

# **MCA 306 – INTERNET FUNDAMENTALS**

## **(Open Elective)**

**Unit I:** Fundamentals of Electronic Mail, Jump Start: Browsing and Publishing

**Unit II:** The Internet, The World Wide Web, Searching the World Wide Web

**Unit III:** Telnet and FTP, Basic HTML, Web Graphics

**Unit IV:** Advanced HTML, Newsgroups and Mailing Lists, Chat Rooms, and MUDs

**Unit V:** Electronic Publishing, Web Programming Material

Textbook

- 1. Fundamentals of the Internet & The World Wide Web by Raymond Greenlaw**

## UNIT-I

### ➤ FUNDAMENTALS OF ELECTRONIC MAIL

#### **E-mail (electronic mail or email)**

E-mail (electronic mail) is the exchange of computer-stored messages by telecommunication. (Some publications spell it *email*; we prefer the currently more established spelling of e-mail.) E-mail messages are usually encoded in ASCII text. However, you can also send non-text files, such as graphic images and sound files, as attachments sent in binary streams. E-mail was one of the first uses of the Internet and is still the most popular use. A large percentage of the total traffic over the Internet is e-mail. E-mail can also be exchanged between online service provider users and in networks other than the Internet, both public and private

**Electronic mail**, or **email**, is a method of exchanging digital messages between people using digital devices such as computers, tablets and mobile phones. Email first entered substantial use in the 1960s and by the mid-1970s had taken the form now recognized as email. Email operates across computer networks, which in the 2010s is primarily the Internet. Some early email systems required the author and the recipient to both be online at the same time, in common with instant messaging. Today's email systems are based on a store-and-forward model. Email servers accept, forward, deliver, and store messages. Neither the users nor their computers are required to be online simultaneously; they need to connect only briefly, typically to a mail server or a webmail interface, for as long as it takes to send or receive messages.

#### **user name**

The user name, or username, by which a person is identified to a computer system or network. A user commonly must enter both a user ID and a password as an authentication mechanism during the logon process. If the system or network is connected to the Internet, the username typically is the leftmost portion of the e-mail address, which is the portion preceding the @ sign. In the e-mail address ray@contextcorporation.com, for example, ray is the username. User ID is synonymous with username

#### **Password**

A password is an unspaced sequence of characters used to determine that a computer user requesting access to a computer system is really that particular user. Typically, users of a multi-user or securely protected single-user system claim a unique name (called a *user ID*) that can be generally known. In order to verify that someone entering that user ID really is that person, a second identification, the password, known only to that person and to the system itself, is entered by the user. Most networks require that end users change their passwords on a periodic basis.

#### **EMAIL ADDRESS**

The general format of an **email address** is local-part@domain, and a specific example is jsmith@example.com. An **address** consists of two parts. The part before the @ symbol (local-part) identifies the name of a mailbox. This is often the username of the recipient, e.g., jsmith.

An **email address** identifies an email box to which email messages are delivered. A wide variety of formats were used in early email systems, but only a single format is used today, following the standards developed for Internet mail systems since the 1980s.

An email address such as John.Smith@example.com is made up of a local-part, an @ symbol, then a case-insensitive domain. Although the standard specifies the local part to be case-sensitive, in practice the mail system at *example.com* may treat *John.Smith* as equivalent to *JohnSmith* or even as *johnsmith*, and mail systems often limit their users' choice of name to a subset of the technically valid characters. In some cases they also limit which addresses it is possible to send mail to.



## Parts of an email message

An email message consists of the following general components:

### Headers

The message headers contain information concerning the sender and recipients. The exact content of mail headers can vary depending on the email system that generated the message. Generally, headers contain the following information:

- **Subject.** Subject is a description of the topic of the message and displays in most email systems that list email messages individually. A subject line could be something like "2010 company mission statement" or, if your spam filtering application is too lenient, "Lose weight fast!!! Ask me how."
- **Sender (From).** This is the sender's Internet email address. It is usually presumed to be the same as the Reply-to address, unless a different one is provided.
- **Date and time received (On).** The date and time the message was received.
- **Reply-to.** This is the Internet email address that will become the recipient of your reply if you click the Reply button.
- **Recipient (To:).** First/last name of email recipient, as configured by the sender.
- **Recipient email address.** The Internet mail address of the recipient, or where the message was actually sent.
- **Attachments.** Files that are attached to the message.

### Body

The body of a message contains text that is the actual content, such as "Employees who are eligible for the new health care program should contact their supervisors by next Friday if they want to switch." The message body also may include signatures or automatically generated text that is inserted by the sender's email system.

### Mailer FEATURES:

a company that sends direct mail. A mailer often employs a list broker to assist with buying mailing lists and a service bureau to assist with the list processing necessary to conduct their direct marketing campaigns. The term mailer is sometimes used to refer to a marketer sending email or other direct communication

**Mailer** may refer to:

- Mass mailer, a computer worm that spreads itself via e-mail
- Mailer (occupation), an individual employed to handle newspapers from the press to the truck.

### Working of E-mail

**Email working** follows the client server approach. In this client is the mailer i.e. the **mail** application or **mail** program and server is a device that manages **emails**.

... The message is routed to Simple **Mail** Transfer Protocol to person B's **mail** server.

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Following example will take you through the basic steps involved in sending and receiving emails and will give you a better understanding of working of email system:

- Suppose person A wants to send an email message to person B.
- Person A composes the messages using a mailer program i.e. mail client and then select Send option.
- The message is routed to **Simple Mail Transfer Protocol** to person B's mail server.
- The mail server stores the email message on disk in an area designated for person B.

## **Email management**

**Email management** is a specific field of communications **management** for managing high volumes of inbound electronic **mail** received by organizations. ...

Customer service call centers currently employ **email** response **management** agents along with telephone support agents, and typically use software solutions to **manage emails**. **Email management** is a specific field of communications management for managing high volumes of inbound electronic mail received by organizations. Today, email management is an essential component of customer service management. Customer service call centers currently employ email response management agents along with telephone support agents, and typically use software solutions to manage emails

## **Userid and Password**

A computer system uses userids and passwords together to grant access to the system. You need the correct combination of userid and password, to access your account.

### **Userid**

The userid identifies you to the computer. Userids are typically some form of your name. (Your last name, for example). A userid must be unique throughout the computer system. This allows the computer to distinguish between you and some other person. One confusing issue is that different systems refer to a userid (the thing that identifies you to the computer) with different names. Some that you may run across are:

LoginID Username Userid

But, they all refer to that special name that identifies you to that particular computer system.

Your userid is also used for communication with other people through electronic mail. Since the userid identifies you to the computer, it is natural for it to be used to identify you to other computer systems. For example: The person Joe B. User could have this userid, "jbu3470". The userid is made up of the person's initials and the digits of some personal identification number.

### **Password**

To prevent other people from using your account via your userid, you are required to have a password. A password allows you and only you to access the computer system through your userid. It basically proves to the computer system that you are who you say you are. So it should be obvious that you **DO NOT GIVE YOUR PASSWORD TO ANYONE!!!**

### **User ID and Password Rules**

Please review the User ID and Password guidelines below before selecting a User ID or selecting or changing your Password.

#### **User ID:**

User IDs must be 7-14 characters

User IDs must contain at least one letter; numbers are allowed, but not required User IDs cannot contain spaces

User IDs cannot contain your Social Security Number, Tax Identification Number, or Customer Access Number

No special characters are allowed, such as: ! @ # \$ % ^ & Use of an underscore is allowed but not required: \_

Do not use your Password as your User ID

#### **Password:**

Passwords must be 7-14 characters

Passwords must include at least one letter and one number Passwords cannot contain spaces

Semicolons cannot be part of a Password Passwords are case-Sensitive

Do not use your User ID as your Password

If you forget your User ID or Password, you can retrieve them through the "User ID & Password Help" link.

**Note:** You cannot change your User ID once it is established.

### **What to do with a message**

There are many operations that can be performed on emails:

- New, Compose, Write: Write a new message
- Erase, Delete, Remove: Erase a message
- Store, Save, Backup, Drafts: Copy a message into a safer place
- Print: Print a message
- Reply: Send a reply message to the sender (sometimes including their own message in the body of the document, with each line preceded by the symbol ">" and "Re:" followed by their chosen subject as the title, to show that it is a reply. The Reply All button makes it possible to send a reply to the sender as well as everyone else who had been put as a recipient or on copy.
- Forward: Forwards the message to someone else, letting them know that the message comes from you. The subject is generally preceded by Fwd: to indicate that it is a forwarded message.
- Redirect, Transmit: Forward a message to someone, letting them know where it originally came from. The subject is generally preceded by Fwd: to indicate that it is a forwarded message.

### **Email addresses**

Electronic mail must be addressed properly, in much the same way as a normal letter needs to be addressed, in order that it can reach its intended recipient. However, with electronic mail the addressing has to be slightly different and must be more precise than a conventional mail address.

Most email uses is addressed using internet addresses. These are supported by what is known as the Domain Name Server (DNS). This is an internationally distributed naming scheme and the components of each address are structured in a hierarchical manner. These start with the mailname of the person, followed by various address components, ending with the "Top level" domain (often a country code). In this respect, the addressing is in the same order as that of a conventional letter.

Email addresses (both for senders and recipients) are two strings separated by the character "@" (the "at sign"): user@domain

The right-hand part describes the domain name involved, and the left-hand part refers to the user who belongs to that domain. One or more mail servers correspond to each domain.

An email address can be up to 255 characters long and can include the following characters:

- Lowercase letters from a to z;
- Digits
- The characters ".", "\_" and "-" (full stop, underscore, and hyphen) In practice, an email address often looks something like this: firstname.lastname@provider.domain

For example E.V.Nebor@bham.ac.uk

The mailname comes first, indicating who the email is for. The "@" sign separates the mail name from the site. The next components indicate details of the system to which the email is sent.

bham=Birmingham rmingham ac = academic

uk = Great Britain

The final component ("top level" domain) is normally the ISO3166 standard two letter

country code. There are, however, two main types of exception. One is Great Britain (gb) which uses "uk". The other exceptions are mainly some of American domains (eg edu, mil, gov). These are at the same "level" in the naming scheme as countries.

Addresses of this form are also known as rfc822 addresses, because that is the name of the Internet standard in which the addresses were originally described.

### **Partially qualified addresses**

Some systems will allow the address to be specified in an incomplete form. For example, Nebor@bham.ac.uk could be expressed as E.V.Nebor@bham

This is known as a partially qualified address. The use of these names is NOT RECOMMENDED, as they are not universally recognized and are a cause of many errors and much confusion. The full address should always be used.

### **Message Components**

#### **Header**

The header of an e-mail address is where all the important addressing information is kept, along with data about the message itself. The following table describes the elements that make up the header of an e-mail.

|                |                                                                                                                                                                                                                                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>To</b>      | The <b>TO</b> Field is where the email address of the messages recipient is entered.                                                                                                                                                                                                                                                                          |
| <b>Subject</b> | The <b>subject</b> is essentially a title, or a very short summary, of an e-mail. Ideally it should contain some sort of reference to the emails content                                                                                                                                                                                                      |
| <b>CC</b>      | To <b>Carbon Copy (CC)</b> a message to someone is to send them a copy of the e-mail, even though they are not the e-mail's intended recipient. This is a common practice in business communications, where many people in an organization often need to be made aware of certain communications, even if they are not actively involved in the conversation. |
| <b>BCC</b>     | <b>BCC stands for Blind Carbon Copy.</b> Any people included in the BCC recipient list of an e-mail receive a copy of the message, but their name is not included in the message headers, and no one else who received the message knows that they were sent a copy.                                                                                          |

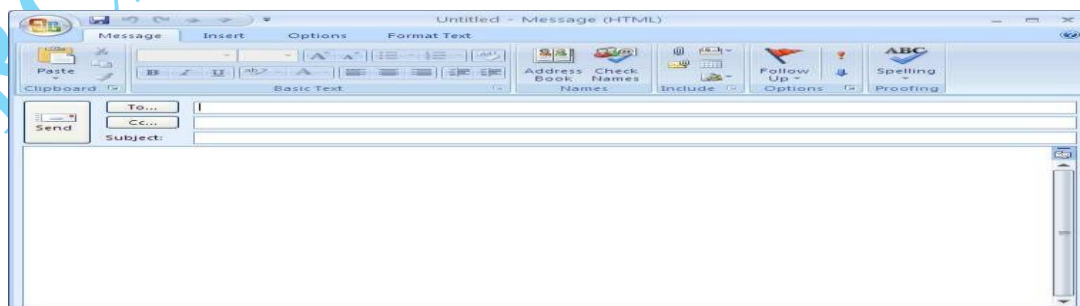
#### **Body**

The body of the message is, of course, the most important part. Everything you need to say is entered here, and this is what the recipient will be reading.

### **Message Composition**

Steps are:

- Launching your e-mail program is usually as simple as clicking on the **e-mail icon** on your desktop. Once the program is open, write a message by clicking on the **Compose Mail, New Message** or similar button.



- In the new message window, type the **e-mail addresses of the recipients** in the **To** field, or use the **Address book** to select one or more of the addresses.
- In the **CC** field, enter the address of anyone you want to receive a copy of the message. Type the e-mail address or choose it from the address book.
- Type the **subject** of the message.
- Now type your message.
- Finally, click on the **Send** button.

A **File** button has the following functionality:

- **Save** – Save the current message into a file on disk.
- **Insert** – Include a file in the body of the message being composed.
- **Exit** – Leave the mailer.
- **Open** – Open a file from the disk.
- **Attach** – Append a file to a message. A **Reply** button consists of following items:
- To sender.
- To all
- Forward
- Include
- Include bracketed.

### E-mail Inner Working

If we split the mailing of a letter into three phases:

- In phase one, the steps needed to perform are compose, address, package, stamp and deposit the letter in a suitable place for pick up.
- In phase two, a mail person, on a fixed schedule, retrieves the letter from its place of deposit. Then the letter, if correctly addressed and with the proper postage, is routed to its final destination mailbox.
- In phase three, the recipient check for mail, retrieves the letter from the mailbox, opens the envelope, reads the mail, and perhaps files it away.

Similar phases need to be carried out in the electronic setting:

- Mailer, Mail Server, and Mailbox – Three mail components are necessary for the email system to work.
- Mailers A mailer is also called a *mail program*, *mail application*, or *mail client*. A mailer is the software that allows you to manage, read, and compose email.
- Mail Servers The mail server is a computer whose function is to receive, store and deliver email.
- Mailboxes An electronic mailbox is a disk file specifically formatted to hold email messages and information about them.

There are several different ways in which users typically obtain their emails.

- Store and Forward Features
- Central Mail Spool and IMAP
- Bounce Feature

### E-mail Management

Email is now the de facto standard for business communication across organizations at this time. Recent research shows the extensive use of emails in business and its projected growth in the future presents major information management challenges and risks for many organizations. Just as any type of business information and record, email must be included as part of, and adhered to the organizational standards addressing information and records:

- Capture
- Classification
- Storage
- Preservation
- Management
- Destruction

The vast quantities of emails held in inboxes, sent folders, and deleted item folders put the organization at risk and adversely impact the performance of email servers in the organizations. Email servers were never designed to act as repositories for such great quantities of emails and move control of this information away from the organization. Without the management of emails, it is difficult for organizations to meet their legal preservation requirements in the event of litigation and government investigations, increasing the effort and cost in responding to e- discovery and disclosure.

Email management systems centrally capture emails created and received by employees. Using a classification scheme to manage this content, retention periods and access controls can be applied to manage emails. Metadata associated with the emails can be captured to allow this information to be managed and retrieved. Email active archiving is one of the most common applications for email management. At their most basic, these solutions either copy or remove messages from the messaging application and store it at another location. Some approaches copy all messages coming into and out of the messaging application in real time, while others will physically remove the messages from the message store. In some of these solutions, the messages are not archived, but attachments are and are replaced with either a stub or an outright link within the message.

Here are four simple email management rules to help you keep control of your inbox:

- **Let your email program manage your email as much as possible.**

Email management starts with setting up and using filters. If you're using an email program such as Outlook, you can configure email rules to send your spam directly to the trash - meaning that you don't waste your time reading and deleting it.

- **Do not check your email on demand.**

You don't need to see every piece of email the second it arrives. If you're using an email program that announces the arrival of new email, turn off the program's announcement features, such as making a sound or having a pop-up screen announce the arrival of email. Checking email on demand can seriously interfere with whatever other tasks you're trying to accomplish because most people will read email when they check it.

- **Don't read and answer your email all day long.**

You may get anywhere from a handful to hundreds of emails each day that need to be answered, but they don't need to be answered immediately, interrupting whatever else you're doing. Instead, set aside a particular time each day to review and answer your email. Schedule the hour or whatever time it takes you to answer the volume of email you get, and stick to that schedule as regularly as possible.

- **Don't answer your email at your most productive time of day.**

For me, (and for many others, I suspect), my most productive work time is the morning. If I start my work day by answering my email, I lose the time that I'm at my most creative. If I'm writing a piece, for instance, it takes me twice as long to compose it in the afternoon or evening than it would in the morning, when I feel fresh and alert.

Answering email, on the other hand, isn't usually a task that calls for a great deal of creativity. So by ignoring my email until the late afternoon, and answering it then, I get the dual benefit of saving my most productive time for other more demanding tasks, and not continual-



ly interrupting whatever other tasks I'm trying to accomplish.

**MIME (Multipurpose Internet Mail Extensions)** MIME is a standard which was proposed by Bell Communications in 1991 in order to expand upon the limited capabilities of email, and in particular to allow documents (such as images, sound, and text) to be inserted in a message. It was originally defined by RFCs 1341 and 1342 in June 1992.

Using headers, MIME describes the type of message content and the encoding used. MIME adds the following features to email service:

- Be able to send multiple attachments with a single message;
- Unlimited message length;
- Use of character sets other than ASCII code;
- Use of rich text (layouts, fonts, colours, etc)
- Binary attachments (executables, images, audio or video files, etc.), which may be divided if needed.
- MIME uses special header directives to describe the format used in a message body, so that the email client can interpret it correctly.
- Common **MIME Types** are listed in the table below:

### ➤ **JUMP START: BROWSING AND PUBLISHING**

#### **Coast-to-Coast Surfing**

The Web provides a means of accessing an enormous collection of information, including text, graphics, audio, video, movies, and so on. One of the most exciting aspects of the Web is that information can be accessed in a nonlinear and experimental fashion. Unlike reading a book by flipping to the next page in sequential order, you can “jump” from one topic to another via hyperlinks. This nonlinear approach to information gathering, or browsing is sometimes referred to as “coast-to-coast surfing”.

#### **Web Page Installation**

In order to view web pages, one needs to install them on the Web Server. A Web Server is a program, located on a computer with internet access that responds to a browser's request for a URL.

#### **Basic Principles**

Basic principles for web page installation are:

- You need to have Web pages to publish.
- A Web Server where the files must be placed must be available to you.
- The permissions on the files need to be set so that any user anywhere can read them.
- When someone requests your web page, the server has to deliver it.

#### **Web Page Setup**

Web pages are created with the help of HTML (Hyper Text Markup Language). The pages are set up with the help of the tags available in HTML. Some of them are:

- **Head tag** The <HEAD> tag has no attributes. Several other tags can be included inside it.
- **Basefont tag** The <BASEFONT> tag defines the font size to be used in the HTML document and may be included in the head of the document.
- **Base tag** The <BASE> tag is useful for setting some global parameters of an HTML document and may be included in the head of the document. A global parameter is an attribute that has an effect on the entire document.
- **Meta tag** etc. The <META> tag is used to include additional information about a document and can be used to pass additional information to a browser. There is no ending for a <META> tag and a document can have multiple <META> tags.

