: normal}.

Font Weight: Weight represents the thickness of the font. We can set it to extra light, semi-light, light, medium, extra-bold, semi-bold and bold. Before we assign the font weight be sure it is available because except bold other font-weight available with only some browser. For ex. {font-weight: bold}

Text Decoration : This attribute is used to apply additional style to the font. The Text-decoration attributes are none, underline, italic and linethrough. For ex. {Text-decoration: Underline}.

Line-height: It is used to set line spacing between the lines of the text. For ex. {line-height: 12 pt}.

Example:

```
<HTML>
<HEAD>
  <TITLE> Font Styles </TITLE>
</HEAD>
<BODY>
<STYLE>
```

H1 {font-family : Lucida Handwriting; Font-size : 20pt; font-weight: bold; text-decoration: underline}

P {font-family: Arial; Font-size: 14pt; font-style: Italic; line-height:50pt}

</STYLE>

<CENTEFi>

<H1>

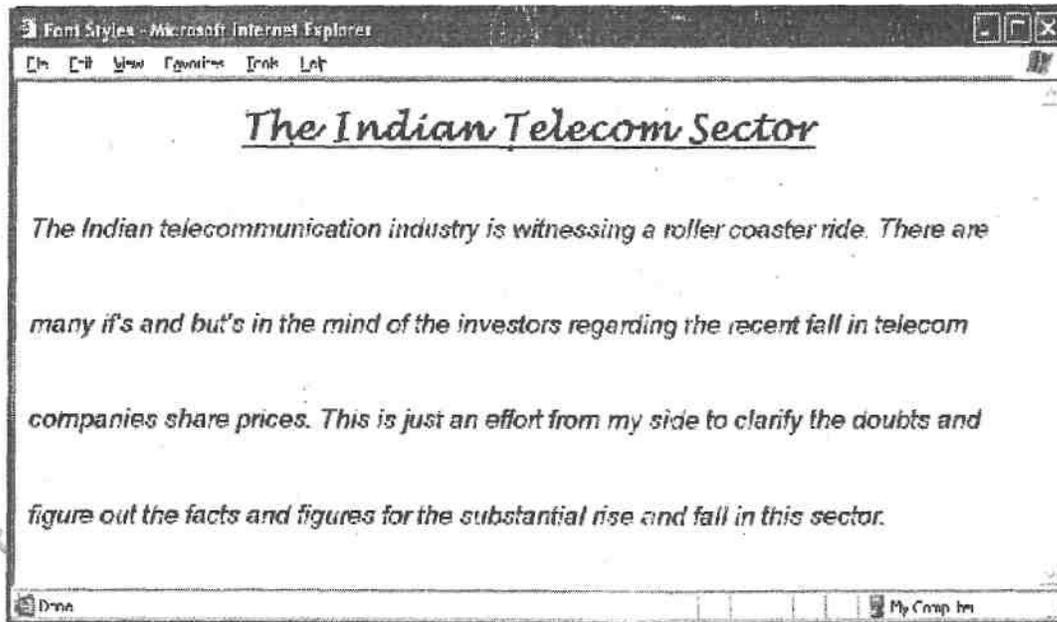
The Indian Telecom Sector

</H1>

</CENTER>

<P>

The Indian telecommunication industry is witnessing a roller coaster ride. There are many if's and but's in the mind of the investors regarding the recent fall in telecom companies share prices. , This is just an effort from my side to clarify the doubts and figure out the facts and figures for the substantial rise and fall in this sector. </P> </BODY> </HTML>



XML:

INTRODUCTION TO XML

XML stands for extensible Markup Language. XML was developed by an XML Working Group (originally known as the SGML Editorial Review Board) formed under W3C in 1996, which is chaired by Jon Bosak of Sun Microsystems. It is a subset of Standard Generalised Markup Language (SGML). XML is also known as an extension of the internet language HTML.

The word extensible reflects that the language is flexible, scalable, and adaptable. XML can distribute information over the Web or between software applications without the constraint and limitations of HTML

In XML we can create our own tags and syntax so that we can set the document structure and

data structure for our website.

