
Internet Fundamentals

Electronic Mail : Electronic mail also referred as e-mail is a msg that a person can send to another persons all over the world via internet. It's one of most popular services available through Internet.

In early days of the Internet, email emerged as an inexpensive and efficient means of communication between researchers, scientists and people in high tech jobs.

Advantages of E-mail :

Convenience : There are no trips to the post office and no need to search for stationery and stamps

Speed: It is fast, based on the speed of the underlying communication networking.

Inexpensive : Once you are online, the cost of sending a msg is small.

Printable : A hard copy is easy to obtain using email saves on natural resources. We can keep an electronic copy of a message for your own record.

Reliable : Although message are occasionally lost, this is rare. Many mail servers will notify the sender if an email msg was undeliverable.

Global : Increasingly, people and business all over the world are using e-mail.

Generality : Email is not limited to txt only, it allows the transfer of graphics, prgs and even sounds.

Disadvantages of E-mail:

Misdirection : By typing on incorrect e-mail address you may accidentally send email to an unintended recipient.

Interception : It is possible eavesdroppers may intercept your email message that you don't want the whole world to ____.

Forgery : Email does not preclude forgeries, that is someone impersonating the sender, since the sender is usually not authenticated in any way.

Overload : Email can also be too convenient and result in a flood of mail.

Junk : The flooding of undesirable or inappropriate email is referred as spam is becoming a serious problem.

No response : some recipients may don't read and respond to their email on regular basis.

Subject Name : Internet Fundamentals
Branch :

Subject Code : 208-E
Semester : VIth

Lecture No : 2
Author Name:

User ids : Synonyms for user id are user name and account name. It's the concatenation of the word "user" and the abbreviation "id", standing for identification. Your user id identifies you to the computer.

So, pick as descriptive a name as possible, but one that is also easy to type and associate with you. The upper and lowercase are not significant in email names.

Eg. Mary lamba and mary lamba are treated the same.

Passwords : Password is a secret code that authenticates you to the computer. This is done to check that you are who you say you are. Without having passwords to authenticate users as a security measure, others could gain access to your account and perform unwanted operations.

A good password should :

- Be at least five characters long.
- Contain a non-alphabetical symbol such as & % or !
- Contain a number
- Possess uppercase and lower case letters.

E-mail Addresses :

The basic form of an email address is

Username @ hostname.subdomain.domain

There are some exceptions, but this format covers almost all common address. The txt before the @ sign specifies the username of the individual, while the txt after the @ sign(pronounced "at") indicates how the computer system can locate that individuals mailbox.

Example : maria12@cs.sbit.mdu

Or

maria12@cs.sbit.edu

-The suffix following the @ sign gets more general from left to right. That is, cs is a sub domain of sbit, sbit is a sub domain of edu and edu specifies a top-level domain name. In this case Maria whose Roll-No. is 12 is a computer science student in SBIT.

-The number of periods (a period is pronounced "dot") varies from one email address to another. Most addresses have either one or two dots. For example

abc @ yahoo.com

xyz @ yahoo.com

The generic Top-level Domain Names used in the united states are:

Domain Name

Meaning

- | | |
|-------|-------------------------|
| - Com | Commercial business |
| -edu | Education |
| -gov. | U.S. Government agency |
| -int | International entity |
| -mil | U.S. Military |
| -net | Networking organization |

=> **E-mail address determinations** :

Different methods are available for determining some ones email address .

-Ask the persons directly.

-Use a prog. specially designed for locating people. This usually works best for finding networking or site support staff.

-Go through your browser. Example : Netscape Navigator includes a “people” Button that provides access to a group of white page directories. White pages are like on line phone books.

-Use a program such as finger to verify a guessed address. But be aware that as a security measure, many sites disallow external fingering.

-Use a search engine, such as yahoo! And submit a query on that persons name.

-Use a search engine to determine the primary web server for the site or organization where the persons is located. Then look for directory information on the sites web pages by using a search option at that site.