## UNIT-II

### ➤ INTERNET

The Internet is a global system of interconnected governmental, academic, corporate, public, and private computer networks. It is based on the networking technologies of the Internet Protocol Suite.

The Internet is a worldwide collection of computer networks, cooperating with each other to exchange data using a common software standard. Through telephone wires and satellite links, Internet users can share information in a variety of forms. The size, scope and design of the Internet allow users to:

- connect easily through ordinary personal computers and local phone numbers;
- exchange electronic mail (E-mail) with friends and colleagues with accounts on the Internet;
- post information for others to access, and update it frequently;
- access multimedia information that includes sound, photographic images and even video; and
- Access diverse perspectives from around the world.

An additional attribute of the Internet is that it lacks a central authority—in other words; there is no "Internet, Inc." that controls the Internet. Beyond the various governing boards that work to establish policies and standards, the Internet is bound by few rules and answers to no single organization.

Many people think that the Internet is a recent innovation, when in fact the essence of it has been around for over a quarter century. The Internet began as ARPAnet, a U.S. Department of Defense project to create a nationwide computer network that would continue to function even if a large portion of it were destroyed in a nuclear war or natural disaster.

During the next two decades, the network that evolved was used primarily by academic institutions, scientists and the government for research and communications. The appeal of the Internet to these bodies was obvious, as it allowed disparate institutions to connect to each others' computing systems and databases, as well as share data via E-mail.

The nature of the Internet changed abruptly in 1992, when the U.S. government began pulling out of network management, and commercial entities offered Internet access to the general public for the first time. This change in focus marked the beginning of the Internet's astonishing expansion. The Internet is also the communications backbone underlying the World Wide Web (WWW).

### Working of the Internet

#### • Where to Begin? Internet Addresses

Because the Internet is a global network of computers each computer connected to the Internet must have a unique address. Internet addresses are in the form nnn.nnn.nnn.nnn where nnn must be a number from 0 - 255. This address is known as an IP address. (IP stands for Internet Protocol)

The picture below illustrates two computers connected to the Internet; your computer with IP address 1.2.3.4 and another computer with IP address 5.6.7.8.

If you connect to the Internet through an Internet Service Provider (ISP), you are usually assigned a temporary IP address for the duration of your dial-in session. If you connect to the Internet from a local area network (LAN) your computer might have a permanent IP address or it might obtain a temporary one from a DHCP (Dynamic Host Configuration Protocol) server. In any case, if you are connected to the Internet, your computer has a unique IP address.



- **Protocol Stacks and Packets**

So your computer is connected to the Internet and has a unique address. How does it 'talk' to other computers connected to the Internet? An example should serve here: Let's say your IP address is 1.2.3.4 and you want to send a message to the computer 5.6.7.8. The message you want to send is "Hello computer 5.6.7.8!". Obviously, the message must be transmitted over whatever kind of wire connects your computer to the Internet. Let's say you've dialed into your ISP from home and the message must be transmitted over the phone line. Therefore the message must be translated from alphabetic text into electronic signals, transmitted over the Internet, and then translated back into alphabetic text. How is this accomplished? Through the use of a **protocol stack**. Every computer needs one to communicate on the Internet and it is usually built into the computer's operating system (i.e. Windows, UNIX, etc.). The protocol stack used on the Internet is referred to as the TCP/IP protocol stack because of the two major communication protocols used. The TCP/IP stack looks like this:

| Protocol Layer                      | Comments                                                                                                           |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Application Protocols Layer         | Protocols specific to applications such as WWW, e-mail, FTP, etc.                                                  |
| Transmission Control Protocol Layer | TCP directs packets to a specific application on a computer using a port number.                                   |
| Internet Protocol Layer             | IP directs packets to a specific computer using an IP address.                                                     |
| Hardware Layer                      | Converts binary packet data to network signals and back. (E.g. ethernet network card, modem for phone lines, etc.) |

If we were to follow the path that the message "Hello computer 5.6.7.8!" took from our computer to the computer with IP address 5.6.7.8, it would happen something like this:

- The message would start at the top of the protocol stack on your computer and work its way downward.
- If the message to be sent is long, each stack layer that the message passes through may break the message up into smaller chunks of data. This is because data sent over the Internet (and most computer networks) are sent in manageable chunks. On the Internet, these chunks of data are known as packets.
- The packets would go through the Application Layer and continue to the TCP layer. Each packet is assigned a port number. We need to know which program on the destination computer needs to receive the message because it will be listening on a specific port.
- After going through the TCP layer, the packets proceed to the IP layer. This is where each packet receives its destination address, 5.6.7.8.
- Now that our message packets have a port number and an IP address, they are ready to be sent over the Internet. The hardware layer takes care of turning our packets containing the alphabetic text of our message into electronic signals and transmitting them over the phone line.
- On the other end of the phone line your ISP has a direct connection to the Internet. The ISP's router examines the destination address in each packet and determines where to send it. Often, the packet's next stop is another router.
- Eventually, the packets reach computer 5.6.7.8. Here, the packets start at the bottom of the destination computer's TCP/IP stack and work upwards.
- As the packets go upwards through the stack, all routing data that the sending computer's stack added (such as IP address and port number) is stripped from the packets.
- When the data reaches the top of the stack, the packets have been re-assembled into their original form, "Hello computer 5.6.7.8!"

## Internet Congestion

Internet congestion occurs when a large volume of data is being routed on low bandwidth lines or across networks that have high latency and cannot handle large volumes. The result is slowing down of packet movement, packet loss and drop in service quality.

**Congestion Collapse** is the situation in which the congestion becomes so great that throughput drops to a low level and thus little useful communication occurs.

Various techniques have been developed in attempt to minimize congestion collapse in communication networks. In addition to increasing capacity and data compression, they include protocols for informing transmitting devices about the current levels of network congestion and having them reroute or delay their transmissions according to congestion levels.

**Congestion Control** The processes that are used to reduce congestion in a network. This includes making decisions such as: deciding when to accept new Traffic, when to delete packets and when to adjust the routing policies used in the network.

## Internet Culture

The Internet offers the hope of a more democratic society. By promoting a decentralized form of social mobilization, it is said, the Internet can help us to renovate our institutions and liberate ourselves from our authoritarian legacies. The Internet does indeed hold these possibilities, but they are hardly inevitable. In order for the Internet to become a tool for social progress, not a tool of oppression or another centralized broadcast medium or simply a waste of money, concerned citizens must understand the different ways in which the Internet can become embedded in larger social processes.

In thinking about culturally appropriate ways of using technologies like the Internet, the best starting-point is with people -- coherent communities of people and the ways they think together.

Let us consider an example. A photocopier company asked an anthropologist named Julian Orr to study its repair technicians and recommend the best ways to use technology in supporting their work. Orr took a broad view of the technicians' lives, learning some of their skills and following them around. Each morning the technicians would come to work, pick up their company vehicles, and drive to customers' premises where photocopiers needed fixing; each evening they would return to the company, go to a bar together, and drink beer. Although the company had provided the technicians with formal training, Orr discovered that they actually acquired much of their expertise informally while drinking beer together. Having spent the day contending with difficult repair problems, they would entertain one another with "war stories", and these stories often helped them with future repairs. He suggested, therefore, that the technicians be given radio equipment so that they could remain in contact all day, telling stories and helping each other with their repair tasks.

As Orr's story suggests, people think together best when they have something important in common. Networking technologies can often be used to create a space for "communities of practice", like the photocopier technicians, to think together in their own ways. This is perhaps the most common use of the Internet: discussion groups organized by people who wish to pool their information and ideas about a topic of shared interest. At the same time, we should not consider the Internet in isolation. Regardless of whether they are located in the same geographic region or distributed around the world, a community's members will typically think together using several media, such as the telephone, electronic mail, printed publications, and face-to-face meetings, and the Internet is best conceived as simply one component of this larger ecology of media.

Social networks also influence the adoption of new technologies: if the members of a community already have social connections to one another than they are more likely to benefit from technological connections. Every culture has its own distinctive practices for creating and maintaining social networks, and a society will be healthier in political and economic terms when

these practices are functioning well.

Authoritarian societies will attempt to suppress the cultural practices of networking, and democratic societies will promote them. Broad implementation of the Internet is one way to promote social networking, and the existing practices of networking can offer clues to the most effective ways of implementing the Internet.

## **Business Culture on Internet**

Today's business environment is influenced greatly by market, economical, societal and technological factors creating a lot of competition. Also these factors are unpredictable that they may change unexpectedly at any time. Such changes in the business world have been defined as **business pressure**.

The various environmental business pressures on companies today can be grouped into three categories:

- **Market**
- **Societal**
- **Technological**

Strength of Internet business over traditional business can be made more clear by the comparison of both. Online purchasing and selling through e-business offers opportunities and advantages to the companies of all sizes engaged in different portfolios. Some of these advantages are:

- Sampling of products such as books, recorded lectures, and music cassettes is possible on Web for business promotion.
- Business houses selling their goods through catalogues can reach additional global customers at lower cost.
- For items subjected to frequent changes e.g. shares and bonds etc. . the changes in rates/quotations can be known instantly.
- Customer's knowledge can be enhanced on topics such as news about local event, market research, industrial report, software etc., which can be distributed easily over the Internet.
- A closer relationship can be developed amongst business sellers whose customer base is on the Internet.

## **Collaborative Computing and the Internet**

Collaborative computing is a term describing a variety of activities where people interact with one another using desktops, laptops, palmtops, and sophisticated digital cellular phones. As computers are best at handling data and representing information, person-to-person communication is enriched by an ability to share, modify, or collaboratively create data and information.

We believe collaborative computing is the future of the Internet. The Internet will evolve from its current role as a channel for information dissemination to a person-to-person communication medium. Some examples are listed below:

- Videoconferencing applications allow users to collaborate over local networks, private WANs, or over the Internet.
- Internet collaboration tools provide virtual meetings, group discussions, chat rooms, whiteboards, document exchange, workflow routing and many other features.
- Multicasting is an enabling technology for groupware and collaborative work on the Internet that reduces bandwidth requirements.
- Instant messaging is like e-mail that happens in real time.
- Workflow management is about coordinating the flow of documents (invoices, reports, legal documents etc.) within an organization from one person to another.

A good example of collaborative applications designed for Internet use are Microsoft's NetShow and NetMeeting.

## Modes of Connecting to Internet

There are four ways of connecting a client computer to the Internet: a dial-up connection using a telephone line or an Integrated Services Digital Network (ISDN), a Digital Subscriber Line (DSL), a cable TV connection and a satellite connection.

### Dial-up Connection/Telephone Line Internet Connectivity

A dial-up connection uses the analog telephone line for establishing a temporary communication. Computer's digital signals must be converted to analog signals before they are transmitted over standard telephone lines. This conversion is performed by a modem, a device that modulates (changes into an analog signal) and demodulates (converts an analog signal into a digital signal). Both the sending and receiving ends of a communication channel must have a modem for data transmission to occur. Using a dial-up line to transmit data is similar to using the telephone to make a call. The client computer modem dials the preprogrammed phone number for a user's Internet Service Provider (ISP) and connects to one of the ISP's modems. After the ISP has verified the user's account, a connection is established and data can be transmitted. When either modem hangs up, the communication ends. The **advantage** of a dial-up line is that it costs no more than a local telephone call. Computers at any two locations can establish a connection using modems and a telephone network, to include wireless modems and cellular telephone connections. The **limitation** of a connection using the ordinary telephone line is a low speed, 28 kbps. There are dedicated telephone lines that can transmit data at 56 kbps. Most 56 kbps modems connect at a speed less than 46 kbps because of the limitations of analog phone lines and telephone-company switches.

### ISDN

ISDNs are special digital telephone lines that can be used to dial into the Internet at speeds ranging from 64 to 128 kbps. These types of connections are not available everywhere telephone companies have to install special ISDN digital switching equipment. ISDNs require use of a special "digital modem" that sends and receives digital signals over ISDN lines. With an ISDN, the telephone line is divided into three channels (BRI - Basic Rate Interface), two-64 kbps B (bearer) channels that send data and one 16 kbps D (data) channel that sends routing information. This type of access is commonly referred to as 2B+D. To use the ISDN access to the Internet, an ISP has to offer the ISDN access. ISDN lines cost more than normal phone lines, so the telephone rates are usually higher.

### Cable TV Connection

Currently most households with cable TV have the option for cable modem Internet access. The cable modem offers a high-speed link at low cost for unlimited, "always connected" access. The connection speeds range from 128 kbps up to 10 mbps (megabits per second). A cable modem is a device that connects to the existing TV cable feed and to an Ethernet network card in the user's PC (also called an NIC - Network Interface Card). The cable network is designed to support the highest speeds in the "downstream" direction, which is from the Internet to the client computer. This downstream speed affects the performance of downloading Web pages and software. The "upstream" bandwidth for data sent from a user's computer to the Internet is typically less, in the range of 200 kbps to 2 mbps. The benefit of the cable modem for Internet access is that, unlike DSL, its performance doesn't depend on distance from the central cable office. However, with the cable TV network, the computer is put on a Local Area Network (LAN) with other users in the neighborhood and like with any LAN, the performance degrades as usage increases. A more disturbing issue is that of network security. One of the main purposes of a LAN is to allow file sharing among the computers on the LAN. This LAN feature doesn't work well with cable Internet access, as most users do not want neighbors accessing their files. Turning the sharing option off can prevent file sharing. Also, installing the firewall hardware or software may protect from hackers.

## **DSL (Digital Subscriber Line)**

DSL service is a high-speed data service that works over POTS (Plain Old Telephone Service) copper telephone lines and is typically offered by telephone companies without costly installation of a higher-grade cable. DSL uses a different part of the frequency spectrum than analog voice signals, so it can work in conjunction with a standard analog telephone service, providing separate voice and data "channels" on the same line. ADSL (Asymmetric DSL) is the type of DSL that provides different bandwidths in the upstream and downstream directions, giving the user a much bigger "pipe" in the downstream direction. ADSL can support downstream bandwidths of up to 8 mbps and upstream bandwidths of 1.5 mbps. For comparison, a T-1 connection also provides 1.5 mbps. This scheme works well for the typical Internet user; upstream communication is usually small (link requests) compared to downstream communication (Web pages with graphics).

**SDSL (Symmetric DSL)** offers the same bandwidth capability in both directions. Besides higher bandwidth, some of the advantages of ADSL access from telephone companies are that there are no per-minute charges and the user gets an "always-on" connection for a monthly fee. Most modern computers can be easily equipped to connect to a DSL service. This is accomplished by connecting an ADSL modem to an Ethernet network card in the PC. The downside of DSL includes strict distance limitation that DSL circuits can operate within. As the connection's length increases, the signal quality decreases and the connection speed goes down. DSL services that provide greater than 1.5 mbps require shorter distances to the central office compared to a cable modem that can be located far away from the service provider.

The limit for ADSL service is 18,000 feet (5,460 meters), though for speed and quality of service reasons many ADSL providers place a lower limit on the distances for the service. At the extremes of the distance limits, ADSL customers may see speeds far below the promised maximums, while customers near the central office have the potential for very high speeds. Unlike cable modem technology, DSL provides a point-to-point connection to ISP. DSL

proponents claim this technology is both more secure and less prone to local traffic fluctuations than its cable rival. By not sharing a LAN segment with other users, the systems are not as open to intrusion or susceptible to performance degradations related to local traffic.

## **Satellite Connection**

Getting the Internet feed from a satellite is really not all that different from getting TV signals from one. In both cases data is being sent from the satellite to a user's equipment and then translated and decoded. One major limitation of satellite technology is that it can only send data from the satellite to a user's receiver—not the other way. To get around this problem, a separate ISP connection is needed to send data to the Internet, typically over an analog modem. This connection works in conjunction with the satellite feed. As information is requested via the modem line, data are sent back via the satellite. Since most Internet users need high bandwidth from the Web, downstream (typically Web pages and file downloads), and less bandwidth going to the Web, upstream (typically link requests), this scenario of sending upstream data over a standard modem line and downstream data over the high-bandwidth satellite feed has been effective. The newest satellite technology allows for two-way communications and higher upstream bandwidths. A satellite return channel can be added for traffic bound for the Internet. The upload speeds through this satellite return channel may peak at 128 kbps. Download speeds with this system are up to 400 kbps. Satellite technology has one strong **advantage over cable modems and DSL: accessibility**. For many it is today's only high-speed option. It can reach areas that are otherwise difficult to establish contact with. The infrastructure exists to provide 400 kbps downstream bandwidth to almost anyone with a 21" satellite dish. It is eight times faster than fastest analog telephone modems and three times faster than ISDN. However, it is not as fast as cable modems or DSL services, which both can provide more than megabits of bandwidth. Also, cable and DSL access methods are cheaper. Equipment required for satellite connection includes instal-



lation of a mini-dish satellite receiver and a satellite modem. Like cable modem systems, satellite provides a "shared bandwidth" pipe. This means that download performance may vary depending upon other users of the satellite transponder. Another potential problem can be associated with severe weather. In severe snowstorms and heavy rain, users may experience signal fade.

The general rule about the Internet connection is the faster, the better. The bandwidth and transfer rate determine how quickly pictures, sounds, animation and video clips will be downloaded. Since multimedia and interactivity make the Internet such an exciting tool for information sharing, the speed is the key. Dial-up access provides an easy and inexpensive way for users to connect to the Internet, however, it is a slow-speed technology and most users are no longer satisfied with dial-up or ISDN connections. Fortunately, the broadband access, we once dreamed of, is now possible with TV cable, DSL and satellite links.

## **Internet Service Provider (ISPs)**

An ISP, or Internet Service Provider, is a company that offers internet access to individuals and businesses for monthly or yearly fees. In addition to internet connection, ISPs may also provide related services like web site hosting and development, email hosting, domain name registration etc.

Different ISPs, and sometimes even the same one, offer different types of internet connections - dialup, cable and DSL broadband. Hardware such as dialup modem or a wireless modem and router are usually provided by the company. When you register with an ISP for its services, an account is created and you are provided with the login details –username and password. You connect to the internet via your account and this way the company keeps a watch on your online activities. ISPs can be both regional, confined to a geographic area, or national, servicing the entire country and they are connected with each other through Network Access Points (NAPs). ISPs are also referred to as Internet Access Providers.

### **Types of internet access**

Most ISPs offer several types of internet access which essentially differ in connection speeds – the time taken for download and upload. Many also offer different plans or “packages” that vary in the download limit, number of email accounts on offer etc.

**Dialup internet access** is probably the slowest connection and requires you to connect to the internet via your phone line by dialing a number specified by the ISP. This means, dialup connections are not “always on”, unless you want to raise a huge phone bill, you would sever the connection when you finish work online.

**Cable internet access** can be obtained from the local cable TV operator. However, ask them for a demo first or check with your neighbours on the quality of service.

**Internet access via DSL broadband** is indeed very fast and ISPs can offer different download speeds – quicker the speed, higher will be the price. A wireless internet connection gives you freedom and flexibility – you need not be confined to one place (the work table, for instance) and can access the internet from any spot (even the bathroom) as long as your computer can catch the wireless signal. However, ensure that the provider secures the wireless connection with a password.

In many countries, especially those in which internet is still a kind of luxury, the ISPs may put a limit on the amount of data exchanged over a connection. For example, one may be allowed only a few GB (gigabytes) of download and upload each month. This is usually sufficient for routine users but if you plan to download movies and music or other large files, you have to keep a check on the amount of the data transfer.

### **How to choose an ISP?**

- **Monthly or yearly charge:** Yes, we all need to keep a close watch on our wallets but this does not mean you pick a lousy ISP just because it's cheap. The price would also vary across different plans – ensure you get the best deal.