Example:

```
<?xml version="1.0"?>
<note>
  <to>Ram</to>
  <from>Kumar</from>
  <heading>Reminder</heading>
  <body>Don't forget me this weekend!</body>
</note>
```

The above code is having sender and receiver information, it also has a heading and a message body. **XML?**

- * XML stands for *Extensible Markup Language*
- * XML is a markup language much like HTML
- * XML was designed to *carry data, not to display data*
- * XML tags are not predefined. You must define your own tags
- * XML is designed to be self-descriptive
- * XML is a W3C Recommendation

9.1 XML IS VERY USEFUL IN FOLLOWING APPLICATIONS :

1. Electronic books with new markup languages to express rights and ownership.
1. Electronic commerce applications to serve a customer of different organizations with new markup.
2. Exchange of information between organizations.
3. Handheld devices and smart phone with new markup languages.
4. Offloading and reloading of darkness.
5. Scientific applications with new markup language for mathematical and chemical formulas.
6. Organise content, so that content is being made available to different Web sites.

9.2 XML AS SGML

XML is a SGML (Standard Generalized Markup Language) language. It accepts the codes of HTML too. XML documents are made up of storage units called entities, which contain either parsed or unparsed data. Parsed data is made up of characters, some of which form character data, and some of which form markup.

XML is a subset of SGML. Its goal is to enable generic SGML to be served, received, and processed on the Web as HTML. XML has been designed for ease of implementation and for interoperability with both SGML and HTML.

XML encodes a description of the document's storage layout and logical structure. XML provides a mechanism to impose constraints on the storage layout structure.

A software module called an XML processor is used to read XML documents and *provide* access to their content and structure.

9.3 DESIGN GOALS OF XML

1. XML documents should be human-readable and reasonably clear.
2. The XML design should be prepared quickly.
3. The design of XML shall be formal and short.
4. XML documents shall be easy to create.
5. XML shall be straightforwardly usable over the Internet.
6. XML shall support a wide variety of applications.
7. XML shall be compatible with SGML
8. It shall be easy to write programs which process XML documents.

9.4 APPLICATIONS OF XML

f. Document Applications: *The main advantage of XML is that it concentrates on the structure of the document, and this makes it independent of the delivery medium. Hence, it is possible to edit and maintain documents in XML and automatically publish them on different media.*

2. Data Application: XML can-also be used to give document management access to the software tools that has been used to manage data, such as databases.

W DIFFERENCE BETWEEN HTML V/S XML

No.	HTML	XML	I
1.	HTML is designed for specific application to convey (hibernation <o rixrrrrrrrs" (asaafyfibr whatever ase we treecrtrfoc visuaffy, through a web browser).	; XML has no specific application; it is designed	
2.	HTML is used for display information.	XML is designed for data exchange specifically.	
3.	HTML may not display PDF files properly, if we have not installed adobe acrobat.	XML will display PDF files properly, even if adobe acrobat is not installed.	
4.	HTML authors can give attractive look to his webpage easily.	XML authors may not.	
5.	HTML has larger file size.	XML file has small file size, which helps in the flexibility of universal data access.	
6.	In HTML document type declaration is optional.	DTD is compulsory.	
7.	HTML uses predefined tags.	We can create own tags in XML	
8.	HTML does not give any error message, if tags are not properly used.	XML generate an error if there is any error in our code.	
9.	HTML is not useful in wireless applications.	XML is popularly used for wireless user.	

10.	Current version of HTML is 4.0	Current version of XML is 1.0
-----	--------------------------------	-------------------------------

9.6 XML SOFTWARE

Many applications are available to manipulate XML documents. They are in the form of browsers, editors, etc. as follows :

1. **XML Browsers** : A browser is used to view our web page created by XML document, Microsoft Internet Explorer support XML. Internet Explorer 5 and above are most powerful XML browser. Netscape Navigator6 is also supporting XML.
2. **XML Editors** : For creating XML documents, we need to have document editors. For ex. Notepad, Adobe Framemaker (it is an ideal document handler for XML)
3. **XML Parsers** : A Parser is a program used in conjunction with other applications. A parser prepares our document for other programs and checks for well formedness to ensure that our document follows all of the syntax requirements; otherwise it reports and error message and fails to display the document. Some of the XML parsers are SAX, expat, LT XML, etc.
4. **XSL Processor** : XSL enables us to produce classic HTML that works with current generation browsers while enabling us to retain the advantages of. XML internally. There are many XSL processors available such as LotusXSL.

97 COMPONENTS OF XML DOCUMENT :

9.7.1. Processing Instruction

An XML document usually begins with the XML (optional) declaration statement, which is also called the Processing Instruction (PI). The PI provides information regarding the way in which the XML document should be processed. PI should be written in lowercase only. The PI statement can be written as:

```
<?xml version = "1.0" encoding = "UTF-8"?>
```

Here, xml version 1.0 is used to specify version of XML (it needs when the new version releases). PI statement uses the encoding property to specify the information about the encoding scheme that is used to create the XML file. The encoding scheme is a standard character set for a language. UTF (Unicode Transformation Format[Universal Character Set-UCS])-8 is a standard character set that is used to create pages written in English. UTF-8 stands for an 8-bit character set (support 0 to 127 character). If this information is **not provided**, the data may **not be displayed properly**.