Subject Name : Internet Fundamentals
Branch :

Subject Code : 208-E
Semester : VIth

Lecture No : 3
Author Name:

Message Components =>

From : abc <abc@ yahoo.com> Tues July 12 11:00 EDT 1987
Date : Tues, Date month year Time (EDT)
To : XYZ @ rediffmail.com
Subject : Jobs related to your profile
CC : rst @ yahoo.co.in

Greeting : Hi Guys,

Text : -----

Signature : Signature of sender it may
be the add. of the sender
or signature

Office :
messages :
fax :
abc @ yahoo.com

Fig : Sample email message

From : Field indicates who sent the message and when

Date : Field repeats the date and includes an interesting feature : the -0400 . This tells us that EDT is four hours behind Greenwich Mean Time (GMT). Greenwich, England, is the location where standard time is kept.

To : Field specifies to whom the message was sent.

Subject : Field specifies or we could say provides a hint as to what the message is about.

CC: Field tells us that the message was “Carbon Copied” to another user.

BCC : Stands for blind carbon copy. BCC is used when we do not want one or more of the recipients to know that someone else was copied on the message.

Greeting : The opening like Hi, Guys, is called the greeting of the message.

Text : The main content or msg. is called the text of the message.

Signature : The final part of the message is known as the signature.

Body : The greeting, text and signature form the body of the message.

E mail Address :

The basic form of an email address is

Username @ hostname. subdomain. domain

Userid to locate mailbox

For eg : abc@ yahoo.co.in---- Top level domain name

Subdomain
of Co

The no. of dots varies from one email address to another. Most addresses have either one or two dots.

A given field in an email address can be of no more than 63 characters long. All fields combined must be of total less than 256 characters.

Domain Names :

Data type for eg : C-defines the types of int, long, short & char as variation on integer if a data type is a part of a larger class then v-say

E mail Header

From : Field indicates who sent the message & when.

Date : Repeats date and an interesting feature like -400. This tells us that the sender's local time is 4 hrs. behind the GMT i.e. Greenwich Mean Time (GMT) Greenwich is the location where standard time is kept. In general, the date field will include a reference to the time zone the sender is in.

To filled specifies to whom the message was sent.

Subject: filed provides a hint as to what the message is about.

CC : Field tells us that the message was “ carbon copied” to another user.

BCC : Blind Carbon Copy : is used when you don't want one or more the recipients to know that someone else was copied on the message. If several recipients are blind carbon copied on a message, no one will know about the others.

Body of Message

Greeting

Text

Signature

Message Composition

- 1) **Structure :** After clicking Compose button or command. The mailer window will be open.

To field : Here you should enter the email address of the person to whom you are sending the message. Rather than going to CC field to enter other email addresses many mailers allow you to enter list of names separated by commas, on this line.

Attachment Field : Where you can specify the file to be attached to the message in the filed.

Subject short description of message. This is your opportunity to grab the attention of your recipient.

Replay

Replay All

Netiquette : Informal rules of network etiquette is netiquettes.

Emoticons : Smiley's used in an informal message are called emoticon that resemble little sideway faces. Typing a message in capital letters is considered shouting and doing so signals that the sender is either are email no voice, very angry, excited or ignorant of the rules of netiquette.

Compositions : For sending email to friends or people you know, simply type in a message you like. But for the people you don't know or with whom you have a little conversation be slightly more formal & proofread your message. While applying for the jobs or communicating with people for the first time, proofread & spell check your message. Many mail _____ have built in spell checker.

Signatures : You can use ur signature i.e. ur nickname or actual name the end of the message.
Or you can use a signature file that consist of

Nickname
Name
Phone no.
Fax no.
Email address
Favorite quote etc.

- but try to limit the size of signature file.

Mailer Features : A Typical Mailer opened in a window will contain a series of buttons with names such as
Compose
Copy
Delete
Edit
File
Forward
Move
Next
Reply
View and so on

Compose , File & Reply

Compose Button typically provides the following features:

- 1) New – Compose a message from scratch
- 2) Reply- Reply to the current message
- 3) Forward – Pass the message on
- 4) Vacation – You are going away & want automatic response to be generated & have email saved.

File: 1) Save : Save the current message into a file on disk.
2) Insert : Includes a file in the body of the message being composed.
3) Exit : Leaves the mailer.
4) Open : Open a file from disk
5) Attach : Appends a file to a message.

Reply : To sender
To all
Forward
Include
Include Bracketed

Bracketed Text & Include : When replying to a message keep in mind that a period of time may have elapsed since you received the message. Thus a reply of yes to a message have no meaning to the recipient. Because the

recipient may not recall the original message. Generally, it is a good idea to include the context of the original text along with your reply. Most mailers do this automatically.