- **Type of internet access:** A dialup connection would be more than enough if you plan to access the internet for only a few hours each week. Want to download movies, music etc.? Get a broadband connection.
- **Regional or national ISP:** Are you a frequent traveller? If so, talk to a national ISP and see if they have a plan that lets you use the same connection (via a USB modem) from different places.
- **Extra services from the ISP.**

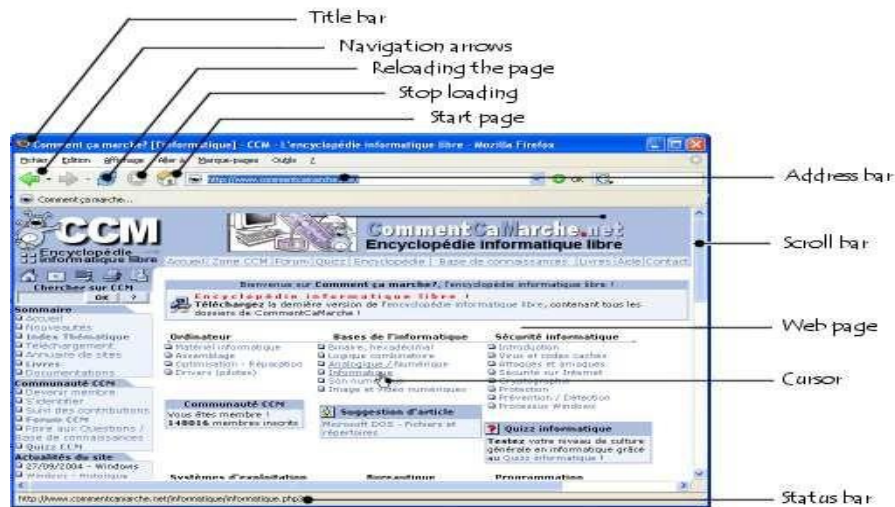
### ➤ Introduction to World Wide Web

The World Wide Web, abbreviated as WWW and commonly known as the Web, is a system of interlinked hypertext documents accessed via the Internet. With a web browser, one can view web pages that may contain text, images, videos, and other multimedia and navigate between them via hyperlinks.

To use the Web, in addition to an Internet connection, a user needs a special piece of software called a Web Browser (such as Internet Explorer). The browser acts as the graphical interface between the user and

The Web is based on:

- **HTML**
- **HTTP (Hyper Text Transfer Protocol)**
- **CGI (Common Gateway Interface)**



Some common Features of web browsers are listed below:

**Personal Preferences:** Most browsers have a number of options that you can set. These are:

1. **Cookies** you can ask to be notified before cookie is written and you can then decide whether or not to allow the cookie to be written.
2. **Disk Cache** you can set the size of your cache
3. **Fonts** you can select a font specification and also set a default font size.
4. **Helper applications**
5. **Home page location**

### ➤ Searching the World Wide Web

Searching the WWW can be both beneficial and frustrating. This is where search engines and web directories come in. Search engines, such as Google or Yahoo, are large databases of information that store and retrieve relevant website results based on keywords. Web directories, such as the Open Directory Project, are attempts to organize the best of the existing websites into categories and



subcategories. No search engine or web directory will have the same sites listed in the same order, and none will have all of the possible sites on the Internet listed. Furthermore, the ranking of a website within a search engine (i.e. how high up on the results list it appears) has as much to do with politics as it does with quality information.

Recently, search engines such as Google and Yahoo have also been providing "sponsored links"; links that appear on the first few pages of the search results and that are paid for by advertisers. This means that you may end up clicking on something that is not relevant to your search,

but instead actually advertising. The image presented here gives you an example of this on Google.

## Kinds of Search Engines and Directories

### Web directories

Web directories (also known as indexes, web indexes or catalogues) are broken down into categories and sub-categories and are good for broad searches of established sites. For example, if you are looking



for information on the environment but not sure how to phrase a potential topic on holes in the ozone, you could try browsing through the Open Directory Project's categories. In the Open Directory Project's "Science" category, there is a subcategory of "Environment" that has over twenty subcategories listed. One of those subcategories is "Global Change" which includes the "Ozone Layer" category. The "Ozone Layer" category has over twenty-five references, including a FAQ site. Those references can help you determine the key terms to use for a more focused search.

### Search engines

Search engines ask for keywords or phrases and then search the Web for results. Some search engines look only through page titles and headers. Others look through documents, such as **Google**, which can search PDFs. Many search engines now include some directory categories as well (such as Yahoo).

### Metasearch engines

These (such as Dogpile, Mamma, and Metacrawler) search other search engines and often search smaller, less well known search engines and specialized sites. These search engines are good for doing large, sweeping searches of what information is out there.

A few **negatives** are associated with metasearch engines. First, most metasearch engines will only let you search basic terms, so no Boolean operators or advanced search options. Second, many metasearch engines pull from pay-per-click advertisers, so the results you get may primarily be paid advertising and not the most valid results on the web.

### Searching with a Search Engine

A search engine is a device that sends out inquiries to sites on the web and catalogs any web site it encounters, without evaluating it. Methods of inquiry differ from search engine to search engine, so the results reported by each one will also differ. Search engines maintain an incredibly large number of sites in their archives, so you must limit your search terms in order to avoid becoming overwhelmed by an unmanageable number of responses.

Search engines are good for finding sources for well-defined topics. Typing in a general term such as "education" or "Shakespeare" will bring back far too many results, but by narrowing your topic, you can get the kind (and amount) of information that you need. Adjust your search based upon the number of responses you receive (if you get too few responses submit a more general search; if you get too many, add more modifiers).

### **Learn how the search engine works**

Read the instructions and FAQs located on the search engine to learn how that particular site works. Each search engine is slightly different, and a few minutes learning how to use the site properly will save you large amounts of time and prevent useless searching.

Each search engine has different advantages. Google is one of the largest search engines, followed closely by MSN and Yahoo. This means that these three search engines will search a larger portion of the Internet than other search engines. Lycos allows you to search by region, language, and date. Altavista has searches for images, audio, video, and news. Ask Jeeves allows you to phrase your search terms in the form of a question. It is wise to search through multiple search engines to find the most available information.

### **Search Fundamentals**

The Internet contains a vast collection of information, which is spread out in every part of the world on remote web servers. The problem in locating the correct information on the Internet led to the creation of search technology, known as Internet Search Engine. A search engine can provide links to relevant information based on your requirement or query. In order to understand the terminology and techniques to position our web site pages for higher ranking in search engines, the knowledge of the basic functioning of a search engine is essential.

### **Functions of Internet Search Engines**

Each search engine does the same functions of collecting, organizing, indexing and serving results in its own unique ways, thus employing various algorithms and techniques. In short, the functions of a search engine can be categorized into the following:

1. **Crawling and Spidering the Web:** The Crawler (also known as a web robot or a web spider) is a software program that can download web content and follow hyperlinks within these web contents to download the linked contents.
2. **Building the Index:** Search engines must store the information in a way that makes it useful.
3. **Storing the Web Site Contents**
4. **Search Algorithms and Results**

### **Search Strategies**

Search engines are good for finding sources for well-defined topics. Typing in a general term such as "education" or "Shakespeare" will bring back far too many results, but by narrowing your topic, you can get the kind (and amount) of information that you need.

Example:

- Go to Google (a search engine)
- Type in a general term ("education")
  - Add modifiers to further define and narrow your topic ("rural education Indiana")
  - Be as specific as you can ("rural education Indiana elementary school")
  - Submit your search.

### **Learn how the search engine works (Working of Search Engines)**

Read the instructions and FAQs located on the search engine to learn how that particular site works. Each search engine is slightly different, and a few minutes learning how to use the site properly will save you large amounts of time and prevent useless searching.

Each search engine has different advantages. Google is one of the largest search engines, fol-

lowed closely by MSN and Yahoo. This means that these three search engines will search a larger portion of the Internet than other search engines. Lycos allows you to search by region, language, and date. Altavista has searches for images, audio, video, and news. Ask Jeeves allows you to phrase your search terms in the form of a question. It is wise to search through multiple search engines to find the most available information.

### **Select your terms carefully**

Using inexact terms or terms that are too general will cause you problems. If your terms are too broad or general, the search engine may not process them. Search engines are programmed with various lists of words the designers determined to be so general that a search would turn up hundreds of thousands of references. Check the search engine to see if it has a list of such stop words. One stop word, for example, is "computers." Some search engines allow you to search stop words with a specific code (for Google, entering a "+" before the word allows you to search for it).

If your early searches turn up too many references, try searching some relevant ones to find more specific or exact terms. You can start combining these specific terms with NOT when you see which terms come up in references that are not relevant to your topic. In other words, keep refining your search as you learn more about the terms.

You can also try to make your terms more precise by checking the online catalog of a library. Most search engines now have "Advanced Search" features. These features allow you to use Boolean operators (below) as well as specify other details like date, language, or file type.

### **Know Boolean operators**

Most search engines allow you to combine terms with words (referred to as Boolean operators) such as "and," "or," or "not." Knowing how to use these terms is very important for a successful search. Most search engines will allow you to apply the Boolean operators in an "advanced search" option.

#### **AND**

AND is the most useful and most important term. It tells the search engine to find your first word AND your second word or term.

For example, if you'd like information about the basketball team Chicago Bulls and type in "Chicago AND Bulls," you will get references to Chicago and to bulls. Since Chicago is the center of a large meat packing industry, many of the references will be about this since it is likely that "Chicago" and "bull" will appear in many of the references relating to the meat-packing industry.

#### **OR**

Use OR when a key term may appear in two different ways. For example, if you want information on sudden infant death syndrome, try "sudden infant death syndrome OR SIDS." OR is not always a helpful term because you may find too many combinations with OR.

#### **NEAR**

NEAR is a term that can only be used on some search engines, and it can be very useful. It tells the search engine to find documents with both words but only when they appear near each other, usually within a few words.

For example, suppose you were looking for information on mobile homes, almost every site has a notice to "click here to return to the home page." Since "home" appears on so many sites, the search engine will report references to sites with the word "mobile" and "click here to return to the home page" since both terms appear on the page. Using NEAR would eliminate that problem. At the time of the last handout update, Altavista is the only major search engine to allow "NEAR" searches.

#### **NOT**

NOT tells the search engine to find a reference that contains one term but not the other. This is useful when a term refers to multiple concepts. For example, if you are working on an informative paper on eagles, you may encounter a host of websites that discuss the football team the

Philadelphia Eagles, instead. To omit the football team from your search results, you could search for "eagles NOT Philadelphia."

## UNIT-III

### ➤ TELNET

Telnet is a network protocol used on the Internet or local area networks to provide a bidirectional interactive text-oriented communications facility using a virtual terminal connection. User data is interspersed in-band with Telnet control information in an 8-bit byte oriented data connection over the Transmission Control Protocol (TCP).

Telnet was developed in 1969 beginning with RFC 15, extended in RFC 854, and standardized as Internet Engineering Task Force (IETF) Internet Standard STD 8, one of the first Internet standards. Historically, Telnet provided access to a command-line interface on a remote host. Most network equipment and operating systems with a TCP/IP stack support a Telnet service for remote configuration (including systems based on Windows NT). Because of security issues with Telnet, its use for this purpose has waned in favor of SSH.

The term telnet may also refer to the software that implements the client part of the protocol. Telnet client applications are available for virtually all computer platforms. *Telnet* is also used as a verb. To telnet means to establish a connection with the Telnet protocol, either with command line client or with a programmatic interface. For example, a common directive might be: "To change your password, telnet to the server, login and run the passwd command." Most often, a user will be telnetting to a Unix-like server system or a network device (such as a router) and obtain a login prompt to a command line text interface or a character-based full-screen manager.

Telnet is a client-server protocol, based on a reliable connection-oriented transport. Typically this protocol is used to establish a connection to Transmission Control Protocol (TCP) port number 23, where a Telnet server application (telnetd) is listening. Telnet, however, predates TCP/IP and was originally run over Network Control Program (NCP) protocols.

Because of negotiable options protocol architecture, many extensions were made for it, some of which have been adopted as Internet standards; IETF documents STD 27 through STD 32. Some extensions have been widely implemented and others are proposed standards on the IETF standards track.

Experts in computer security, such as SANS Institute, recommend that the use of Telnet for remote logins should be discontinued under all normal circumstances, for the following reasons:

- Telnet, by default, does not encrypt any data sent over the connection (including passwords), and so it is often practical to eavesdrop on the communications and use the password later for malicious purposes; anybody who has access to a router, switch, hub or gateway located on the network between the two hosts where Telnet is being used can intercept the packets passing by and obtain login, password and whatever else is typed with a packet analyzer.
- Most implementations of Telnet have no authentication that would ensure communication is carried out between the two desired hosts and not intercepted in the middle.
- Commonly used Telnet daemons have several vulnerabilities discovered over the years.

These security-related shortcomings have seen the usage of the Telnet protocol drop rapidly, especially on the public Internet, in favor of the Secure Shell (SSH) protocol. SSH provides much of the functionality of telnet, with the addition of strong encryption to prevent sensitive data such as passwords from being intercepted, and public key authentication, to ensure that the remote computer is actually who it claims to be. As has happened with other early Internet protocols, extensions to the Telnet protocol provide Transport Layer Security (TLS) security and Simple Authentication and Security Layer (SASL) authentication that address the above issues. However, most Telnet implementations do not support these extensions; and there has been relatively little interest in implementing these as SSH is adequate for most purposes.

## ➤ **FTP (File Transfer Protocol)**

File Transfer Protocol (FTP) is a standard network protocol used to transfer files from one host to another host over a TCP-based network, such as the Internet. FTP is built on a client-server architecture and uses separate control and data connections between the client and server. FTP users may authenticate themselves using a clear-text sign-in protocol but can connect anonymously if the server is configured to allow it.

The first FTP client applications were interactive command-line tools, implementing standard commands and syntax. Graphical user interface clients have since been developed for many of the popular desktop operating systems in use today.

FTP operates on the application layer of the OSI model, and is used to transfer files using TCP/IP. In order to do this an FTP server needs to be running and waiting for incoming requests. The client computer is then able to communicate with the server on port 21. This connection, called the control connection, remains open for the duration of the session, with a second connection, called the data connection, either opened by the server from its port 20 to a negotiated client port (active mode) or opened by the client from an arbitrary port to a negotiated server port (passive mode) as required to transfer file data. The control connection is used for session administration (i.e., commands, identification, passwords) exchanged between the client and server using a telnet-like protocol. For example "RETR filename" would transfer the specified file from the server to the client. Due to this two-port structure, FTP is considered an out-of-band protocol, as opposed to an in-band protocol such as HTTP. The server responds on the control connection with three digit status codes in ASCII with an optional text message, for example "200" (or "200 OK.") means that the last command was successful. The numbers represent the code number and the optional text represent explanations (e.g., <OK>) or needed parameters (e.g., <Need account for storing file>). A file transfer in progress over the data connection can be aborted using an interrupt message sent over the control connection.

FTP can be run in active or passive mode, which determines how the data connection is established. In active mode, the client sends the server the IP address and port number on which the client will listen, and the server initiates the TCP connection. In situations where the client is behind a firewall and unable to accept incoming TCP connections, passive mode may be used. In this mode the client sends a PASV command to the server and receives an IP address and port number in return. The client uses these to open the data connection to the server.

While transferring data over the network, four data representations can be used:

- ASCII mode: used for text. Data is converted, if needed, from the sending host's character representation to "8-bit ASCII" before transmission, and (again, if necessary) to the receiving host's character representation. As a consequence, this mode is inappropriate for files that contain data other than plain text.
- Image mode (commonly called Binary mode): the sending machine sends each file byte for byte, and the recipient stores the byte stream as it receives it. (Image mode support has been recommended for all implementations of FTP).
- EBCDIC mode: use for plain text between hosts using the EBCDIC character set. This mode is otherwise like ASCII mode.
- Local mode: Allows two computers with identical setups to send data in a proprietary format without the need to convert it to ASCII

For text files, different format control and record structure options are provided. These features were designed to facilitate files containing Telnet or ASA formatting.

Data transfer can be done in any of three modes:

- Stream mode: Data is sent as a continuous stream, relieving FTP from doing any processing. Rather, all processing is left up to TCP. No End-of-file indicator is needed, unless the data is divided into records.



- Block mode: FTP breaks the data into several blocks (block header, byte count, and data field) and then passes it on to TCP.<sup>[5]</sup>
- Compressed mode: Data is compressed using a single algorithm (usually run-length encoding).

## ➤ **BASICS OF HTML**

HTML is short for HyperText Markup Language.

- **Hypertext** is simply a piece of text that works as a link.
- **Markup Language** is a way of writing layout information within documents.

Basically an HTML document is a plain text file that contains text and nothing else. When a browser opens an HTML file, the browser will look for HTML codes in the text and use them to change the layout, insert images, or create links to other pages. Since HTML documents are just text files they can be written in even the simplest text editor

### **Brief HTML Background**

HTML has not been around for many years. November 1990 marks the day of the first web page and back then there were little to no HTML standards to be followed. A group called the World Wide Web Consortium was then formed and has since set the standards that are widely accepted and we will base our teachings around them.

### **Web Pages**

Web pages have many uses. Here are some important facts about why web pages are so useful.

- A cheap and easy way to spread information to a large audience.
- Another medium to market your business.

### **Words to Know**

- **Tag** - Used to specify ("mark-up") regions of HTML documents for the web browser to interpret. Tags look like this: <tag>
- **Element** - A complete tag, having an opening <tag> and a closing </tag>.
- **Attribute** - Used to modify the value of the HTML element. Elements will often have multiple attributes.

For now just know that a tag is a command the web browser interprets, an element is a complete tag, and an attribute customizes or modifies HTML elements.

### **HTML Head Section HTML Head Tag**

The <head> tag is a part of basic structure of HTML documents. It is intended for keeping technical and some other data of web-page. These do not show on the screen (except for <title> tag).

#### **List of tag's which are placed inside <head> tag.**

**<base>** Determines a base address of current document. It has two attributes: href-the address which should be used for the creation of a full path to files. target - the name of window or frame where links will be open.

**<basefont>** Determines a default font of document. It has three attributes: color - determines color of the text

face - determines a face of font.

size - determines a size of font (may have values from 1 to 7). Default value is 3.

**<link>** Links an internal file to a HTML document (for example, CSS file).

**<meta>** Determines metatags which contain information for browsers and search systems.

**<script>** It is intended for the description of scripts.

**<style>** Determines styles of the web page.

**<title>** Creates a web-page's title which shows in the title of a browser window. Requires a closing tag. If it is not determined, browser will show page file name.

### **Example**

```
<head><title>Title of the page</title></head>
```





It's a basic example of using <head> tag. On the picture you may see title of page, determined in <title> tag.

#### Example

```
<head>
<base href="http://yoursite.com/www/" target="_blank">
<basefont face="sans-serif" color="darkblue">
<title>Example of head tag</title>
</head>
```

This example shows how you can use <head> tag for basic formatting of web-page. You will receive the page with sans-serif dark blue font of text. All links will be open in new window.

#### The HTML Body Section

When you create a blank HTML document, if the body section is left blank you will see nothing on the screen. The <body> tag is the central and most important part in an HTML document. In fact, it is needed to be able to see anything on the screen. While the header tag is important also, mostly every standard tag in HTML goes into the body. It is the core of the page.

#### List of <body> tag's attributes

**Alink:** Determines a color of active link (when mouse button pressed).

**Background:** Determines a background image.

**Bgcolor:** Determines a background color

**Bgproperties:** Determines either background will be scrolled with content of page or not. Have one value "fixed" only.