9.7.2. XML Tags

Tags are used to specify a name for a given piece of information. It is a means of identifying data. Data is marked up using tags. Consider the following example. <P> Nagpur </P>

Here <P> is predefined HTML tag or markup, which encloses the name. Here, <P> is the opening tag, & </P> is the closing tag. As XML allows us to create our own tags, the same information can be stored in the following way : <UNI_NAME> NAGPUR</UNI_NAME>

Here <UNI_NAME> is a new tag created using XML. This tag is used to store name of the University.

9.7.3. Elements:

Elements are the basic units that are used to identify & describe data in XML. They are the building blocks of an XML document. Elements are represented using tags.

XML allows us to provide meaningful element names. As in the above ex. <UNI_NAME> is used to specify name of the university.

An XML document must always have a **root element** A root element contains all other element in the document. In the following example all the other elements are embedded within the opening and closing tags of the root element. <bookstore>

```
<book category="CHILDREN">
  <title>Harry Potter</title>
  <author>J K. Rowling</author>
  <year>2009</year>
  <price>1230</price> </book>
<book category="Programming">
  <title>C Programming</title>
  <author>Pravin Ghosekar</author>
  <year>2008</year>
  <price>2Q0</price> </book>

</bookstore>
```

In the example above, <bookstore> and <book> have element contents, because they contain other

elements. <author> has text content because it contains text.

In the example above only <book> has an attribute (category="CHILDREN").

XML elements must follow these naming rules:

- * Names can contain letters, numbers, and other characters
- * Names cannot start with a number or punctuation character
- * Names cannot start with the letters xml (or XML, or Xml, etc)
- * Names cannot contain spaces
- * Any name can be used, no words are reserved.

9.7.4. Content:

The information that is represented by the elements of an XML document is referred to as the content of that element. For **ex.**

```
<UNIVERSITY> RTM Nagpur University </UNIVERSITY>
```

Here, RTM Nagpur Univeristy is the content of the UNIVERSITY element. An element can contain character or data content, Element Content, Combination or mixed content. **Character or data content:** it contains only textual information. **Element Content:** Element (parent) can contain other elements (child element).

```
<AUTHOR>
<FNAME>      </FNAME
      <LNAME> Smith
</AUTHOR>
```

Here, the element AUTHOR contains two element, FNAME and LNAME. Therefore, AUTHOR is said to be a parent element, and FNAME & LNAME are child.

Combination or Mixed Content: Elements can contain textual information as well as other elements. <PRODUCTDESCRIPTION> The product is available in three colors.

```
<COLOR> RED </COLOR>
<COLOR> BLUE </COLOR>
<COLOR> GREEN </COLOR>
</PRODUCTDESCRIPTION>
```

Here, the PRODUCTDESCRIPTION element contains textual information as well as the COLOR element.

9.7.5. Attributes:

Elements can have one or more attributes. Attributes provide additional information about elements. Attributes can be either mandatory or optional. An attribute consists of a name value pair.

Example :

```
 <a
href="demo.asp">
<PRODUCTNAME PRODID = "P001"> Barbie Doll
</PRODUCTNAME> <FONTsize = "12">
```

Here, the element PRODUCTNAME has an attribute called PRODID. The attribute name and the attribute value are specified within the opening tag of the PRODUCTNAME element.

9.7.6. Entities:

The entity can be described as a shortcut to a set of information. It is a name that is associated with a block of data. This data can be a chunk of text or a reference to an external file that contains textual or binary information. For. Ex.

```
<COMMENT>This is &ici; Nagpur, 2715085 </COMMENT>
```

When we open the document containing the preceding code in a browser, it displays the text "This is Indosoft Computer Institute Nagpur, 2715085". Therefore, the entity *id* acts as a short for "Indosoft Computer Institute".

Internal Entities: Some characters cannot be used in XML documents because they have a special meaning (reserved). For ex., we cannot use the "<" symbol in an XML document, as it is used as a delimiter for tags. XML provides some predefined entities are called internal entities. It consists of a name that is associated with a block of information. This can be identified easily as it is always preceded by an ampersand (&) symbol and terminated with a semicolon.