Format may look like.

(Original text from sender) If include option is selected

(Original text from sender) if include bracketed option is selected.

Forwarding : At some point, you may have more than one e-mail address. For example, you might have several different computer accounts. Instead of reading mails from two different accounts, it is often more convenient to have are email directed to only one account. This is usually possible by forwarding are your email from one account to the other & in general directing a no. of email addresses to one. Care must be taken to avoid infinite email loops. For eg-do not forward mails from A/c A to A/c B & also forward mails from B to A. E.g. Just like call divert in Mobiles.

E mail Inner Working

We split the mailing of a letter into three phases

(In comparison to simple mail)

Phase One :

Steps are

- Compose
- Address
- Package
- Stamp
- Deposit

Phase Two

- Retrieves the letter from its place of deposit
- If correctly addressed routed to final destination mailbox.

Phase Three

- Recipient checks for mail
- Retrieves the letters from the mail box.
- Opens the envelope
- Reads the mail
- Files it away

Although the phases in the on-line world are not identical, it is helpful to use the familiar physical setting for analogy. Three main components are necessary for the e-mail system to work.

1. Mailer
2. Mail Server
3. Mailbox

1) Mailer : A mailer is also called a mail program, mail application or mail client. A mailer is the software that allows you to manage, read & compose email.

2) Mail Server : The mail server is a computer whose function is to receive, store & deliver email, conceptually the mail server is always listening for the arrival of new e-mail. If new email has arrived for you, the server keeps track of it. The mailer may be on the same computer that acts as a mail sever.

Mail Boxes :An electronic mailbox is a disk file specifically formatted to hold email messages and information about them. The mailbox is generally created by the system administration whenever a user establishes his account.

Store & Forward Feature : A mail server needs to be running nearly all the time, waiting for email messages and routing them appropriately. If a mail server crashes or it down fo an extended period, email can be lost. Since a pc with an internet connection is generally not turned on all the time, many PC users do not run mail serves locally on their computers. E-mail is very important to people & it is unacceptable for messages to be delayed or discarded. Thus the mail server must be a 7 by 24 machine. It is common for PC users to have their inboxes on a very reliable computer on which the mail server is always running. When email arrives, it is saved for the addressee in the inbox until they “pick it up” by downloading the messages. The save and pickup processes comprise the store & forward function.

But there may be a space limitation on the size of your mailbox. Generally, once this limit is reached, new incoming messages are refused until you free up space by deleting some messages.

How do user obtain their e-mail? POP(Post office protocol) is retrieve their email from a remote location . A protocol is a set of rules that computers use for communicating with one another.

Diagram

Let us suppose A is sending an email message to B. A composes the message on his mail client & then selects the SEND OPTION. The message is routed via the SMTP(simple mail transfer protocol) to B's mail server. Once the message arrives the mail server stores it on the disk in an area designated for B. The disk storage area on a mail server is called (mail spool) which is the store part of store & forward.

Now, B's POP client knows how to communicate with B's mail server. Periodically, it polls the POP server to check if any new email has arrived for B. In this case there is a new message from A. His email is forwarded over the networking to B's PC & stored in her local disk. This is the "forward" in store & forward.

Here the networking connection between B's PC & her mail server is labeled as POP link, since POP was used to bring A's message over.

Diagram

Another Popular Method by which users obtain their email is called a Central mail System. This type of setup is particularly useful if someone is going to be accessing email from multiple computers. Richie has a workstation at his office as well as a PC at home. His mailbox is maintained at a central mail server. Also Richi shares his email account with his son.

Suppose Richi's Son is trying to read the same inbox from home while Richie was reading the mail. Or his son deleted some mail which Richie had not accused. All these issues are resolved by IMAP i.e. Interactive Mail Access Protocol.

The networking connection between Richie's workstation & his mail server is labeled as IMAP link, since IMAP is used to transport messages over this connection. Now Riche's mail remains on this mail server. The email is not brough over to the computer from which he is working. Leaving the mail in a central location allows Richie to access it from several places. If email were forwarded to his workstation, then they would not be accessed from his PC and Vice versa.

One Advantage of IMAP is :

It encrypts the passwords i.e. IMAP encodes the PWD to someone else sniffing the network can't directly obtain his password. This provides higher security than some systems that transmit the password as plaintext.