**Link:** Determines color of hyperlinks.

**Vlink:** Determines color of visited hyperlinks.

**Text:** Determines color of text on page.

**Scroll:** Determines either show scroll bars or no.

**bottom margin, left margin, top margin:** Margins from bottom, left or top edge of browser window.

The body tag can be used to control the background color of the document by setting the attribute "bgcolor" using a hex value (see the tutorial on Colors for details). You can add other attributes to control the link and text colors and they will be the defaults for the web page you are attempting to build. Additionally, you can set an image to become the background through the background attribute. For the image to load in all popular browsers, it is recommended to be in the jpeg format as it generally loads faster than gif or png images.

If image is not found or browser don't show pictures, image will not appeared. Background will have color which determines by "bgcolor" tag.

**HTML Text Formatting Tags:** There are 3 types of text formatting tags:

#### 1. Text Phrase Tags

**<strong>** Makes the text appear in a strong bold way.

#### Example

```
<strong>Strong Text</strong>
```

#### Strong Text

**<em>** Makes the text appear in an emphasized way.

#### Example

```
<em>Emphasized Text</em>
```

#### Emphasized Text

**<code>** Makes the text appear as computer code.

#### Example

```
<code>Computer Code Text</code> Computer Code Text
```

**<samp>** Makes the text appear as sample computer code.

**Example**

**<samp>**Sample Computer Code Text**</samp>** Sample Computer Code Text

**<cite>** Makes the text appear as a citation.

**Example**

**<cite>**Citation Text**</cite>**

*Citation Text*

You can also combine any of these tags together for a "mixed" result:

**<strong><em>**Strong Emphasized Text**</em></strong>**

**Strong Emphasized Text**

**2. Text Style Tags**

**<tt>** Makes the text appear as mono spaced or teletype

**Example**

**<tt>**Mono Spaced Text**</tt>** Mono Spaced Text

Pre formatted text that

will keep bothspaces andline breaks.

**<blockquote>** Used to display long quotations.

**Example**

**<blockquote>**

Basically an HTML document is a plain text file that contains text and nothing else. When a browser opens an HTML file, the browser will look for HTML codes in the text and use them to change the layout, insert images, or create links to other pages. Since HTML documents are just text files they can be written in even the simplest text editor

**</blockquote>**

And here, we have a LONG quotation:

Basically an HTML document is a plain text file that contains text and nothing else. When a browser opens an HTML file, the browser will look for HTML codes in the text and use them to change the layout, insert images, or create links to other pages. Since HTML documents are just text files they can be written in even the simplest text editor

**<q>** Used to display short quotations. Will automatically place quotations around the text.

**Example**

**<q>**

Here we have a small quotation. This tag will automatically place quotations around the text.

**</q>**

Here we have a small quotation. This tag will automatically place quotations around the text.

**<p>** Used to define a paragraph.

**Example**

**<p>**

Paragraph Text goes here

**</p>**

Paragraph Text goes here.

**<br />** Used to insert a single line break in the text. (There is no end tag, so **<br><br />** is wrong).

**Example**

I am on one line and **<br />** then I am on another.

I am on one line and then I am on another.

**Header Tags**

**<h1>** Makes the text appear as the largest header.

**<h6>** Makes the text appear as the smallest header.

### Example

<h1>Header 1</h1>

### Header 1

<h2>Header 2</h2>

### Header 2

<h3>Header 3</h3>

Header 3

<h4>Header 4</h4>

### Header 4

<h5>Header 5</h5>

### Header 5

<h6>Header 6</h6>

### Header 6

## Hyperlinks

Hyperlinks can take the form of linking to one web page to another web page, opening an email or FTP client, or call for some other action. They are how we get from point A to point B on the World Wide Web; they are what make the web user friendly and convenient. A hyperlink can also move you from one point to another within a single page by using the "#" symbol.

### Creating Hyperlinks

We use <A> element (A stands for anchor) 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 see it off from that text.

### Creating Text Hyperlinks

The standard form of a hyperlink element looks like this:

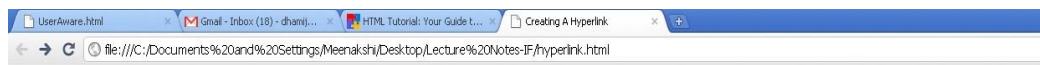
Find the answers at <A HREF=<http://W3C.org>>W3C</A>.

<A> tag is used to set up the a hyperlink and HREF attribute to set the target of the hyperlink to <http://W3C.org> (which is the home page for the World Wide Web Consortium). This the URL that browser will navigate to when the user clicks the link. The text inside the <A> element will appear in the hyperlink style for the page.

### Example

```
<HTML>
  <HEAD>
    <TITLE>
      Creating A Hyperlink
    </TITLE>
  </HEAD>
  <BODY>
    <CENTER>
      <H1>
        Creating A Hyperlink
      </H1>
      Here is a Website to Check Out...
      <A HREF="HTTP://W3C.ORG">W3C</A>!
    </CENTER>
  </BODY>
</HTML>
```

The results of this HTML appear in following figure:



## Creating A Hyperlink

Here is a Website to Check Out... [W3C!](http://W3C.org)

### Creating Graphical Hyperlinks

In addition to text, you can also use images as hyperlinks. Doing so is easy to do – just put an <IMG> element in the <A> element instead of the text. Here is an example:

```
<HTML>
  <HEAD>
    <TITLE>
      Creating A Graphical Hyperlink
    </TITLE>
  </HEAD>
  <BODY>
    <CENTER>
      <H1>
        Creating A Graphical Hyperlink
      </H1>
      <A HREF="http://W3C.ORG">
        <IMG WIDTH=110 HEIGHT=110 SRC="C:\Documents and
Settings\Meenakshi\My Documents\My Pictures\flowers.gif"
        ALT="Click me to go to W3C">
      </A>
    </CENTER>
  </BODY>
</HTML>
```

The results of this HTML appear in following figure. When the user clicks the image in the figure, the browser navigates to the hyperlink's target, <http://W3C.org>

### Linking to a Section of a Document

It is also possible to link to a section of a document instead of linking to the document as a whole. **anchors** can be used. Creating anchors is another valuable use of the <A> element. Anchors supply a name to a section of a page, so you can use the anchor's name to navigate to that section.

#### Example

```
<HTML>
  <HEAD>
    <TITLE>
      Linking to A Section In A Page
    </TITLE>
  </HEAD>
  <BODY>
    <CENTER>
      <H1>
        Linking to A Section In A Page
      </H1>
      Click here to go to the
      <A HREF="#BOTTOM">bottom</A>
```

of the Page.

```
<BR>
<BR>
<BR>
<BR>
<BR>
<BR>
<BR>
<BR>
<BR>
<BR>
<BR>
<BR>
<BR>
<BR>
<BR>
<BR>
```

```
<A NAME="BOTTOM">This is the bottom of the page.</A>
</CENTER>
```

```
</BODY>
```

```
</HTML>
```

Results are shown in the figures given below:



Figure: Navigating to an Anchor

### Creating Navigational Aids with Hyperlinks

One popular use of hyperlinks is to make it easy to navigate around a web site using image buttons, like arrows. Here is an example that displays arrows to let the user navigate to the next or previous page in a series of pages, or to navigate to the home page just by clicking the appropriate image:

```
<HTML>
```

```
<HEAD>
```

```
<TITLE>
```

```

        Creating Graphical Navigational Aids
    </TITLE>
</HEAD>
<BODY>
    <CENTER>
        <H1>
            Creating Graphical Navigational Aids
        </H1>
        Want to get somewhere fast? Click a button below...
        <BR>
        <A HREF="prev.html">
            <IMG WIDTH=172 HEIGHT=117 SRC="C:\Documents and
Settings\Meenakshi\My Documents\My Pictures\left.gif"
            ALT="Previous" BORDER=0>
        </A><A HREF="index.html"><IMG WIDTH=161 HEIGHT=105
            SRC="C:\Documents and
Settings\Meenakshi\My Documents\My Pictures\home.gif"
            ALT="Home" BORDER=0>
        </A>
        <A HREF="next.html">
            <IMG WIDTH=172 HEIGHT=117 SRC="C:\Documents and
Settings\Meenakshi\My Documents\My Pictures\right.gif"
            ALT="Next" border=0>
        </A>
    </CENTER>
</BODY>
</HTML>

```

The result of this HTML appears in the figure given below:



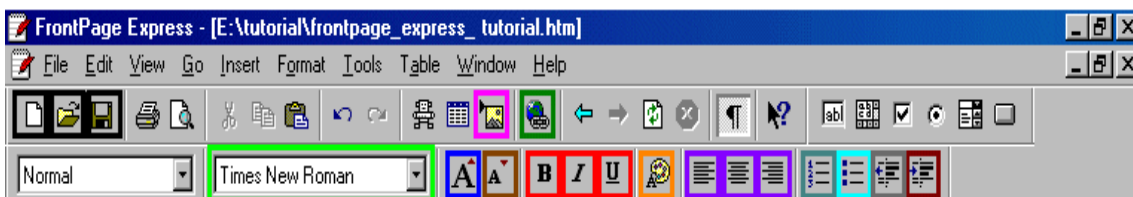
## Using Front Page Express and Plug-ins

### Overview

FrontPage Express is a Hyper Text Markup Language (HTML) Editor. FrontPage Express is a simpler version of FrontPage. Once you have mastered FrontPage Express, it would be very easy to upgrade to FrontPage to allow for more details to your web page.

FrontPage Express is very similar to Word97.

### Toolbar



Text



Entering text into a webpage is much like entering text into a word processor. Simply type the text you want to appear and then use the following steps to spice it up.

## Layout

The text on your webpage doesn't have to all be in paragraph blocks. You do something:

### Line Break

When you press **ENTER** at the end of a line of text, the cursor drops down two lines and starts a new paragraph. The only way to get text directly underneath the first line of text is to finish filling up the line and letting word-wrap do the rest. But sometimes you want to go to the very next line after only a few words. An example of this is a centered heading:

Jenny Kiaschko Ed Psy 490NET

- This is called a **Line Break**. To create a line break, simply hold down the **SHIFT** key and press **ENTER**.

- **Alignment**

You can align text and pictures to the right, center, or left of your webpage. To do this, highlight the text or picture you want to move and click on either the right, center, or left buttons on the toolbar. If you haven't started typing the text, just click on either the right, center, or left buttons and the cursor will move to that part of the page.

- **Indents**

You can indent blocks of text as well. To indent some text, click the **Increase Indent Icon** on the toolbar. To out-dent or un-indent some text, click the **Decrease Indent Icon** on the toolbar. When you indent or out-dent a block of text, the entire paragraph that the text is in is indented or out-dented. So be careful when using indent and out-dent, especially inside of lists.

### Lists

You can also make lists. Lists are indented and denoted and are especially good for outlines. Here is an example of the two major kinds of lists, the **Numbered List** and the **Bulleted List**:

| Numbered List                                                                                                | Bulleted List                                                                                             |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Apples</li><li>• Oranges</li><li>• Kiwi</li><li>• Tomatoes</li></ul> | <ul style="list-style-type: none"><li>○ Dogs</li><li>○ Cats</li><li>○ elephants</li><li>○ Sheep</li></ul> |

build a nested list, start by creating the top most list, or parent. (In the case above, you'd make a Numbered List and type in the first item.) Then to make a sub-list of that item, do the following: Press **ENTER** after typing in the list item of the parent list.

- Click the **Increase Indent Icon**.
- Select either the **Numbered List** or **Bulleted List Icon** from the toolbar. (In the case above, you'd select **Numbered List**.)
- Type in the first item of the nested list.

To end a sub-list and return to its parent list (In the example above, end the list containing Mike Loosbrock and Matt Christians and get back to list containing Work Study, Part-Time Employees, and Staff), do the following:

- Press **ENTER** after typing in the last item of the sub-list.
- Either press **BACKSPACE** twice, or click the **Decrease Indent Icon** twice.

### Attributes

FrontPage Express allows you to make all the same attribute changes you can make in Word97. The first step in changing text attributes is to highlight the text you want to modify with the mouse. You can then make the following changes:

## 1. Font Type

Font type is the font family of text, such as Comic Sans, Times New Roman, and Courier New. To change the font type, select the font you want from the **Font Type List Box** on the toolbar. (Try not to use a lot of non-standard fonts because if the font is not loaded on the computer where your page is being viewed, the font will appear as the browser default.)

### 1. Font Style

The style of the text can either be bold, *italics*, or underline. To change the font style, select one or more of the Style Icons on the toolbar.

#### • Font Color

The color of the text can also be changed. To change the font color, select the Text Color Icon on the toolbar. The Color Dialog Box appears. Choose the color you want and click OK.

#### •Font Size

You can change the font size by clicking the either the Increase Text Size or Decrease Text Size Icon from the toolbar.

## Images

You can insert images (\*.gif, \*.jpg, \*.bmp) into your webpage. Keep in mind that you need to keep your images relatively small in size, otherwise, your pages will take a long time to download.

To insert an image, put your cursor where you want to place the image and then:

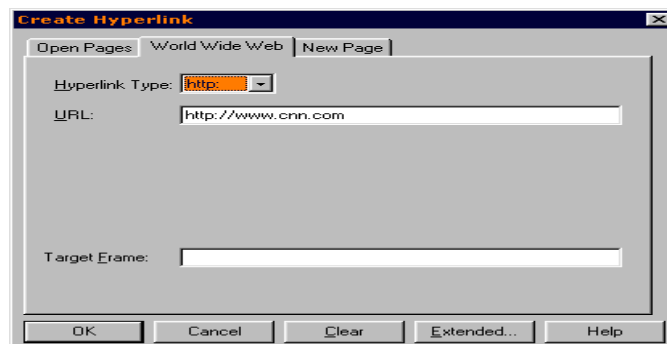
- 1) Select the Insert Image icon from the toolbar.
- 2) The Image Dialog Box appears. Click the Browse Button.
- 3) Find and select the image you wish to insert and click OK.

The image should appear on the webpage. After you have placed the image on the webpage, you can change the attributes of the image by right clicking on the image and choosing Image Properties.

The Image Properties Dialog Box appears. Choose the Appearance Tab.

Links to link the webpage other than your own, determine where you want to link to (For example, you might want the viewer to click on the words "CNN News" and have them sent to <http://www.cnn.com>). To do this, first highlight the text, picture, or both, that you want to be linked (in this case, we would highlight the words "CNN News"). Next click the Create or Edit Hyperlink Icon on the toolbar.

The **Create Hyperlink Dialog Box** should appear, as below. Choose the World Wide Web tab. Then make sure the **Hyperlink Type List Box** is set to "http:" on the **Hyperlink Type List Box**. Lastly, on the line titled URL type the address of the webpage. In this case we would type out <http://www.cnn.com>. Click the OK and you have just created a link that should look and work something like this link: [CNN News](http://www.cnn.com).



To link your own pages together, you first need to determine how the pages are to be connected. For example, you may want the viewer to click on the word "Hobbies", and have it go to a separate page of yours. To do this, follow the same directions as above: highlight the text and

click the **Create or Edit Hyperlink Icon** on the toolbar.

- ☐ The **Create Hyperlink Dialog Box** should appear, as below. Choose the World Wide Web tab. Next, select "(other)" for the **Hyperlink Type:**. On the **URL** line type the name of your other page. In this case we would type "hobbies.htm". Once that is done you can click the **OK** and you will have created a link to another one of your pages. Jason

- ☐ Brian

The **radio button box** gives you the same capabilities as the **check box** only in a radio button form.

#### **Please Vote for One Teacher**

Jim Levin Sandy Levin Michael Waugh

The **drop down menu box** allows you to give a list of choices in a compressed amount of space.

|        |       |
|--------|-------|
| Submit | Reset |
|--------|-------|

Jennifer  
Jason

The **push button box** allows you to add a button for different tasks: submit or reset.

The tools listed above are extremely useful because it allows you to add higher level features to your web page without having to know any type of coding.

### **Plug-ins**

In computing, a **plug-in** (or plug-in) is a set of software components that adds specific capabilities to a larger software application. If supported, plug-ins enables customizing the functionality of an application. For example, plug-ins is commonly used in web browsers to play video, scan for viruses, and display new file types. Well-known plug-ins examples include Adobe Flash Player and QuickTime.

Applications support plug-ins for many reasons. Some of the main reasons include:

- to enable third-party developers to create capabilities which extend an application
- to support easily adding new features
- to reduce the size of an application
- to separate source code from an application because of incompatible software licenses

**Specific examples** of applications and why they use plug-ins:

- Email clients use plug-ins to decrypt and encrypt email.
- Graphics software use plug-ins to support file formats and process images (Adobe Photoshop)
- Media players use plug-ins to support file formats and apply filters
- Microsoft Office uses plug-ins (better known as add-ins) to extend the capabilities of its application by adding custom commands and specialized features
- Software development environments use plug-ins to support programming languages
- Web browsers use plug-ins to play video and presentation formats (Flash, QuickTime, Microsoft Silverlight, 3DMLW)

## UNIT-IV

### ➤ BASIC AND ADVANCED HTML

#### Presenting and Arranging Text Using Paragraphs and Line Breaks

<P> tag starts a new paragraph and <BR> tag allows you to skip to the next line of text. For example:

```
<HTML>
  <HEAD>
    <TITLE>
      Using the &lt; P &gt; and &lt; BR &gt; tags
    </TITLE>
  </HEAD>
  <BODY>
    Here is a line of text.
    <BR>
    Using the &lt; BR &gt; tag skips to the next line.
    <P>
    On the other hand, using the &lt; P&gt; tag starts a new paragraph.
    </P>
  </BODY>
</HTML>
```

The results are shown in the figure given below:

#### sing <DIV> and <SPAN>

Two important formatting elements are the <DIV> and <SPAN> elements. These elements will become very useful when working with style sheets (to be covered later). Using <DIV> (which stands for division) and <SPAN>, you can specify a range of text and style it as you want it.

<DIV> is used to select a block of text and <SPAN> to select text inline. Here is an example using the <DIV> tag with its ALIGN parameter to set the alignment of text without using the

<P> tag:

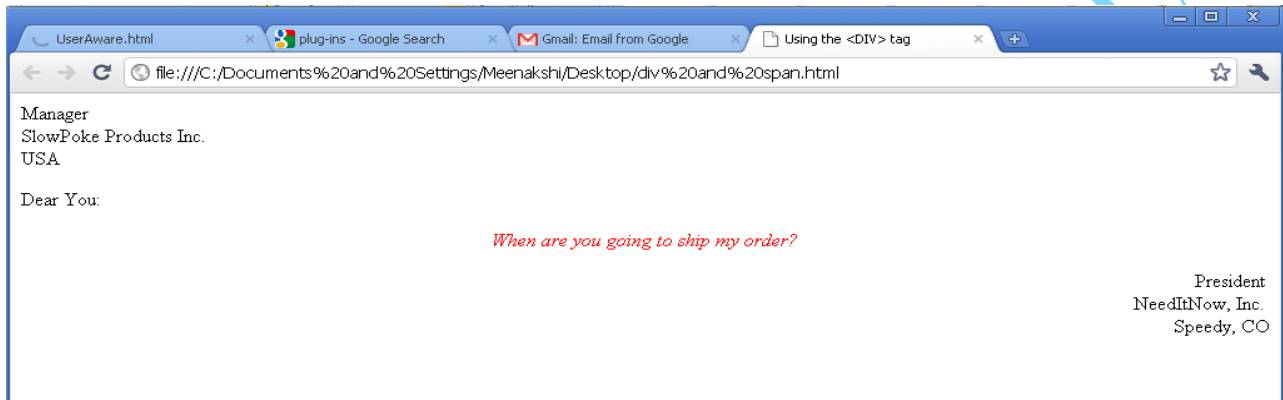
```
<HTML>
<HEAD>
  <TITLE>
    Using the &lt;DIV&gt; tag
  </TITLE>
</HEAD>
<BODY>
  <DIV ALIGN="LEFT">
    Manager
    <BR>
    SlowPoke Products Inc.<BR> USA
  </DIV>
  <P>
    Dear You:
    <DIV ALIGN="CENTER" STYLE="color: red; font-style: italic"> When are you
    going to ship my order?
  </DIV>
  <DIV ALIGN="RIGHT">
```

```

<P>
President
<BR>
NeedItNow, Inc.
<BR>
Speedy, CO
</DIV>
</BODY></HTML>

```

The results appear in following figure:



On the other hand **<SPAN>** can be used to mark sections of text inline or text in the midst of the other text. For example:

```

<HTML>
<HEAD><TITLE>Using the &lt;SPAN&gt; tag</TITLE></HEAD>
<BODY>
  This is <SPAN STYLE="font-style: italic">not</SPAN> going to do!
</BODY>

```

```

</HTML>

```

### Creating Horizontal Rules - **<HR>**

Draws a horizontal line to separate or group vertically. A horizontal rule is a horizontal line that serves to break up a page or to group items together. Some of the attributes of this tag are **ALIGN, COLOR, NOSHADE, SIZE, STYLE** and **WIDTH**.