Internal Entity	Description
<	Used to display the less than (<) symbol
>	Used to display the greater than (>)
&	Used to display the ampersand (&)
"	Used to display the double quote (")

9.7.7. Comments:

</	End tag open delimiter
foo	Element name
>	Tag close delimiter
/>	Empty tag close delimiter

It should be remembered that whereas HTML simply relies on recognizing preprogrammed tags, XML is triggered by these specific parts of the element tags, and the XML processor's behaviour is directly controlled by the named symbols.

9.8.3 Element Markup

XML's element markup is composed of 3 parts : a start tag, the contents and the end tag. The start tag and end tag should be treated as wrappers.

For example <COLLEGE> Example: <bookstore>
 <book category="CHILDREN"> <title>Harry
 Potter</title> <author>J K. Rowling</author>
 <year>2005</year> <price>29.99</price> </book>
 <book category="WEB">
 <title>Learning XML</title>
 <author>Erik T. Ray</author>
 <year>2003</year>
 <price>39.95</price> </book>
 </bookstore>

In the example above, <bookstore> and <book> have element contents, because they contain other elements. <author> has text content because it contains text.

In the example above only <book> has an attribute (category="CHILDREN").

9.8.4 Attribute Markup:

Attributes are used to attach information to the information contained in an element. The general

form for using an attribute is:

<!element.name property= "value">

or <!element.name property = 'value'>

WORKING WITH DOCUMENT TYPE DEFINITION

DTD means Document Type Definition. These allow us to declare the data within the XML program and use it anywhere like Subroutine of any programming languages. These can be accessed from anywhere within the program and the control will return back to the next instruction, so we do not lose the continuity of the program. For example: <!DOCTYPE NEWSPAPER [

<!ELEMENT NEWSPAPER (ARTICLE+)>

```

<!ELEMENT ARTICLE (HEADLINE,BYLINE,LEAD,BODY,NOTES)>
<!ELEMENT HEADLINE (#PCDATA)>
<!ELEMENT BYLINE (#PCDATA)>
<!ELEMENT LEAD (#PCDATA)>
<!ELEMENT BODY (#PCDATA)>
<!ELEMENT NOTES (#PCDATA)>

```

```

<!ATTLIST ARTICLE AUTHOR CDATA
#REQUIRED> <!ATTLIST ARTICLE EDITOR
CDATA #IMPLIED> <!ATTLIST ARTICLE DATE
CDATA #IMPLIED> . <!ATTLIST ARTICLE
EDITION CDATA #IMPLIED>

```

```
]>
```

10.1 INTERNAL DTD DECLARATION

If the DTD is declared inside the XML file, it should be wrapped in a DOCTYPE definition with the following syntax:

```
<!DOCTYPE root-element [element-declarations]>
```

Example XML document with an internal DTD:

```

<?xmlversion="1.0"?>
<!DOCTYPE note [
<!ELEMENT note (to,from,heading,body)>
<!ELEMENT to (#PCDATA)>
<!ELEMENT from (#PCDATA)>
<!ELEMENT heading (#PCDATA)>
<!ELEMENT body (#PCDATA)>
]>
<note>
<to>Pravin</to>
<from>Girish K</from>
<heading>Reminder</heading>
<body>Don't forget me this weekend</body>
</note>

```

Open the XML file above in our browser (select "view source" or "view page source" to view the DTD) **The DTD above is interpreted like this:**

- * IDOCTYPE note defines that the root element of this document is **note**
- * !ELEMENT note defines that the note element contains four elements: "**to, from, heading, body**"
- * !ELEMENT to defines the to element to be of type "#PCDATA"
- * !ELEMENT from defines the from element to be of type "#PCDATA"
- * !ELEMENT heading defines the heading element to be of type "#PCDATA"
- * !ELEMENT body defines the body element to be of type "#PCDATA"

10.2 EXTERNAL DTD DECLARATION

If the DTD is declared in an external file, it should be wrapped in a DOCTYPE definition **with** the

following syntax:

```
<!DOCTYPE root-element SYSTEM "filenames
```

This is the same XML document as above, but with an external DTD (Open it, **and** select view source): `<?xml version="1.0"?> <!DOCTYPE note SYSTEM "note.dtd"> <note>`

```
<to>Pravin</to> <from>Girish K</from>
```

```
<heading>Reminder</heading> <body>Don't forget me this weekend!</body> </note> vnd this is the file "note.dtd"
```

which contains the DTD:

```
<!ELEMENT note (to,from,heading,body)>
```

```
dELEMENT to (#PCDATA)>
```

```
(ELEMENT from (#PCDATA)>
```

```
(ELEMENT heading (#PCDATA)> :!
```

```
ELEMENT body (#PCDATA)>
```

Why Use a DTD?