Bounce Features : When you send an email message, the mailer software sends a copy of it over the internet. The message has to be split up in to small pieces called packets containing appropriate header information and sequence numbers. The sequence no's are needed so the message can be resembled in the correct order. The mailer software sends a copy of it over the Internet. The message has to be split up in to small pieces called packets containing appropriate header information and sequence numbers. The sequence nos are needed so the message can be resembled in the correct order. The mailer uses the destination e-mail address to identify the computer to which the message should be routed. Eventually the message arrives at the recipients inbox. Some

handshaking is needed to make sure the delivery process works smoothly. The receiving end must notify the server that all went according to plan and that the email was delivered properly. This is necessary because email sometimes bounces that is undeliverable.

The major reasons for a bounce are :

- 1) bad user A/c name
- 2) Bad domain name
- 3) Domain name server (DNS) is down.
- 4) Some other malfunction : msg wastoo big and some part missed [:. Every packet takes a different route].

Subject Name : Internet Fundamentals
Branch :

Subject Code : 208-E
Semester : VIth

Lecture No : 5
Author Name:

E-mail Management

Action options
Vacation Programs
Email & business

Action options : User have a no. of options for dealing with message.

- 1) User can delete the msg by just reading the subject line.
- 2) User (Receiver) can save the msg to a file & can read it later.
- 3) User can read , delete after reading, reply it, forward it, reply to all.

Triage

Vacation Programs: A vacation program is one that automatically replies to the user's email. Usually, the program sends a brief reply back to each message the user receives. For the business purposes, it is customary to include the name & telephone nos or email address of someone to contact in the user's absence.

Email & business : When working in a business environment that uses email, it is currently legal for an employer to read all company email. Very few companies actually do read employee's email but they can. A company could maintain backups of all mails for a long period of time. Business sometimes use E-mail filters. The filters can work in both directions, to limit either incoming or outgoing email. The filtering mechanism can examine each message's email address before deciding whether or not to send the mail on . Businesses use e-mail filters to restrict with whom their employees can communicate.

MIME Type (Multipurpose Internet Mail Extension): Originally only plain ASCII text files could be sent via email. Today an email msg may contain an attachment that consists of virtually any type of file. Usually, people refer to ASCII files as text or plain text files and to all other types of files as Binary files. For example, in addition to text, another form of media such as graphics, HTML Code, a spreadsheet document, Video and or a word processor document could also be attached to a message. All that is necessary is that your mailer and the recipients mailer be MIME complaint.

Suppose someone sends you a msg that contains an attachment consisting of an HTML document. If ur mailer has a GUI & is MIME complaint, it may display are icon indicating that the file attachment is an HTML document. In some mailers, if you select the attachment for viewing an HTML previewed is automatically launched that renders the HTML document for you. You don't have to save the document & then run a program to review the document; the mailer taker care of everything for you. But some security problems exist with MIME for eg- you receive an email msg that has an attached MS word file. Suppose you mailer configured accordingly when you select the attachment to view, your mailer will open up the word Document for you. If a clever, malicious user sent for the message, they may have included one of the many MS word macro viruses. At this point it is possible that the introducing program can infect your files. Because of this and other similar security problems, some locations are reluctant to support MIME. To avoid this problem, you can have your mailer save attachment to disk & then run a virus check on them before opening the files.

Newsgroup : A news group is a discussion group in which computers users throughout the world participate. Users interested in a particular topic may subscribe to the same newsgroup. Boundaries such as age, gender & background generally do no play & role in the discussion, since users only see messages from each other.

Mailing List : A mailing list is a group of users with a shared interest whose email address are collected in an electronic list that can be used to send email to each number on the list. The key to mailing list is a program called a list server which receives and distributes postings and automatically manages subscriptions.

For mailing list a user posts a message to a special mailing list program called the list server, which has the email addresses of all the user subscribed to the list. The list management program then distributes the message to each member on the list via e-mail.

Terminology

Article : The msg written & sent to a newsgroup.

Follow up : An article that is posted in response to a previous news group article.

Subscribe : The procedure you follow to add ur id to a mailing list.

Subscriber : A person whose email id is on an electronic mailing list. They will receive all posts to the list.

List owner : The person in charge of mailing list.