Here is an example showing a number of ways to display and align horizontal rules:

```

<HTML>
<HEAD>
  <TITLE>
    Using the &lt;HR&gt; tag
  </TITLE>
</HEAD>
<BODY>
  Here is what &lt;Hr&gt; looks like:

```

```

  <HR>

```

```

  <BR>

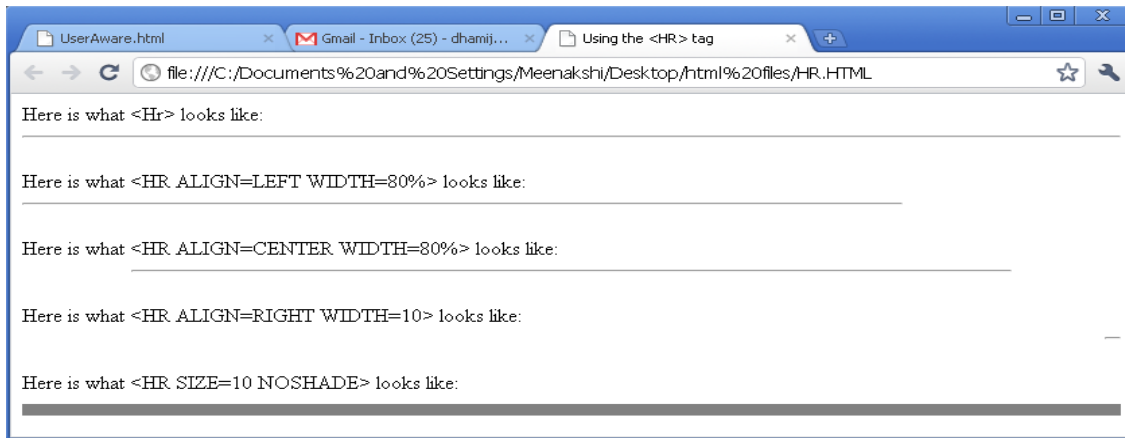
```

Here is what &lt;HR ALIGN=LEFT WIDTH=80%&GT; looks like:

```

  <HR ALIGN=LEFT WIDTH=80%><BR>

```



Here is what &lt;HR ALIGN=CENTER WIDTH=80%&GT; looks like:

```
<HR ALIGN=CENTER WIDTH=80%>
```

```
<BR>
```

Here is what &lt;HR ALIGN=RIGHT WIDTH=10%&GT; looks like:

```
<HR ALIGN=RIGHT WIDTH=10%>
```

```
<BR>
```

Here is what &lt;HR SIZE=10 NOSHADE&GT; looks like:

```
<HR ALIGN=CENTER SIZE=10 NOSHADE>
```

```
</BODY>
```

Following figure shows the

### Centering Text - <CENTER>

This tag centers its enclosed text in the Web browser.

Here is an example of <CENTER> at work centering multiline text:

```
<HTML>
```

```
<HEAD>
```

```
<TITLE>
```

```
Using the &lt;CENTER&gt; tag
```

```
</TITLE>
```

```
</HEAD>
```

```
<BODY>
```

```
<CENTER>
```

```
As you can see.
```

```
<BR>
```

```
the &lt;CENTER&gt; tag
```

```
<BR>
```

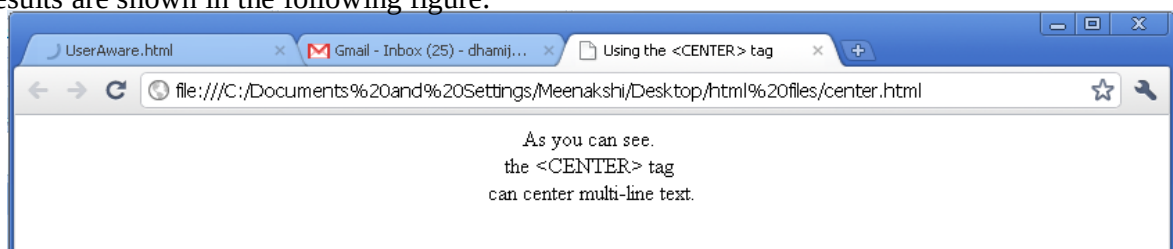
```
can center multi-line text.
```

```
</CENTER>
```

```
</BODY>
```

```
</HTML>
```

The results are shown in the following figure:





## Displaying Text In A Scrolling Marquee - <MARQUEE>

This tag displays scrolling text in a “marquee” style. Some of the attributes of this tag are:

- **ALIGN** – Sets the alignment of the text relative to marquee. Its values can be **TOP** (default), **MIDDLE** or **BOTTOM**.
- **BEHAVIOR** – Sets how the text in the marquee should move.
- **SCROLL** – (the default; text scrolls the marquee), **SLIDE** (text enters from one side and stops at the other side), or **ALTERNATE** (text seems to bounce from one side to the other).
- **BGCOLOR** – Sets the background color for the marquee box.
- **DIR** – Gives the direction of the text. Possible values: **LTR**: left to right text or table and **RTL**: right to left text or table.
- **DIRECTION** – Sets the direction the text should scroll. Can be **LEFT** (the default), **RIGHT**, **DOWN**, or **UP**.

Here is an example showing various <MARQUEE> options at work:

```
<HTML>
  <HEAD>
    <TITLE>
      Using Marquee element
    </TITLE>
  </HEAD>

  <BODY>
    <MARQUEE ALIGN="TOP" LOOP="INFINITE" BEHAVIOR="BOUNCE"
    BGCOLOR="GREEN" DIRECTION="RIGHT">
      <H2>

        Here's a marquee!
      </H2>

    </MARQUEE>
    <CENTER>
      <H1>
        Using Marquees
      </H1>
    </CENTER>

    <MARQUEE ALIGN="LEFT" LOOP="INFINITE" BEHAVIOR="SCROLL"
    BGCOLOR="RED" WEIGHT=40 WIDTH=300 DIRECTION="DOWN">
      <H2>
        Here's another marquee!
      </H2>
    </MARQUEE>

    <MARQUEE ALIGN="TOP" LOOP="INFINITE" BEHAVIOR="SLIDE"
    BGCOLOR="0000FF" WIDTH=100% DIRECTION="RIGHT">
      <H2>
        Here's a marquee!
      </H2>
```

</MARQUEE>

</BODY>

</HTML>

The results are shown below:

## Images in Web Pages

### Adding an Image to a Web Page - <IMG>

This tag inserts an image into a web page. Some of the attributes of this tag are:

**SRC** = "text string"

SRC tells where to get the picture that should be put on the page. SRC is the one required attribute for <IMG ...>. For example, suppose that the GIF file "../graphics/pumpkin.gif" is in the same directory as this page.

**ALT (text)**

The "alt" attribute defines an alternate text designed to be a textual replacement for objects that are usually not supported by some browsers. It also serves as additional information for browsers that do support these objects (images, forms and applets). Browsers may display this text as a tool tip when the mouse is over the object.

**ALIGN**

This attribute specifies the alignment of the element. These three values set the element's position with respect to the surrounding text.

- **bottom:** Means that the bottom of the object should be vertically aligned with the current baseline. This is the default value.
- **middle:** Means that the center of the object should be vertically aligned with the current baseline.
- **top:** Means that the top of the object should be vertically aligned with the top of the current text line.

These two values set the position of a floating element:

- **left:** Cause the image to float to the current left margin.
- **right:** Cause the image to float to the current right margin.



**WIDTH (length)**

Assigns a width to the element.

**HEIGHT(length)**

Assigns a height to the element.

**BORDER (pixels)**

Specifies the element's border width.

**HSPACE (pixels)**

This attribute works as a margin for the element, defining the amount of white space to be inserted at the left and right sides of the element.

**VSPACE (pixels)**

This attribute works as a margin for the element, defining the amount of white space to be

inserted at the top and bottom sides of the element.

```
<HTML>
```

```
<BODY>
```

```
  <H2>Norwegian Mountain Trip</H2>
```

```
  <IMG BORDER="0" SRC="/images/pulpit.jpg" ALT="Pulpit rock" WIDTH="304"
  HEIGHT="228" >
```

```
</BODY>
```

```
</HTML>
```

The result is shown below:

***Norwegian Mountain Trip***



### Creating Lists

Lists let you display information in a compact and tight format. There are three kinds of lists:

- **Unordered Lists**
- **Ordered Lists**
- **Definition Lists**

#### Unordered Lists

An unordered list starts with the `<ul>` tag. Each list item starts with the `<li>` tag. The list items will be marked with bullets (small black circles) by default:

```
<ul>
```

```
  <li>Coffee</li>
```

```
  <li>Tea</li>
```

```
  <li>Milk</li>
```

```
</ul>
```

#### Ordered HTML List

An ordered list starts with the `<ol>` tag. Each list item starts with the `<li>` tag. The list items will be marked with numbers by default:

Example

```
<ol>
```

```
  <li>Coffee</li>
```

```
  <li>Tea</li>
```

```
<li>Milk</li>
</ol>
```

## HTML Description Lists

HTML also supports description lists.

A description list is a list of terms, with a description of each term.

The `<dl>` tag defines the description list, the `<dt>` tag defines the term (name), and the `<dd>` tag describes each term:

Example

```
<dl>
  <dt>Coffee</dt>
  <dd>- black hot drink</dd>
  <dt>Milk</dt>
  <dd>- white cold drink</dd>
</dl>
```

## Creating a basic table

The basic structure of an HTML table consists of the following tags:

- Table tags: `<TABLE>` `</TABLE>`
- Row tags: `<TR>` `</TR>`
- Cell tags: `<TD>` `</TD>`

Constructing an HTML table consists of describing the table between the beginning table tag, `<TABLE>`, and the ending table tag, `</TABLE>`. Between these tags, you then construct each row and each cell in the row. To do this, you would first start the row with the beginning row tag, `<TR>`, and then build the row by creating each cell with the beginning cell tag, `<TD>`, adding the data for that cell, and then closing the cell with the ending cell tag, `</TD>`. When you finish all of the cells for a row, you would then close the row with the ending row tag, `</TR>`. Then, for each new row, you would repeat the process of beginning the row, building each cell in the row, and closing the row.

The following table is an example of a basic table with three rows and two columns of data.

|        |        |
|--------|--------|
| Data 1 | Data 2 |
| Data 3 | Data 4 |
| Data 5 | Data 6 |

The codes that generated this table look like this:

```
<TABLE>
<TR>
  <TD>Data 1</TD>
  <TD>Data 2</TD>
</TR>
<TR>
  <TD>Data 3</TD>
  <TD>Data 4</TD>
</TR>
<TR>
  <TD>Data 5</TD><TD>Data 6</TD>
</TR></TABLE>
```

this table contains no border, title, or headings. If you wish to add any of these elements

to your table, you need to include additional HTML codes.

## headings

In addition to the basic table tags, several options are available for adding additional ele-

ments to your table. For example, if you add a border, title, and column headings to the table in the previous section, the table would then resemble the following:

| TABLE TITLE |          |
|-------------|----------|
| Column A    | Column B |
| Data 1      | Data 2   |
| Data 3      | Data 4   |
| Data 5      | Data 6   |

The following codes generated the border, TABLE TITLE, and Column A and Column B headings for this table:

```
<TABLE BORDER="5">  
  <TR>  
    <TH COLSPAN="2">  
      <H3><BR>TABLE TITLE</H3>  
    </TH>  
  </TR>  
  <TH>Column A</TH>  
  <TH>Column B</TH>
```

Notice that the beginning table tag, **<TABLE>**, now includes the border tag, **BORDER="5"**, which places a border around the table and frames each cell. The number that you ascribe to the border tag, **BORDER=*n***, sets the width of the table border. Depending on how you design your table, you can then determine the border size that best suits your table and the overall design of your web page.

To add a title to your table, you would place the title and the attributes of that title between the row commands, **<TR>** and **</TR>**. The heading codes, **<TH>** and **</TH>**, define a heading cell and, by default, these codes center the heading and set it in bold type. However, if you want the title to span across the columns below it, you need to include the **COLSPAN=*n*** code. Since this table has two columns, the **COLSPAN="2"** code was necessary. To add emphasis to the header, you can use the header commands to make the text larger. In this table, notice that the **<H3>** and **</H3>** commands made the title larger. Finally, the **<BR>** tag created a space above the title.

The individual column headings are also described by the heading codes, **<TH>** and **</TH>**. Since these codes, by default, center the heading and set it in bold type, no additional commands or attributes were included in the heading commands.

### Polishing your table

To give your table a more polished look, you can include commands that will adjust the size of your table, add space in the cell, add space between rows, and align the data in a cell. Working with these commands is basically a process of trial and error to create the most appealing presentation of your information. The type of table that you create and the overall design of your web site will help you determine what works best for your table.

Some of the commands that enable you to customize your table include:

- The **WIDTH=*n*%** command sets the width of your table as a percentage of the screen. The letter *n* designates the percentage that you assign to this command. For example, if you want the width of your table to be one half the width of the screen, you would

include the **WIDTH="50%"** command in the beginning table command.

- The **CELLPADDING=*n*** command adjusts the vertical dimension of the cells. The letter *n* designates the numerical value that you assign to this command.
- The **CELLSPACING=*n*** command sets the space or border around the cells. The letter *n* designates the numerical value that you assign to this command.
- The **ALIGN=(LEFT, RIGHT, or CENTER)** command will horizontally align the data in a cell. For example, if you wish to place the data in the center of each cell in a row, you would include the **ALIGN=CENTER** command within the row command.
- The **VALIGN=(TOP, MIDDLE, or BOTTOM)** command will vertically align the data in a cell. For example, if you wish to place the data in the center of each cell in a row, you would include the **ALIGN=MIDDLE** command within the row command.

| TABLE TITLE |          |
|-------------|----------|
| Column A    | Column B |
| Data 1      | Data 2   |

The following codes, along with codes previously discussed, created this table:

```
<TABLE BORDER="5" WIDTH="50%" CELLPADDING="4" CELLSPACING="3">
```

```
<TR>
```

```
</TR>
```

```
<TH COLSPAN="2"><BR><H3>TABLE TITLE</H3>
```

```
</TH><TR><TH>Column A</TH><TH>Column B</TH><TR ALIGN="CENTER">
```

```
<TD>Data 1</TD><TD>Data 2</TD></TR></TABLE>
```

Notice that the **TABLE** command now includes the **WIDTH="50%"** command. This command extends the table across one half of the width of the text. Also, the **CELLPADDING="4"** command increases the vertical dimension of the cells, and the **CELLSPACING="3"** command increases the border around the cells. Finally, the **ALIGN="CENTER"** command places Data 1 and Data 2 in the center of the cell.

### Working with Frames

Simply put, a frame is a web browser window within another web browser window. By using frames, you can create web pages consisting of multiple windows.

Frames are related to one another in a manner determined by you, the web page author. For example, you can set up your web page so that a link in a frame will call up a page in the same frame, another frame, or the entire browser window.

### Creating the frames

Let's suppose you want to create a web page consisting of two frames. The frame on the left will contain a list of services. When you select a service, a corresponding description will then appear in the right frame. Following figure shows a sample page:





To create a page such as this, you first need to set up your main page or index.html file to accommodate frames.

There are two HTML tags used for frames: **<FRAMESET>** and **<FRAME>**. The **<FRAMESET>** tag sets the width of each frame as a percentage of the total width

of the web page. The **<FRAME>** tag assigns a name to each frame and indicates which file it will display. Here is a sample **index.html** file that creates a web page with two frames. **Note that the <Body> tag normally found in HTML files is not needed.**

**<HTML>**

**<HEAD>**

**<TITLE>**Computer Services**</TITLE>**

**</HEAD>**

**<FRAMESET COLS="30%,70%">**

**<FRAME scrolling=yes SRC="links.html" NAME="left">**

**<FRAME SRC="intro.html" NAME="right">**

**</FRAMESET>**

**</HTML>**

The **FRAMESET COLS** code sets up the frame size starting from left to right. So from this example, you can see that the left frame will take up 30% of the page's width and the right frame will take up 70% of the page's width.

Next, the **FRAME** code indicates:

- whether or not a scroll bar will automatically appear with the frame,
- the content that will appear in the frame by indicating the filename, and
- the name of the frame.

In this case, the left frame will automatically contain a scroll bar, indicated by the **FRAME SCROLLING=YES** code. This frame will display the file called **links.html**, indicated by the source code shown as **SRC**. Finally, the NAME code indicates that the frame is appropriately called **left**.

The right frame will not automatically contain a scroll bar since the SCROLLING code is not included. (A scrolling bar will appear, however, if it is needed.) This frame will display the file called **intro.html** and the name of this frame is **right**.

Note that even though the example uses the NAME code, assigning names to the frames is not required. It is helpful, however, to include it because the names give you an easy way to indicate in which frame you wish to target information.

So to recap, our sample code indicates that the file **intro.html** will contain introductory material and will appear in the right frame when the web page opens. No frame codes are needed in the **intro.html** file since it is simply an html file that displays in the right frame. A sample intro.html file might look like this:

**<HTML>**

**<HEAD><TITLE>**Computer Services**</TITLE> </HEAD>**

**<BODY>**

**<P align=Center>**

**<IMG SRC="deptbanner.GIF">**

**<H1><Center>**Computer Ser-

vices**</Center></H1><H3><Center>**Introduction**</Center></H3>**

**<P align=Center>**

The Computer Services Department is responsible for supporting all the company's computers and networks and providing information services such as computer seminars, technical documentation, and publications.

**</BODY>**

**</HTML>**

Now that you have the information that will automatically open in the right frame, you can continue by creating a file for the left frame.

### **Targeting information**

The left frame will contain a file called **links.html** which will include links to other pages. When someone clicks on a link, however, you can set it up so that the information appears in the right frame.

To target information to the right frame, you must include the proper codes as shown in the example file below:

**<HTML>**

**<HEAD>**

**<TITLE>**Computer Services**</TITLE>**

**</HEAD>**

**<BODY>**

**<H3>**Computer Services Topics**</H3>**

**<P ALIGN=left>**

**<A HREF="intro.html" target="right">**Introduction**</A> <P>**

**<A HREF="helpdesk.html" target="right">**Help Desk**</A> <P>**

**<A HREF="seminars.html" target="right">**Seminars**</A> <P></BODY>**

**</HTML>**

In the sample code, you can see the standard **A HREF** code is used to create a link. This linking code also contains the **target** code which indicates where you want to display the information. Our sample file is set up so that when someone selects a link, the resulting file appears in the right frame. This is evident by the fact that the target tag is set to "right," which is the name you assigned to the right frame in the **index.html** file. In addition, note that the file **intro.html** appears not only when the web page opens, but also when you click on the link **Introduction** in the left frame. It also assumes that you have created a **helpdesk.html** file and a **seminars.html** file with all the relevant information.