With a DTD, each of our XML files can carry a description of its own format.

With a DTD, independent groups of people can agree to use a standard DTD for interchanging data.

Our application can use a standard DTD to verify that the data you receive from the outside world is valid.

We can also use a DTD to verify our own data.

10.3 HTML and DTD

HTML is known to have a closed solution whereas XML is an open one. Both are used to publish documents on the Web.

HTML has a fixed set of elements and software can be highly optimized for it. XML on the other hand, is a flexible solution. It does not define elements but lets us, the developer, define the structure we need.

DTD is there to bridge the gap between the two. It is a formal description of the document. Software tools can read it and learn about the document structure. Some XML editors use DTDs to populate their lists as well as adopt default styling, based on the DTD.

10.4 BENEFITS OF DTD

1. The DTD can declare default or fixed values for attributes. This results in a smaller document.
2. The application accesses the document structure, such as to populate an element list.
3. The XML processor enforces the structure, as defined in the DTD.
4. The DTD gives hints to the XML processor - i.e., it helps separate indenting from content.

10.5 STRUCTURE OF DTD

There are two parts of DTD :

External DTD subset : This exists outside the content of the document, which is usually the case when a common DTD is used. **Internal DTD**

subset : This is included within the XML document.

A document can have one or both type of subsets. If we want to include an internal DTD subset in our document, we simply write it directly in the document type declaration. An external DTD subset, however, must be included via a DTD reference, which tells the processor where to find the external, subset by specifying the name of the DTD file.

10.6 DECLARATION OF VARIABLES IN DTD

DTD is a mechanism to describe the various variables like element, attributes, etc., which appear in the document.

A simple element declaration can be:

<!ELEMENT name-book (entry+)> where

name-book is the name of the element. The right hand side is called the content model and the left hand side as the element name.

10.6.1 Rules of Element Name :

Element names must follow certain rules. They must start with either a letter or a limited set of punctuation characters. The rest of the name can consist of the same characters plus letters, digits and new punctuation characters. Spaces are not allowed in names.

10.6.2 Occurrence Indicators:

Various signs such as plus sign (+), star (*) and question mark(?) characters in the element content are occurrence indicators. They indicate whether and how elements in the list can repeat.

- * An element followed by a plus sign (+) character must appear one or several times in the element being defined. The element can repeat.
- * An element followed by a star(*) character can appear zero or more times in the element being defined. The element is optional but, if it is included, it can repeat indefinitely.
- * An element followed by a (?) character can appear once or not at all in the element being defined. It indicates the element is optional and, if included, cannot repeat.
- * An element followed by no occurrence indicator must appear once and only once in the element being defined.

10.6.3 Connectors:

The comma (,) and vertical bar (|) characters are connectors. They separate the children in the content model; they indicate the order in which the children can appear. The connectors are :

- * The (|) character, which means that only one of the elements on the left or the right of the vertical bar must appear in the document.
- * The (,) character, which means both elements on the right and the left of the comma must appear in the same order in the document.

10.6.4 Attributes

These must be declared in the DTD. A typical example can be :

<!ATTLIST tel preferred (true | false) "false">

The various components in this declaration are the markup (<!ATTLIST), the element name (tel), the attribute name (preferred), the attribute type ((True|false)), a default value ("false"), and the right angle bracket.

Attributes are divided into 3 categories.

String Attributes : It can contain text

-

<!ATTLIST email href CDATA # REQUIRED>

Tokenized Attributes : It can have constraints on the content of the attribute.

<!ATTLIST entry id ID+IMPLIED>

Enumerated-type Attributes : It can accept one value in a list.

<!ATTLIST entry preferred (truefalse) "false:>

Attributes types can take any of the following values :

1. ID for identifies. An identifier is a name that is unique in the document.
2. IDREFS is a list of IDREF separated by spaces.
3. CDATA for string attributes
1. IDREF must be the value of an ID used elsewhere in the same document. IDREF is used to create links within a document.
4. ENTITY must be the name of an external entity.
5. ENTITIES is a list of ENTITY separated by spaces.
6. NMTOKEN is essentially a word without spaces.
7. NMTOKENS is a list of NMTOKEN separated by spaces.
2. Enumerated-type list is a closed list of NMTOKENS separated by spaces. Each value has to be one of the NMTOKENS. The list of tokens can further be limited to NOTATIONS.

