

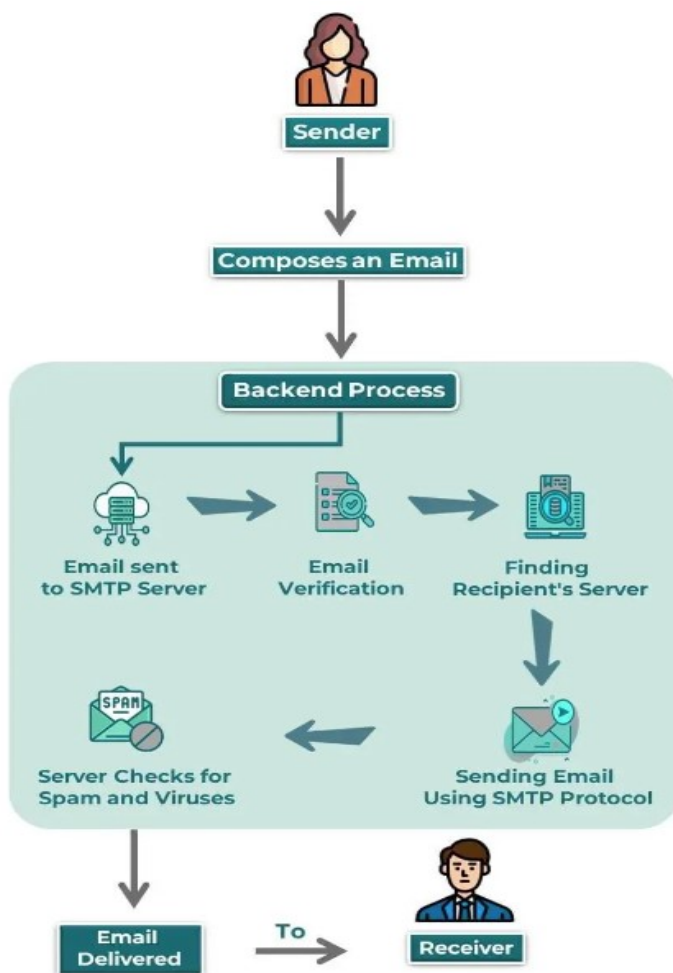
UNIT-II

E-MAIL

Definition of E-mail: **(electronic mail)**

E-mail is defined as the transmission of messages on the Internet. It is one of the most commonly used features over communications networks that may contain text, files, images, or other attachments. Generally, it is information that is stored on a computer sent through a network to a specified individual or group of individuals.

Back in the 1970s, people communicated mainly through letters and telegrams, which could take a long time to reach their destination. But then came electronic communication, which revolutionized how people communicate with each other. This new form of communication is what we now know as "Email".



When a person clicks on the "send" button after composing an electronic mail, it goes through many steps to reach the person you sent it to. Here's how it works:

Step 1: Compose an Email

You log in to your email account and write an email using a computer or phone.

Step 2: Email sent to SMTP Server

When you click “send,” your email goes to a special server called an “SMTP” server.

Step 3: Email Verification

The SMTP server checks your email to ensure it follows the rules before sending it.

Step 4: Finding Recipient’s Server

The SMTP server finds the server where the person you sent the email to has their account.

Step 5: Sending Email using SMTP Protocol

The SMTP server sends your email to that server using something called the “SMTP protocol.”

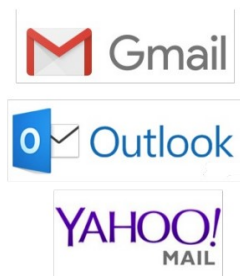
Step 6: Server Checks for Spam and Viruses

The server that got your email checks it for spam and viruses before deciding whether to put it in the person’s email inbox, promotions section, social section, or spam.

Step 7: Email Delivery to Recipient’s Inbox

The person gets an alert that they have a new email in their inbox, and they can read it on their computer or phone.

Examples:



Advantages and Disadvantages:

Uses of Email

- Email is useful because you can contact people anytime, and they can respond on their own schedule.
- It’s a respectful way to communicate without interrupting someone’s day.
- In the past, contacting someone far away was expensive and time-consuming. Now, with email, anyone with an internet connection can stay in touch with just a click.
- Emails are versatile and can be useful for many purposes, like sharing updates, instructions, or directions.
- They are also useful for educational purposes, such as applying for admission or receiving job offers.

Advantages

- Allows for easy referencing and storing of messages and files

- Environmentally friendly and paperless
- Mass sending of messages to multiple recipients simultaneously
- Provides a faster means of communication with instant access to information and files
- Easy to filter and prioritize messages
- Can include multimedia content
- A secure and reliable method of delivering messages

Disadvantages

- Potential for information overload and messages left unread
- Lack of personal touch and potential for misunderstandings
- Disruptive to work and requires constant maintenance
- Possibility of containing viruses and spam
- Requires timely responses and can lead to misunderstandings
- Informal method of communication that cannot manage documents requiring signatures
- Access to the Internet is not universally available
- Limited emotional expression
- Requires checking inbox regularly to stay updated.