### **Linking to other web pages**

Besides linking to your own HTML files, you can also set the links in your frame to other pages on the web. To do this, you would indicate the URL instead of a filename as in the following example:

**<A HREF="http://www.cnn.com" target="right">**

Keep in mind, however, that if you set the link to a page that also has frames, the entire page will be shown in the target frame, and you will have frames within frames. To avoid this, don't set the link to appear in a frame. Instead, have it appear in its own window by eliminating the target tag as in this example:

**<A HREF="http://www.cnn.com">**

### **➤ NEWSGROUPS**

- A newsgroup is an Internet-based discussion around an individual, entity, organization or topic.
- Newsgroups enable remotely connected users to share, discuss and learn about their topic of interest by exchanging text messages, images, videos and other forms of digital content.
- Newsgroups are also referred to as usenet newsgroups.
- Newsgroups were initially created in 1979 by some university students to exchange messages.

- Users can subscribe for free by submitting an email address, and the group generally consists of several topics/categories based around a main theme.
- The user/subscriber can post a message in a particular topic/category, which is either automatically visible in open newsgroups, or can only be viewed by approved members in moderated groups.
- All subscribers participating or following a particular topic/newsgroup will be notified of new messages and updates.
- Moreover, news/stories/topics in the newsgroup can be read through a downloadable newsreader application.
- A newsgroup is a continuous public discussion about a particular topic. You can join a newsgroup at any time to become part of a huge conversation between hundreds or even thousands of people
- A newsgroup is a discussion about a particular subject consisting of notes written to a central Internet site and redistributed through Usenet, a worldwide network of news discussion groups. Usenet uses the Network News Transfer Protocol (NNTP).

Newsgroups are organized into subject hierarchies, with the first few letters of the newsgroup name indicating the major subject category and sub-categories represented by a subtopic name. Many subjects have multiple levels of subtopics. Newsgroups are divided into categories. The categories help to determine what kind of group and what kind of postings you will find there. Some major subject categories are:

- news,
- rec (recreation),
- soc (society),
- sci (science),
- comp (computers), and so forth (there are many more).
- Alt
- talk

**Use of Newsgroups** We can use newsgroups for various purposes, for example:

- Newsgroups are an excellent way to find out web sites to visit in your particular area of interest or just pick up detailed information about area of interest.
- You can buy and sell stuff. People often advertise things for sale in some newsgroup.

Users can post to existing newsgroups, respond to previous posts, and create new newsgroups.

Newcomers to newsgroups are requested to learn basic Usenet netiquette and to get familiar with a newsgroup before posting to it. A frequently-asked questions is provided. The rules can be found when you start to enter the Usenet through your browser or an online service. You can subscribe to the postings on a particular newsgroup.

Some newsgroups are moderated by a designated person who decides which postings to allow or to remove. Most newsgroups are unmoderated.

## **HTML: HyperText Markup Language**

**HTML** (HyperText Markup Language) is the most basic building block of the Web. It defines the meaning and structure of web content. Other technologies besides HTML are generally used to describe a web page's appearance/presentation (CSS) or functionality/behavior (JavaScript).

"Hypertext" refers to links that connect web pages to one another, either within a single website or between websites. Links are a fundamental aspect of the Web. By uploading content to the Internet and linking it to pages created by other people, you become an active participant in the World Wide Web.

HTML uses "markup" to annotate text, images, and other content for display in a Web browser.

HTML markup includes special elements such

as <head>, <title>, <body>, <header>, <footer>, <article>, <section>, <p>, <div>, <span>, <img>, <aside>, <audio>, <canvas>, <datalist>, <details>, <embed>, <nav>, <output>, <progress>, <video>, <ul>, <ol>, <li> and many others.

An HTML element is set off from other text in a document by "tags", which consist of the element name surrounded by "<" and ">". The name of an element inside a tag is case insensitive. That is, it can be written in uppercase, lowercase, or a mixture. For example, the <title> tag can be written as <Title>, <TITLE>, or in any other way. However, the convention and recommended practice is to write tags in lowercase.

## Web Page

**web page** is a document available on world wide web. Web Pages are stored on web server and can be viewed using a web browser.

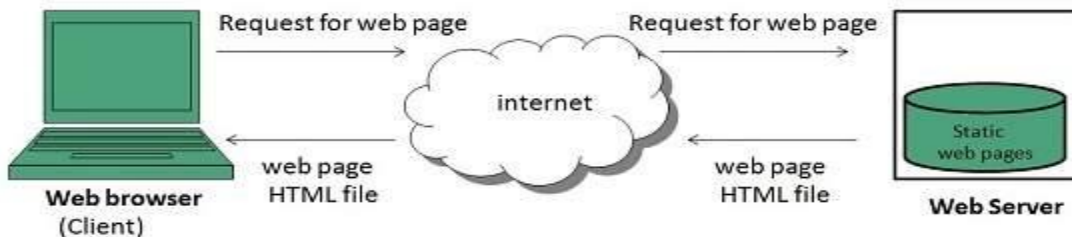
A web page can contain huge information including text, graphics, audio, video and hyper links. These hyper links are the link to other web pages.

Collection of linked web pages on a web server is known as **website**. There is unique **Uniform Resource Locator (URL)** is associated with each web page.

Static Web page

**Static web pages** are also known as flat or stationary web page. They are loaded on the client's browser as exactly they are stored on the web server. Such web pages contain only static information. User can only read the information but can't do any modification or interact with the information.

Static web pages are created using only HTML. Static web pages are only used when the information is no more required to be modified.



Dynamic Web page

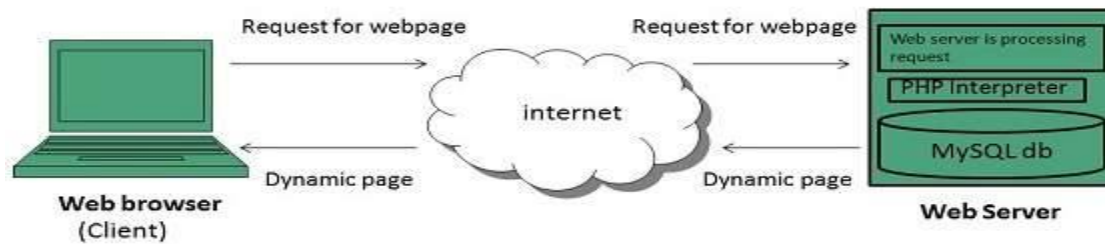
**Dynamic web page** shows different information at different point of time. It is possible to change a portion of a web page without loading the entire web page. It has been made possible using **Ajax** technology.

Server-side dynamic web page

It is created by using server-side scripting. There are server-side scripting parameters that determine how to assemble a new web page which also include setting up of more client-side processing.

Client-side dynamic web page

It is processed using client side scripting such as JavaScript. And then passed in to **Document Object Model (DOM)**.



## Scripting Languages

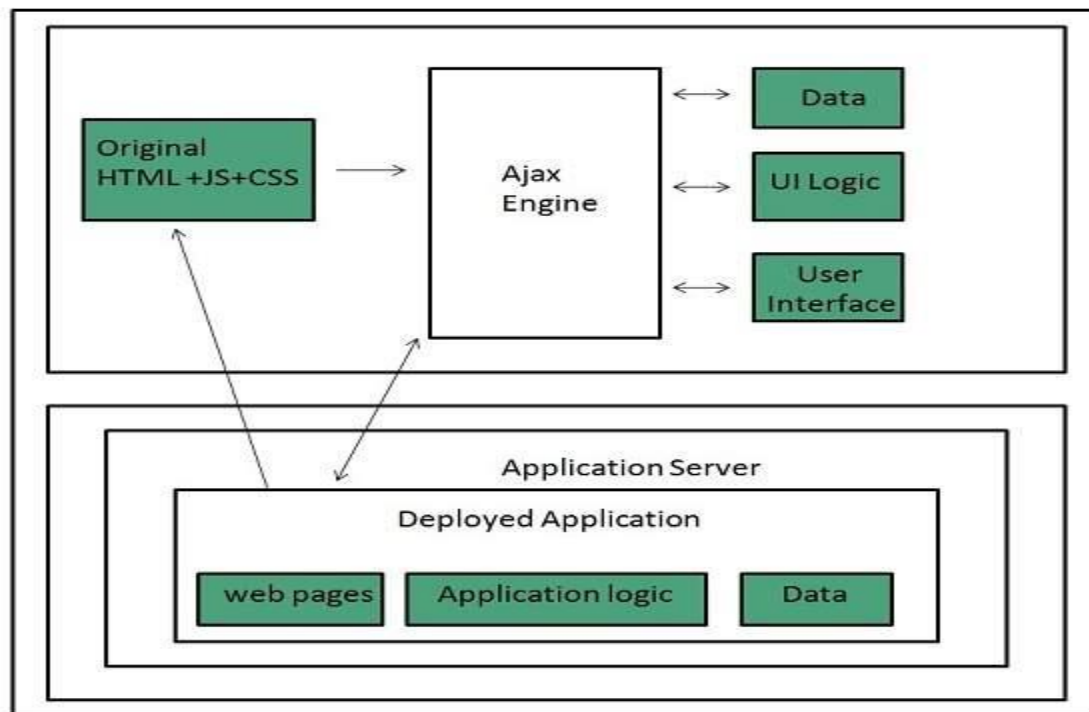
Scripting languages are like programming languages that allow us to write programs in form of script. These scripts are interpreted not compiled and executed line by line.

Scripting language is used to create dynamic web pages.

### Client-side Scripting

**Client-side scripting** refers to the programs that are executed on client-side. Client-side scripts contains the instruction for the browser to be executed in response to certain user's action.

Client-side scripting programs can be embedded into HTML files or also can be kept as separate files.



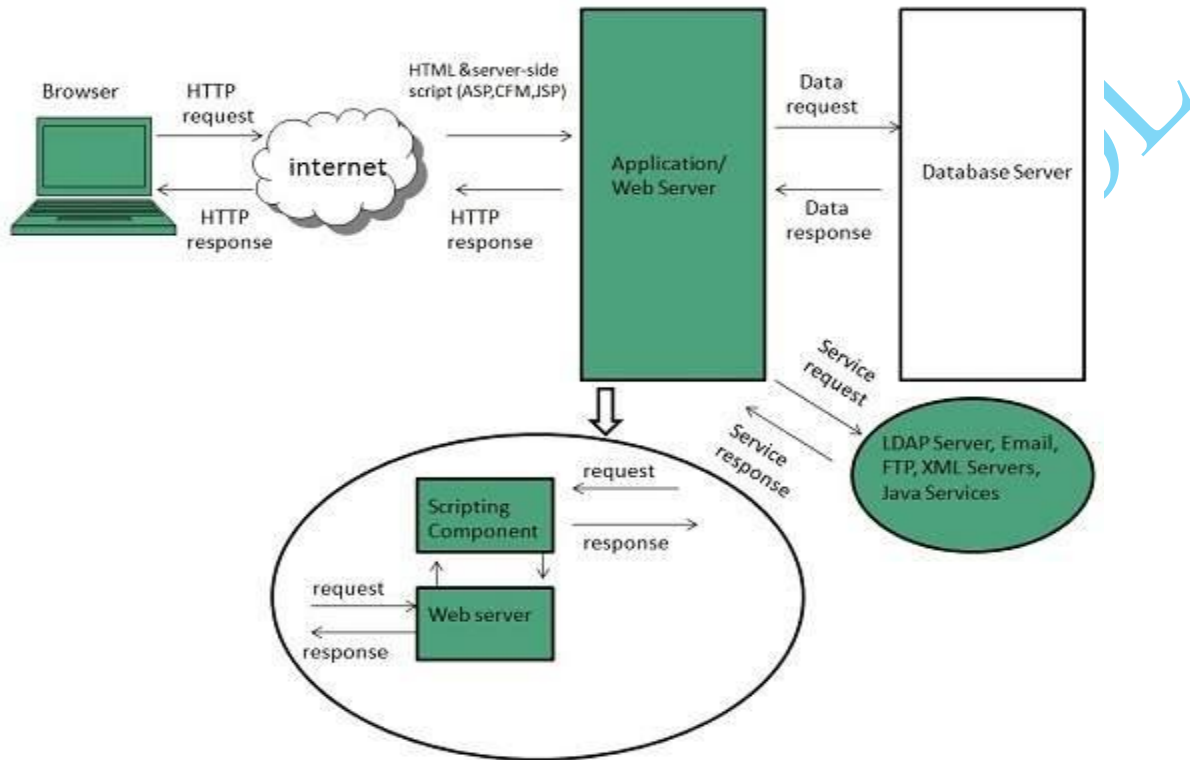
Following table describes commonly used Client-Side scripting languages:

| S.N. | Scripting Language Description                                                                                                                                                |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   | <b>JavaScript</b><br>It is a prototype based scripting language. It inherits its naming conventions from java. All java script files are stored in file having .js extension. |
| 2.   | <b>ActionScript</b> It is an object oriented programming language used for the development of websites and software targeting Adobe flash player.                             |
| 3.   | <b>Dart</b><br>It is an open source web programming language developed by Google. It relies on source-to-source compiler to JavaScript.                                       |

|    |                                                                                                                                                                                                |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4. | <b>VBScript</b><br>It is an open source web programming language developed by Microsoft. It is superset of JavaScript and adds optional static typing class-based object oriented programming. |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Server-side Scripting

**Sever-side scripting** acts as an interface for the client and also limit the user access the resources on web server. It can also collects the user's characteristics in order to customize response.



Following table describes commonly used Server-Side scripting languages:

| S.N. | Scripting Language Description                                                                                                                                                                                                       |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   | <b>ASP</b><br>Active Server Pages (ASP)is server-side script engine to create dynamic web pages. It supports <b>Component Object Model (COM)</b> which enables ASP web sites to access functionality of libraries such as DLL.       |
| 2.   | <b>ActiveVFP</b><br>It is similar to PHP and also used for creating dynamic web pages. It uses native <b>Visual Foxpro</b> language and database.                                                                                    |
| 3.   | <b>ASP.net</b><br>It is used to develop dynamic websites, web applications, and web services.                                                                                                                                        |
| 4.   | <b>Java</b><br>Java Server Pages are used for creating dynamic web applications. The Java code is compiled into byte code and run by <b>Java Virtual Machine (JVM)</b> .                                                             |
| 5.   | <b>Python</b><br>It supports multiple programming paradigms such as object-oriented, and functional programming. It can also be used as non-scripting language using third party tools such as <b>Py2exe</b> or <b>Pyinstaller</b> . |
| 6.   | <b>WebDNA</b>                                                                                                                                                                                                                        |



|                                                                               |
|-------------------------------------------------------------------------------|
| It is also a server-side scripting language with an embedded database system. |
|-------------------------------------------------------------------------------|

### ➤ CHAT ROOMS

A chat room is a Web site, part of a Web site, or part of an online service such as America Online, that provides a venue for communities of users with a common interest to communicate in real time. Forums and discussion groups, in comparison, allow users to post messages but don't have the capacity for interactive messaging. Most chat rooms don't require users to have any special software; those that do, such as Internet Relay Chat (IRC) allow users to download it from the Internet.

Chat room users register for the chat room of their choice, choose a user name and password, and log into a particular room (most sites have multiple chat rooms). Inside the chat room, generally there is a list of the people currently online, who also are alerted that another person has entered the chat room. To chat, users type a message into a text box. The message is almost immediately visible in the larger communal message area and other users respond. Users can enter chat rooms and read messages without sending any, a practice known as lurking.

Because chat room messages are spontaneous and instantly visible, there is a potential for abuse, which may or may not be intentional. Site hosts typically post a frequently asked questions (FAQ) list to guide users to appropriate chat room behavior, such as introducing yourself when you enter a room, making it clear when you are directing a question or response to a specific user, and reporting disruptive users, for example. Disruptive users may verbally abuse other chatters, monopolize the conversation, or even just disable it by repeatedly typing the same word or phrase into the conversation, a practice (much frowned upon) known as scrolling.

- A chat room is a designated virtual channel where users communicate with each other through the Internet, traditionally in plain text only.
- More recent developments in Web technology now allow the transmission of images and emoticons in a chat room as well.
- The term can mean online chatting, instant messaging and online forums using either synchronous or asynchronous conferencing.
- Some chat rooms require a username and password combination in order to log in or join a conversation, allowing for privacy among the users.
- From mIRC (Internet Relay Chat), one of the first popular chat clients, to Yahoo! Messenger, Skype and a slew of messaging applications available on the leading mobile platforms, the chatroom has evolved to become an indispensable tool for modern communication.

### ➤ MAILING LISTS

A **mailing list** is a set of email addresses. Here, a list of Email addresses are identified by a single name, for example –**Work**. When an Email message is sent to the mailing list name (= **Work**), it is automatically forwarded to all the email addresses in the list. Here Work is a mailing list name.

Most e-mail clients support mailing lists, which enables you to broadcast e-mail messages to groups that you define. You can go through following link to make your own mailing list in Gmail.

<http://www.wikihow.com/Make-a-Mailing-List-in-Gmail>

A **mailing list** may be utilized to send advertisements or other relevant information to individuals included on the list. For example, a company may acquire a mailing list that only includes people that do the majority of their shopping over the Internet. Some companies rent mailing lists for a designated cost and some create their own list

through business interactions. A magazine publisher has a list of the mailing addresses of all the subscribers to the magazine.

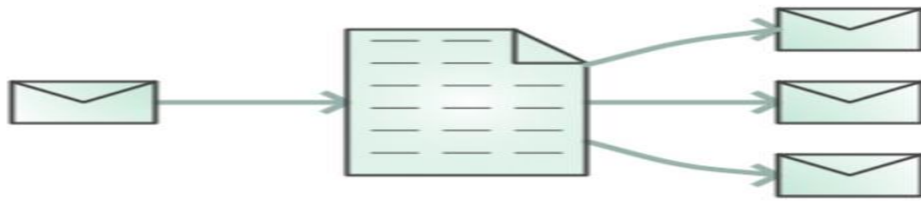
There are two types of mailing lists:

- **Announcement lists**
- **Discussion Lists**

Announcement Lists

An announcement mailing list transmits **one-way messages**, with no direct replies to the group.

Announcement lists are used so that one person or group can send announcements to a group of people. If you send product notifications, press releases, policy announcements or newsletters, a mailing list does everything you need.



Discussion Lists

A discussion mailing list automatically emails everyone in a group and transmits all replies to the entire group. With a discussion mailing list, list members share their thoughts and receive feedback from the group.

Usually, anyone on the list can start a new discussion. In some cases, a list member can receive messages without being able to send them to the list.



A discussion list is used to allow a group of people to discuss topics of their interest. This discussion may also be moderated, so only selected posts are sent on to the group as a whole, or only certain people are allowed to send to the group.

- On the Internet, mailing lists include each person's e-mail address rather than a postal address
- There are an estimated 30,000 mailing lists that you can subscribe to
- The email server does all the hard work
- List users benefit from sharing the brainpower of the people in the group
- Mail lists allow people to join (subscribe) or leave (unsubscribe) them at any time
  - A mailing list is a collection of names and addresses used by an individual or an organization to send material to multiple recipients. The term is often extended to include the people subscribed to such a list, so the group of subscribers is referred to as "the mailing list", or simply "the list".
  - **Types of mailing lists**
  - At least two types of mailing lists can be defined:
  - An announcement list is closer to the original sense, where a "mailing list" of people was used as a recipient for newsletters, periodicals or advertising. Traditionally this was done through the postal system.
  - With the rise of email, the electronic mailing list became popular. The second type allows members to post their own items which are broadcast to all of the other mailing list members. This second category is usually known as a discussion list.