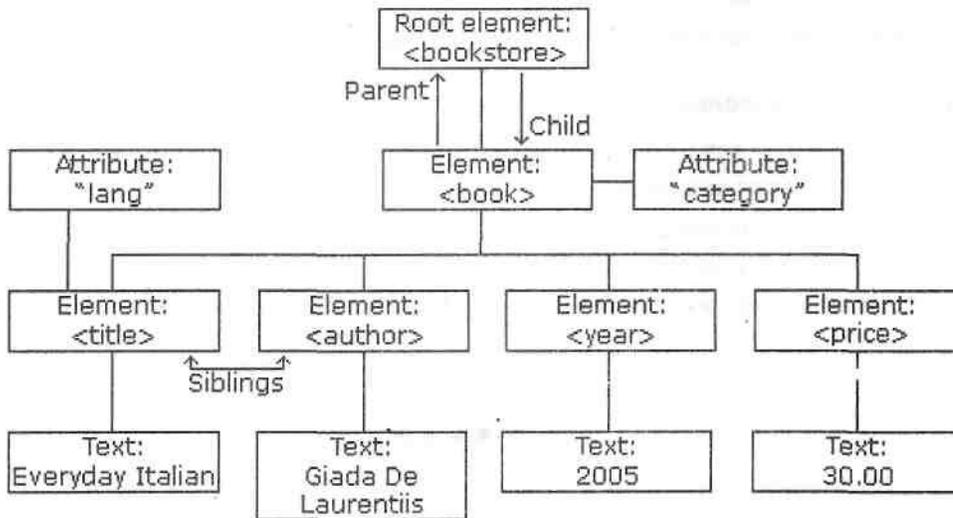
DTD can specify a default value for the attribute. If the document does not include the attribute, it is assumed to have the following 4 default value.

- * #REQUIRED means that a value must be provided in the document.
- * #IMPLIED means that if no value is provided, the application must use its own default.
- * #FIXED followed by a value means that attribute value must be the value declared in the DTD.
- A literal value means that the attribute will take this value if no value is given in the document.

XML has many types of entities, classified according to 3 criteria; general or parameter entities,

internal or external entities, and parsed or unparsed entities.

Example XML Document:



E-C

CSS enforce standards and uniformity throughout a web site and provide numerous attribja create a *dynamic effects*. With Style Sheets, text and image formatting properties (including size, weight, margins, indent, paragraphs, background, graphics, etc) can be predefined in a single list. HTML elements on a web page can then be bound to the style sheet.

8.2.1 Advantages of CSS :

1. Improved Search Engine Results : With use of CSS, we can keep our HTML code much cleaner. We are also free to put any content anywhere in our document with CSS. This will aid the search engine crawlers to identify the important content first.
2. Sites Load Faster: As the style sheets are lighter, it will enable the websites to load faster. Since table layouts are no longer required in CSS, the sites take up less memory and load faster. The users will find it easier to view a site designed using CSS as it will load in a fast pace and can be swiftly navigated from one page to other.
3. Design Separated from Content: A web designer has more control over a website with CSS as a style sheet can be linked to all our web documents. For a slight modification, what we have to do is edit a single file, just the style sheet. Information related to layout, positioning, style, font and color are all put in a style sheet for the entire site.
4. Displayed on Various Media: A web designer has great flexibility in presenting the content. Different style sheets can be used for different media without even the

user knowing it. Style sheets can be made for different media like the printer and PDA.

5. **Compatibility with Browsers :** Adhering to the web standards set by W3C, a designer is making it obvious that the content of a site is validated in all browsers. But with the introduction of a new browsers, it is not possible to test a website for all probable browsers. But if the coding is done following to a standard, a major part of the job is already done.
6. **Making changes to the layout:** CSS makes it very easy to change the style of a document.
7. **Consistency:** Layout and position of navigation can be completely consistent across a site.
8. **Easy maintenance :** To change the style of an element, we need to edit in only one place.
9. **Superior styles to HTML:** CSS has a much wider array of attributes than HTML.

8.2.2 Disadvantages of CSS :

1. CSS does not work consistently in different browsers. Microsoft Internet Explorer and Opera support CSS in a pretty logical way.
2. CSS doesn't work at all in very early versions of Internet Explorer and Netscape. These browsers will display webpage as plain html.
 3. Netscape and Firefox conform more closely to the standards, so a site could look quite different on Internet Explorer from the way it looks in Firefox.