- **More definitions**

- When similar or identical material is sent out to all subscribers on a mailing list, it is often referred to as a mailshot.<sup>21</sup> or a blast. A list for such use can also be referred to as a distribution list.
- In legitimate (non-spam) mailing lists, individuals can subscribe or unsubscribe themselves.
- Mailing lists are often rented or sold. If rented, the renter agrees to use the mailing list for only contractually agreed-upon times. The mailing list owner typically enforces this by "salting" (known as "seeding" in direct mail) the mailing list with fake addresses and creating new salts for each time the list is rented. Unscrupulous renters may attempt to bypass salts by renting several lists and merging them to find the common, valid addresses.
- Mailing list brokers exist to help organizations rent their lists. For some organizations, such as specialized niche publications or charitable groups, their lists may be some of their most valuable assets, and mailing list brokers help them maximize the value of their lists.
- A mailing list is simply a list of e-mail addresses of people that are interested in the same subject, are members of the same work group, or who are taking class together. When a member of the list sends a note to the group's special address, the e-mail is broadcast to all of the members of the list. The key advantage of a mailing list over things such as web-based discussion is that as new message becomes available they are immediately delivered to the participants' mailboxes.

- **MUDs**

(Multiple User Dimension, Multiple User Dungeon, or Multiple User Dialogue (**MUDs**) and MUD Object-Oriented (**MOOs**) are real-time computer environments, similar to chat, where groups come together at the same time to discuss common issues. **MUDs** are more sophisticated than textual chat as a MUD facilitates exploration of a virtual environment. Each user takes control of a computerized persona or avatar. The environment allows a user to walk around, chat with other characters, explore the virtual areas, solve puzzles, **and** sometimes even create their own space, descriptions **and** items. A MOO is a kind of MUD that utilizes an object-oriented programming language. Many consider **MOOs** to be the most advanced **MUDs** because of the kind of software development a user can accomplish. A large body of research has been conducted on synchronous chat, **MUDs and MOOs and** their uses in distance education **and** training over the years. Multiple-user dungeons, or more commonly understood these days to mean multi-user dimension or domains. These were originally a space where interactive role-playing games could be played, very similar to Dungeons **and** Dragons.

A MUD, or Multi User Dungeon, is a text-based adventure game played over the Internet against other players who are online at the same time. In the last quarter of a century thousands of MUD games have sprung up hosted mainly by enthusiasts, not for commercial gain. Hence MUD games are primarily free to play, twenty-four hours a day, and new players are always welcomed. You connect to a MUD using a telnet client - a small and Generally freely available piece of software which allows a textual connection to a remote machine. Into the telnet client you enter the address of the MUD you want to play and a connection is established. Then after logging on you can use simple typed commands to interact with the environment you find. Every MUD has its own commands, it's own environment and its own atmosphere. It is an addicting and intensely enjoyable way to spend time online and it is the most social form of computer gaming - allowing you to meet, talk to and brutally murder fun-seeking people from round the world.

## ➤ **ELECTRONIC PUBLISHING**

Electronic publishing is the process for production of typeset quality documents containing text, graphics, pictures, tables, equations etc. it is used to define the production of any that is digitized form. It uses new technology allowing publishers to deliver documents and other contents quickly and efficiently as well.

Electronic Publishing can be represented as

Electronic Publishing = Electronic Technology + Computer Technology + Communication Technology + Publishing this wholly electronic publication defines electronic publishing this way “the term E-publishing refers more precisely to the storage and retrieval of information through electronic communications media. It can employ a variety of formats and technologies, some already in widespread use by businesses and general consumers and others still being developed. E-publishing technology can be classified into two general categories:

Those in which information is stored in a centralized computer source and delivered to the users by a telecommunications systems , including online database services and videotext represents the most active area in E publishing today”, and

Those in which the data is digitally stored on a disk or other physically deliverable medium.

Models of Electronic Publishing

Electronic Books (E-Books)

Publishing a book electronically is to achieve quick publishing and dissemination of information. A book may not have contemporary value that a journal has but it certainly has an archival and reference value. A number of encyclopedias do come out on CD-ROM. It is felt that the Internet is not a satisfactory platform for publishing full text of documents but CD-ROM is appropriate medium for publishing books. Book length E-text is also available on Floppy disc and CD-ROM, although distribution by floppy disc is decreasing due to the convenience and growing popularity of CD-Rom. Most E-Texts published on CD-ROM are public domain works including encyclopedias. Using the E-publishing language on Internet like SGML presented and published attractively with multimedia effect especially for documents like Yearbooks, Encyclopedias.

Electronic Periodicals: This new media is a vehicle of scientific communication and purely a product of scientific research. This category includes electronic journals, newsletters, magazines, zines and discussion lists. Perhaps no other area in E-publishing has received more study than the area of E-journals, particularly as they apply to scholarly research.

Electronic Database: With the emergence of computers & communication technologies the strength of information system in the development of modern database has taken new shape. Information originating from a database has become a large segment of Electronic publishing that provides a base for procedures such as retrieving information, drawing conclusions, and making decisions.

The holding of the library database consisting of books, periodicals, reports & theses can be converted to electronic form that allows access for public use through digital networks. The online electronic library card catalog (OPAC) shows how information could be published and that enable user to search the document with various access points like author, title, subjects.

The six major developments that have taken place since the 1960s that have squared the use of databases are: -

Networking and co-operative arrangements.

Leasing arrangements for information access.

Establishment of scientific information dissemination centers.

Increased online access (remote access via terminals).

Emergence of the online retailers (i.e. Dialog, Lexus etc).

Improved distribution (via CD-ROM or other means).

Various electronic databases publishers today account for publishing information both bibliographic and full text on CD-ROMs as well as making them available for online retrieval. The prominent online publishers include DIALOG, BRS, and EBSCO host etc.

An excellent example of electronically published databases, the ERIC (Educational Resource Information Centre) database is the largest educational database in the world that contains more than 800,000 records per year. ERIC is available in CD-ROM format as well as on the net free of charge.

Electronic Publishing on CD-ROM

CD-ROM has provided new dimension for information storage and retrieval. Publishing information mainly abstracting sources are quite common in CD-ROM. Although much of the work on e-journals has concentrated on distribution via the Internet, there has been some work on CD-ROM as well.

The advantages of CD-Rom are-

More material can be included, both in terms of quantity (650+megabytes) and type (multi-media resources).

Full text searching is relatively easy to include.

Print-on-Demand (POD)

Print-on-Demand is a new method for printing books (and other content) that allows books to be printed one at a time, or on demand. This method helps free publishers from the process of doing a traditional print run of several thousand books at a time.

**Digital Content :** Digital Content generally refers to the electronic delivery of fiction that is shorter than book-length, nonfiction, and documents and other written works of shorter length. Publishers of digital content deliver shorter sized works to the consumer via download to handheld and other wireless devices. Technology used for delivering digital content includes Adobe PDF, XML, HDML, WAP (Wireless Application Protocol) and other technologies..

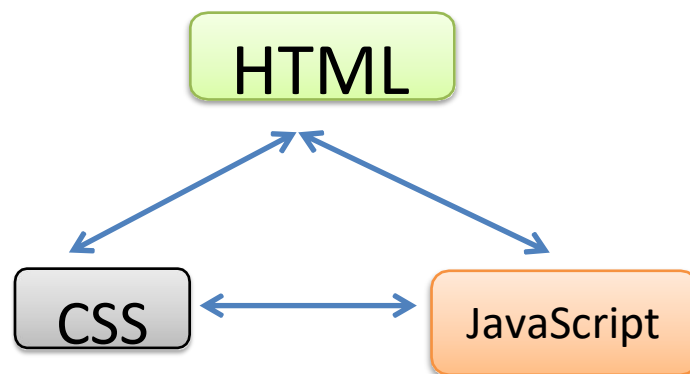
**Electronic Ink:** Electronic Ink is a developing technology that could have a huge impact on the media and publishing industries. Electronic Ink could be used to create a newspaper or book that updates itself. In addition, this content could be programmed to change at any time. For example, you could have a billboard that rotates different ads, or you could receive a coupon in the mail that is frequently updated with the latest offer. For media companies, the possibilities are almost endless. Someday your electronic newspaper will simply update itself every day. E- Ink Corporation, a new company with major investors, and Xerox are two companies currently developing this technology.

**Email Publishing:** Email publishing, or newsletter publishing, is a popular choice among readers who enjoy the ease of receiving news items, articles and short newsletters in their email box. The ease of delivery and production of email newsletters has led to the development of a massive number of available email newsletters, mailing lists and discussion lists. Newsletters are also widely used by media companies to complement their web and print offerings.

**Publishing:** Web publishing is not a novel practice any longer, but it continues to change and develop with the introduction of new programming languages. HTML is still the most widely used web programming language, but XML is also making headway. XML is valuable because it allows publishers to create content and data that is portable to other devices.

## ➤ WEB PROGRAMMING MATERIAL

Web programming



History of the Web

- Internet (1960s)
- World Wide Web - WWW (1991)
- First Web Browser - Netscape, 1994
- Google, 1998





## Tablets (iPad), 2010



### 1. Introduction to myDAQ

NI myDAQ is a simple and intuitive DAQ device from National Instruments. NI myDAQ have Inputs (AI), Analog Outputs (AO), Digital Inputs (DI) and Digital Outputs (DO).



In addition to traditional I/O, the myDAQ have a built-in **Digital Multimeter**. The myDAQ can be used as a **Power Supply**. Using the built-in software the myDAQ can also be used as an **Oscilloscope** and **Function Generator**.

When you plug in the device in the USB connection on your PC, the following will pop-up automatically (NI ELVISmx Instrument Launcher):



Note! You need to install the NI ELVISmx driver software first

If not, you find it in the National Instruments folder:



## Web Pages Example

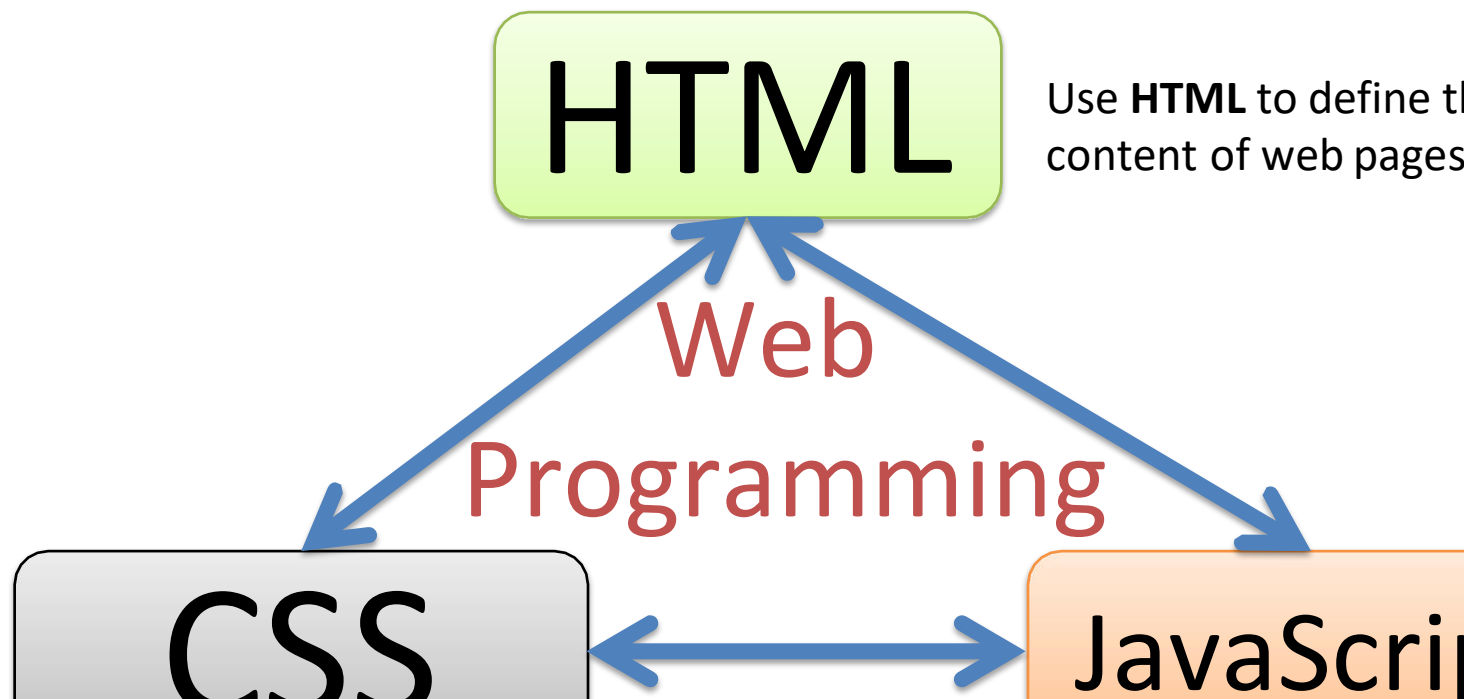


Gratis frakt på alle bestillinger over 1.038,-. Og gratis retur.

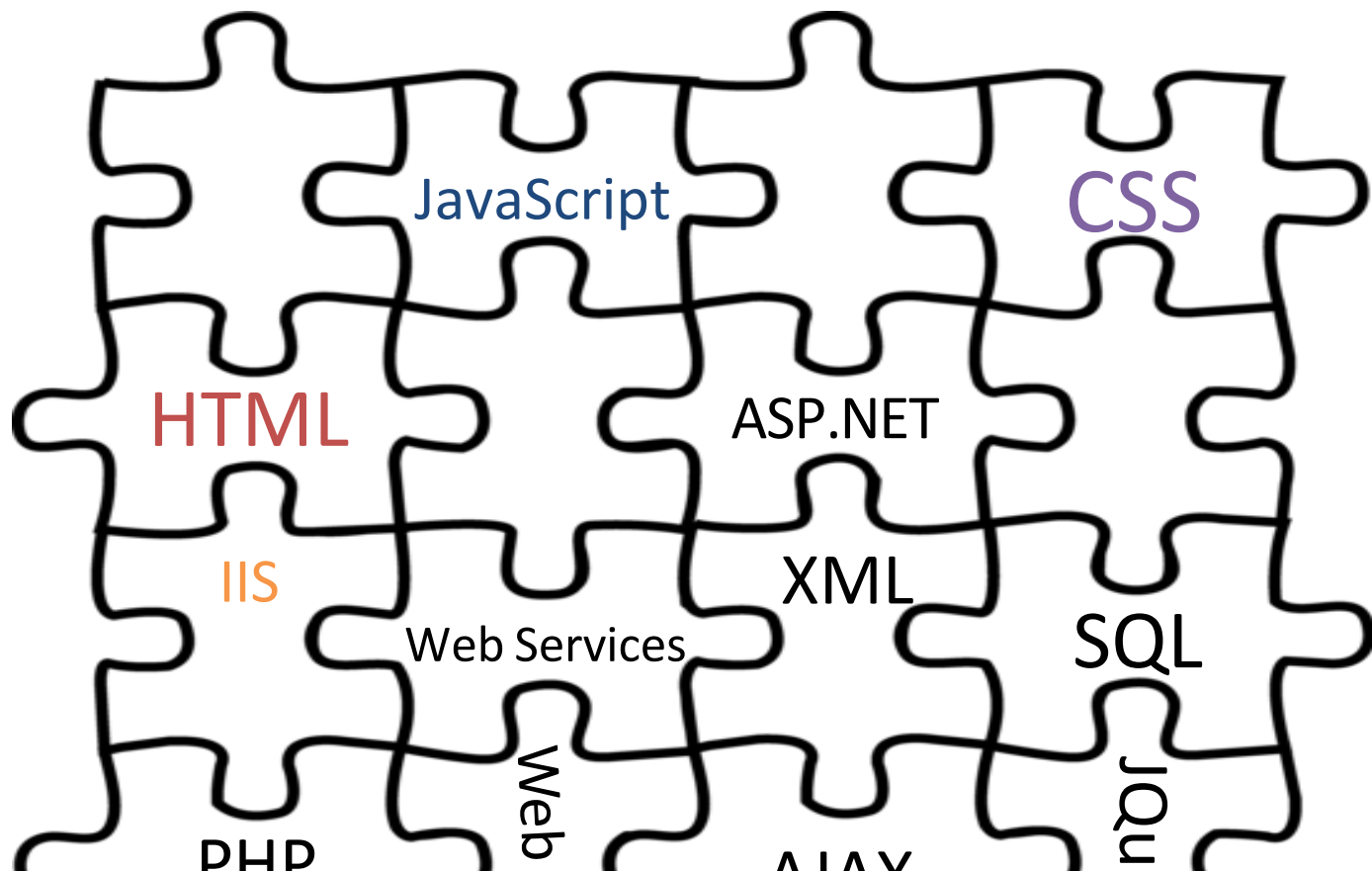
## Større. På absolutt alle måter

Kjøp nå

# The Web Programming Triang



# Web Programming

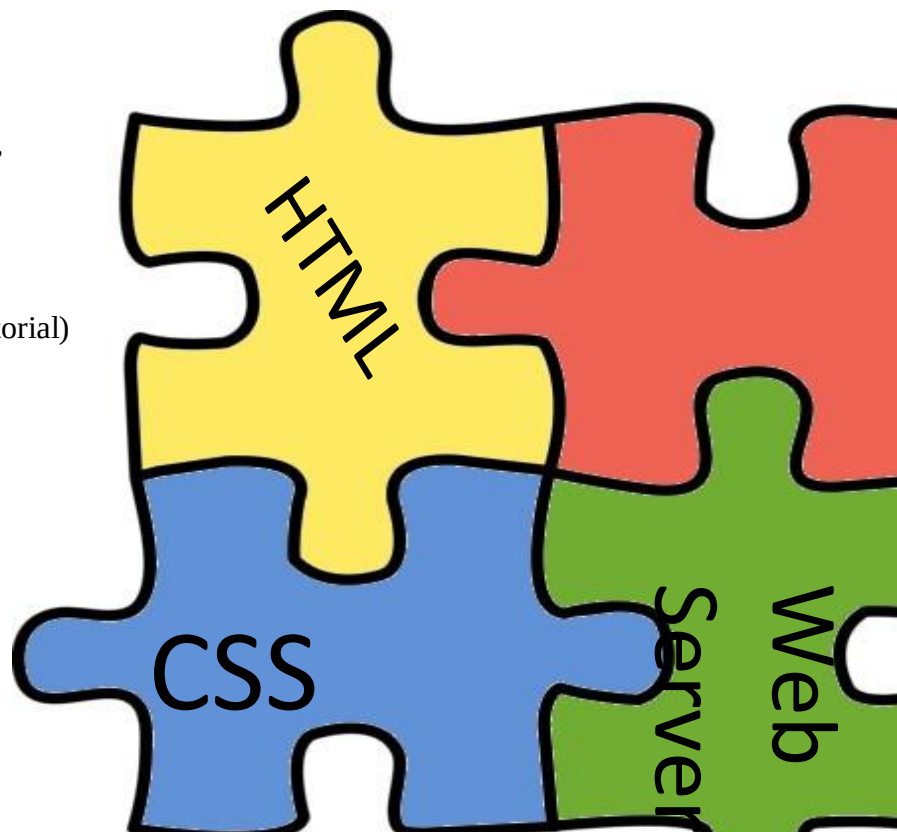


## Basic Web Programming

- HTML
- CSS
- JavaScript

For more Dynamic Web Programming we use e.g.,

- ASP.NET
- SQL
- AJAX
- PHP
- etc. (But these are not part of this Tutorial)



# Web Architecture



Internet Explorer



Chrome



Firefox



Opera



Safari

Client

Web Browser

HTML

CSS

JavaScript

side

# Client-Server Example

**Client**

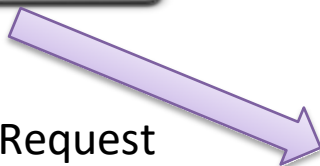
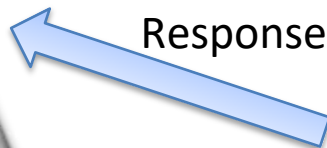
Web Browser

Response

**Web Server**

Request

**Data**





# Web Platform

The Web Browser creates the visual web page you see in the browser by interpreting the HTML code

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

<h1>My First Heading</h1>

<p>My first paragraph.</p>

</body>
</html>
```



**My First Heading**  
My first paragraph.

HTML, CSS, JavaScript  
Client-side

Web Browser

The code runs on the server and is converted to HTML before sending to client (Web Browser)

Web Page (HTML)



## HTML

- **HyperText Markup Language (HTML)**
- The Visual Appearance of a Web Site
- “Web Browser Language”: All Web Browser understand HTML
- HTML 5 is the latest
- Maintained by W3C
  - World Wide Web Consortium

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Title of the document</title>
  </head>

  <body>
    Content of the document.....
  </body>

</html>
```

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

<h1>My First Heading</h1>

<p>My first paragraph.</p>

</body>
</html>
```

HTML Code

# HTML



# HTML Page Structure

```
<html>
```

```
<body>
```

```
<h1>This is a heading</h1>
```

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

```
<p>This is another paragraph.</p>
```

```
</body>
```

```
</html>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h1>This is a heading
```

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

```
<p>This is another  
paragraph.</p>
```

```
</body>
```

```
</html>
```

### HTML Editors

- Professional HTML editors:
- Adobe Dreamweaver
- CoffeeCup HTML Editor
- ...
- For the simple examples in this Tutorial we only need Notepad (Windows) or TextEdit (Mac)

# My First HTML Web Page

`<tagname>content</tagname>`

```
<!DOCTYPE html>
<html>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
```

- The DOCTYPE declaration defines the document type

- The text between <html> and </html> describes the web document
- The text between <body> and </body> describes the visible page content
- The text between <h1> and </h1> describes a heading
- The text between <p> and </p> describes a paragraph

# Images Hyperlinks

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

```
<h1>This is a heading</h1>
```

```
<a href="http://www.google.com">This is a link to Google</a>
```

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

```
<!DOCTYPE html>  
<html>  
<body>  
<h1>This is a heading</h1>  
  
</body>  
</html>
```

# HTML Tags

Hyperlink:

```
<a href="http://www.google.com">This is a link to Google</a>
```

Bold Text:

```
<b>This is my Text</b>
```

Headers:

```
<h1>This is my Header</h1>
```

```
<h2>This is my Header</h2>
```

```
<h3>This is my Header</h3>
```

Title:

```
<title>This is my Title</title>
```

Image:

Paragraph:

```
<p>My first paragraph.</p>
```

Line Break:

```
This is my Text
```

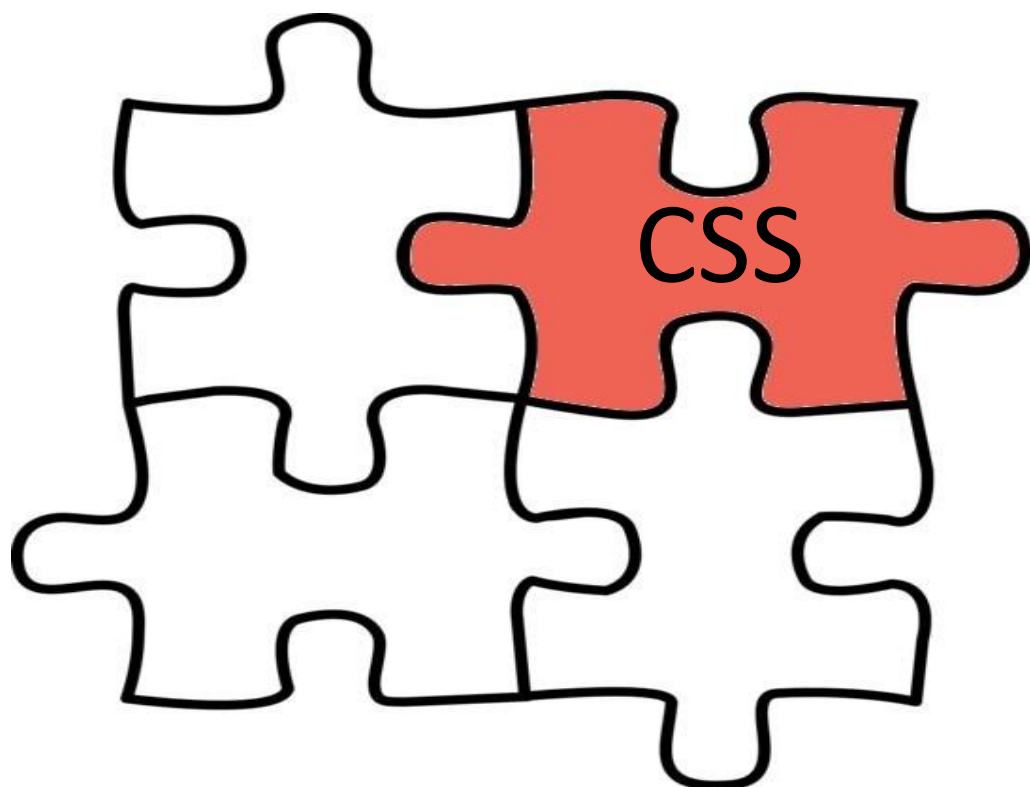
```
<br>
```

```
This is also my Text
```

Comments:

```
<!-- Write your comments here -->
```





## CSS

- CSS – Cascading StyleSheets
- Styles define **how to**
- **display** HTML elements
- CSS is used to control the style and layout of multiple Web pages all at once

### Why CSS is needed

- HTML was never intended to contain tags for formatting a document.
- HTML was intended to define the content of a document, like:
  - <h1>This is a heading</h1>
  - <p>This is a paragraph.</p>
- When tags like <font>, and color attributes were added to the HTML 3.2 specification, it started a nightmare for web Development of large web sites, where fonts and color information were added to every single page, became a long and tedious process.
- To solve this problem, the World Wide Web Consortium (W3C) created CSS.
- In HTML 4.0, all formatting could be removed from the HTML document, and stored in a separate CSS file.
- All browsers support CSS today.

```
body {  
    background-color: #d0e4fe;  
} h1 {color: orange;  
    text-align: center;  
}
```

## HTML + CSS Example

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
    background-color: #d0e4fe;
}

h1 {
    color: orange;
    text-align: center;
}

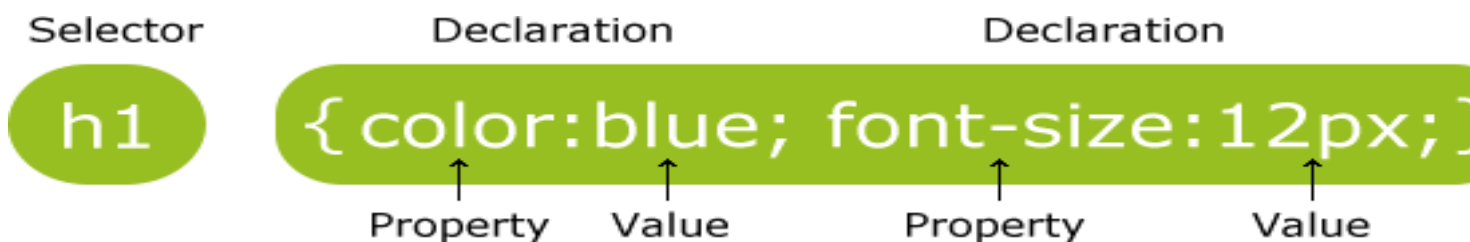
p {
    font-family: "Times New Roman";
    font-size: 20px;
}
</style>
</head>
<body>
```

```
<h1>My First CSS Example</h1>
```



Students: Create this Code in e.g., Notepad++ and Save the File as .htm.

# CSS Syntax



A CSS declaration always ends with a semicolon, and declaration groups are surrounded by curly braces, e.g.:

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

# CSS Classes

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

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

```
<!DOCTYPE html>  
<html>  
<head>  
<style>  
  .center {  
    text-align: center;  
    color: red;  
  }  
</style>  
</head>  
<body>
```

```
<h1 class="center">My Heading</h1>
```

```
<!DOCTYPE html>  
<html>  
<head>  
<style>  
  p.center {  
    text-align: center;  
    color: red;  
  }  
</style>  
</head>  
<body>  
  
<h1 class="center">My Heading</h1>  
<p class="center">My Paragraph</p>  
  
</body>
```

## Three Ways to Insert CSS

There are three ways of inserting a style sheet:

- **External style sheet** (Recommended!!)
  - An external style sheet is ideal when the style is applied to many pages. With an external style sheet, you can change an entire Web site by changing just one file.
  - An external style sheet can be written in any text editor. The file should not contain any HTML tags.
  - The style sheet file must be saved with a .css extension
- **Internal style sheet**
  - An internal style sheet should be used when a single document has a unique style.
  - You define internal styles in the head section of an HTML page, inside the <style> tag
- **Inline style**
  - An inline style loses many of the advantages of a style sheet (by mixing content with presentation). Use this method only when necessary.

# Internal Style Sheet Example

You define internal styles in the head section of an HTML page, inside the <style> tag.

```
<head>
<style>
body {
    background-color: linen;
}
h1 {
    color: maroon;
    margin-left: 40px;
}
</style>
```

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
    background-color: linen;
}
h1 {
    color: maroon;
    margin-left: 40px;
}
</style>
</head>
<body>

<h1>This is a heading</h1>
```



# External Style Sheet Example

Each HTML page must include a link to the style sheet with the <link> tag. The <link> tag goes inside the head section:

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

An example of a style sheet file called “myStyle.css”, is shown below:

```
body {  
    background-color: lightblue;  
}  
  
h1 {
```

# CSS Properties

## Text Color

```
body {  
    color: blue;  
}  
  
h1 {  
    color: #00ff00;  
}  
  
h2 {  
    color: rgb(255,0,0);  
}
```

## Text Alignment

```
h1 {  
    text-align: center;  
}  
  
p.date {  
    text-align: right;  
}  
  
p.main {  
    text-align: justify;  
}
```

## Background Color

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

## Text Font

```
p {  
    font-family: "Times New Roman", Times, serif;  
}
```

## Text Size

```
h1 {  
    font-size:  
}  
  
h2 {  
    font-size:  
}
```

# CSS Example

[http://www.w3schools.com/css/demo\\_default](http://www.w3schools.com/css/demo_default)

## Welcome to My Homepage

Use the menu to select different Stylesheets

Stylesheet 1

Stylesheet 2

Stylesheet 3

Stylesheet 4

No Stylesheet

## Same Page Different Stylesheets

This is a demonstration of how different stylesheets can change the layout of your HTML page. You can change the layout of this page by selecting different stylesheets in the menu, or by selecting one of the following links:

[Stylesheet1](#), [Stylesheet2](#), [Stylesheet3](#), [Stylesheet4](#).

### No Styles

This page uses DIV elements to group different sections of the HTML page. Click here to see how the page looks like with no stylesheet:

[No Stylesheet](#).

### View Stylesheets

The stylesheets uses CSS syntax to layout the HTML page. Take a look at the stylesheets used in this demonstration:

[Stylesheet1](#), [Stylesheet2](#), [Stylesheet3](#), [Stylesheet4](#).

Side-

Lorem  
amet,  
adipis  
diam  
euis  
laoree  
aliqua

## JavaScript

- JavaScript is the programming language of the Web.
- All modern HTML pages are using JavaScript.
- JavaScript is the default scripting language in all modern browsers, and in HTML5.
- JavaScript is probably the most popular programming language in the world.
- It is the language for HTML, for the Web, for computers, servers, laptops, tablets, smart phones, and more.
- JavaScript can Change HTML Elements! – which makes it very powerful!

### Why JavaScript?

JavaScript is one of **3 languages** all web developers **must** learn:

1. **HTML** to define the content of web pages
2. **CSS** to specify the layout of web pages
3. **JavaScript** to program the behavior of web pages

This tutorial is about JavaScript, and how JavaScript works with HTML and CSS.

### JavaScript vs. Java

- JavaScript and Java are different languages, both in concept and design.
- JavaScript was invented by Brendan Eich, to be used in Netscape (a no longer existing browser) in 1995, and was adopted as an ECMA standard in 1997.

# JavaScript Example

```
<!DOCTYPE html>
<html>
<body>
<h1></h1>
<p>
<button type="button" onclick="myFunction()">
</button>
<p id="demo">
</p>
<script>
</script>
</body>
</html>
```

## My First JavaScript

JavaScript can change the content of an HTML element:

Click Me!

Hello JavaScript!

# JavaScript Exam

```
<!DOCTYPE html>
<html>
<body>
<p>Please input a number between 1 and 10:</p>
<input id="numb" type="number">
<button type="button" onclick="myFunction()">Submit</button>
<p id="demo"></p>
<script>
function myFunction() {
    var x, text;
    // Get the value of input field with id="numb"
    x = document.getElementById("numb").value;//
    If x is Not a Number or less than one or
    greater than 10

    if (isNaN(x) || x < 1 || x > 10) {
        text = "Input not valid";
    } else {
        text = "Input OK";
    }
    document.getElementById("demo").innerHTML = text;
}
</script>
</body>
</html>
```

Please input a number between



Input not valid

# JavaScript Comments

```
// Change heading:  
document.getElementById("myH").innerHTML = "My First Page";  
// Change paragraph:  
document.getElementById("myP").innerHTML = "My first paragraph.";
```

```
var x = 5;      // Declare x, give it the value of 5  
var y = x + 2; // Declare y, give it the value of x + 2
```

```
/*  
The code below will change the heading with id = "myH" and the paragraph with id = "myP" in my web  
*/  
document.getElementById("myH").innerHTML = "My First Page";  
document.getElementById("myP").innerHTML = "My first paragraph.";
```

## Using Comments to Prevent Execution:

```
//document.getElementById("myH").innerHTML = "My First Page";  
document.getElementById("myP").innerHTML = "My first paragraph.";
```

### JavaScript Placement

- You can place any number of scripts in an HTML document. Scripts can be placed in the <body>, or in the <head> section of the HTML page, or in both.
- It is a good idea to place scripts at the bottom of the <body> element. This improves page load, because HTML loading is not blocked by scripts loading.
- Scripts can also be placed in external files. External scripts are practical when the same code is used in many different pages. JavaScript files have the file extension .js.

### Web Server

The term web server can refer to either the hardware (the computer) or the software (the computer application) that deliver web content that can be accessed through the Internet.

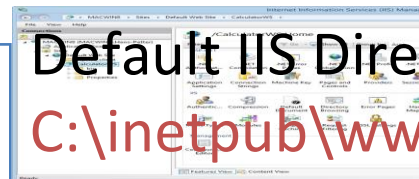
The most common use of web servers is to host websites, but there are other uses such as gaming, data storage or enterprise applications.

- **IIS** - Internet Information Services
  - Microsoft Windows
- **Apache** Web Server
  - Open Source
  - Cross-platform: UNIX, Linux, OS X, Windows, ...
- **Nginx** (pronounced "engine x") - Has become very popular lately
- GWS (Google Web Server)
- ...



## Internet Information Services (IIS)

- IIS – Internet Information Services
- Web Server that host the Web Pages/Web Site
- Make sure to have the IIS Role installed with ASP.NET subcomponents



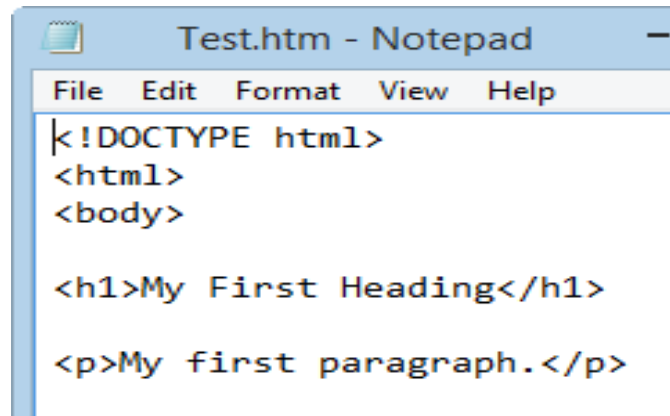
# IIS Deployment

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

<h1>My First Heading</h1>

<p>My first paragraph.</p>

</body>
</html>
```

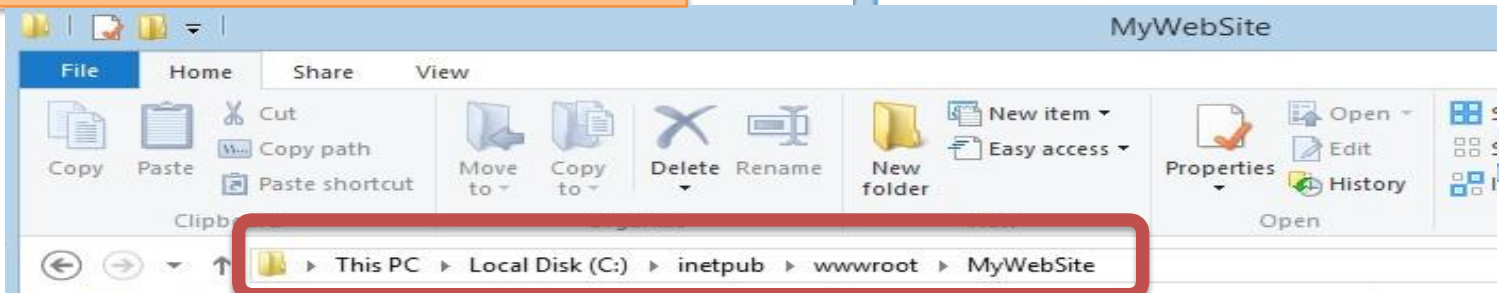


A screenshot of a Notepad window titled "Test.htm - Notepad". The window has a menu bar with "File", "Edit", "Format", "View", and "Help". The text area contains the following HTML code:

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

<h1>My First Heading</h1>

<p>My first paragraph.</p>
```



# IIS Deployment

The image shows a screenshot of the Internet Information Services (IIS) Manager console and a web browser. In the IIS Manager, the 'Default Web Site' is selected, and the 'Add Application...' option is highlighted in the context menu. The 'Add Application' dialog box is open, showing the 'Alias' as 'MyWebSite', the 'Physical path' as 'C:\inetpub\wwwroot\MyWebSite', and the 'Application pool' as 'DefaultAppPool'. A blue arrow points from the 'Add Application...' menu item to the dialog box. Another blue arrow points from the 'OK' button in the dialog box to the web browser. The web browser shows the URL 'http://localhost/MyWebSite/Test.htm' and the page content 'My First Heading' and 'My first paragraph.'.

Internet Information Services (IIS) Manager console showing the 'Default Web Site' selected. The 'Add Application...' option is highlighted in the context menu.

The 'Add Application' dialog box is open, showing the following configuration:

- Site name: Default Web Site
- Path: /
- Alias: MyWebSite
- Application pool: DefaultAppPool
- Example: sales
- Physical path: C:\inetpub\wwwroot\MyWebSite
- Pass-through authentication: Connect as... Test Settings...
- ☐ Enable Preload

The web browser shows the URL <http://localhost/MyWebSite/Test.htm> and the page content:

## My First Heading

My first paragraph.

“localhost” is your personal computer, you can also use your IP address.

Test your Web Page in your Web browser

\*\*\* **END** \*\*\*