Advantages of Email

There are many advantages of email, which are as follows:

- **Cost-effective:** Email is a very cost-effective service to communicate with others as there are several email services available to individuals and organizations for free of cost. Once a user is online, it does not include any additional charge for the services.
- Email offers users the benefit of accessing email from anywhere at any time if they have an Internet connection.
- Email offers you an incurable communication process, which enables you to send a response at a convenient time. Also, it offers users a better option to communicate easily regardless of different schedules users.

- **Speed and simplicity:** Email can be composed very easily with the correct information and contacts. Also, minimum lag time, it can be exchanged quickly.
- **Mass sending:** You can send a message easily to large numbers of people through email.
- Email exchanges can be saved for future retrieval, which allows users to keep important conversations or confirmations in their records and can be searched and retrieved when they needed quickly.
- Email provides a simple user interface and enables users to categorize and filter their messages. This can help you recognize unwanted emails like junk and spam mail. Also, users can find specific messages easily when they are needed.
- As compared to traditional posts, emails are delivered extremely fast.
- Email is beneficial for the planet, as it is paperless. It reduces the cost of paper and helps to save the environment by reducing paper usage.
- It also offers a benefit to attaching the original message at the time you reply to an email. This is beneficial when you get hundreds of emails a day, and the recipient knows what you are talking about.
- Furthermore, emails are beneficial for advertising products. As email is a form of communication, organizations or companies can interact with a lot of people and inform them in a short time.

Disadvantages of Email

- **Impersonal:** As compared to other forms of communication, emails are less personal. For example, when you talk to anyone over the phone or meeting face to face is more appropriate for communicating than email.
- **Misunderstandings:** As email includes only text, and there is no tone of voice or body language to provide context. Therefore, misunderstandings can occur easily with email. If someone sends a joke on email, it can be taken seriously. Also, well-meaning information can be quickly typed as rude or aggressive that can impact wrong. Additionally, if someone types with short abbreviations and descriptions to send content on the email, it can easily be misinterpreted.
- **Malicious Use:** As email can be sent by anyone if they have an only email address. Sometimes, an unauthorized person can send you mail, which can be harmful in terms of stealing your personal information. Thus, they can also use email to spread gossip or false information.
- **Accidents Will Happen:** With email, you can make fatal mistakes by clicking the wrong button in a hurry. For instance, instead of sending it to a single person, you can accidentally send sensitive information to a large group of people. Thus, the information can be disclosed, when you have clicked the wrong name in an address list. Therefore, it can be harmful and generate big trouble in the workplace.

- **Spam:** Although in recent days, the features of email have been improved, there are still big issues with unsolicited advertising arriving and spam through email. It can easily become overwhelming and takes time and energy to control.
- **Information Overload:** As it is very easy to send email to many people at a time, which can create information overload. In many modern workplaces, it is a major problem where it is required to move a lot of information and impossible to tell if an email is important. And, email needs organization and upkeep. The bad feeling is one of the other problems with email when you returned from vacation and found hundreds of unopened emails in your inbox.
- **Viruses:** Although there are many ways to travel viruses in the devices, email is one of the common ways to enter viruses and infect devices. Sometimes when you get a mail, it might be the virus come with an attached document. And, the virus can infect the system when you click on the email and open the attached link. Furthermore, an anonymous person or a trusted friend or contact can send infected emails.
- **Pressure to Respond:** If you get emails and you do not answer them, the sender can get annoyed and think you are ignoring them. Thus, this can be a reason to make pressure on your put to keep opening emails and then respond in some way.
- **Time Consuming:** When you get an email and read, write, and respond to emails that can take up vast amounts of time and energy. Many modern workers spend their most time with emails, which may be caused to take more time to complete work.
- **Overlong Messages:** Generally, email is a source of communication with the intention of brief messages. There are some people who write overlong messages that can take much time than required.
- **Insecure:** There are many hackers available that want to gain your important information, so email is a common source to seek sensitive data, such as political, financial, documents, or personal messages. In recent times, there have various high-profile cases occurred that shown how email is insecure about information theft.

User Ids, Passwords, E-mail Addresses:

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:

- **Login ID**
- **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.

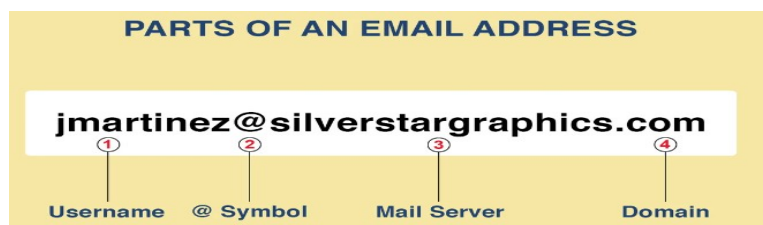
- **Password** To prevent other people from using your account via your userid, you are required to have a password. A password allows you and only you to access the computer system through your userid. It basically proves to the computer system that you are who you say you are. So it should be obvious 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.

E-Mail Address

Each user of email is assigned a unique name for his email account. This name is known as E-mail address. Different users can send and receive messages according to the e-mail address.

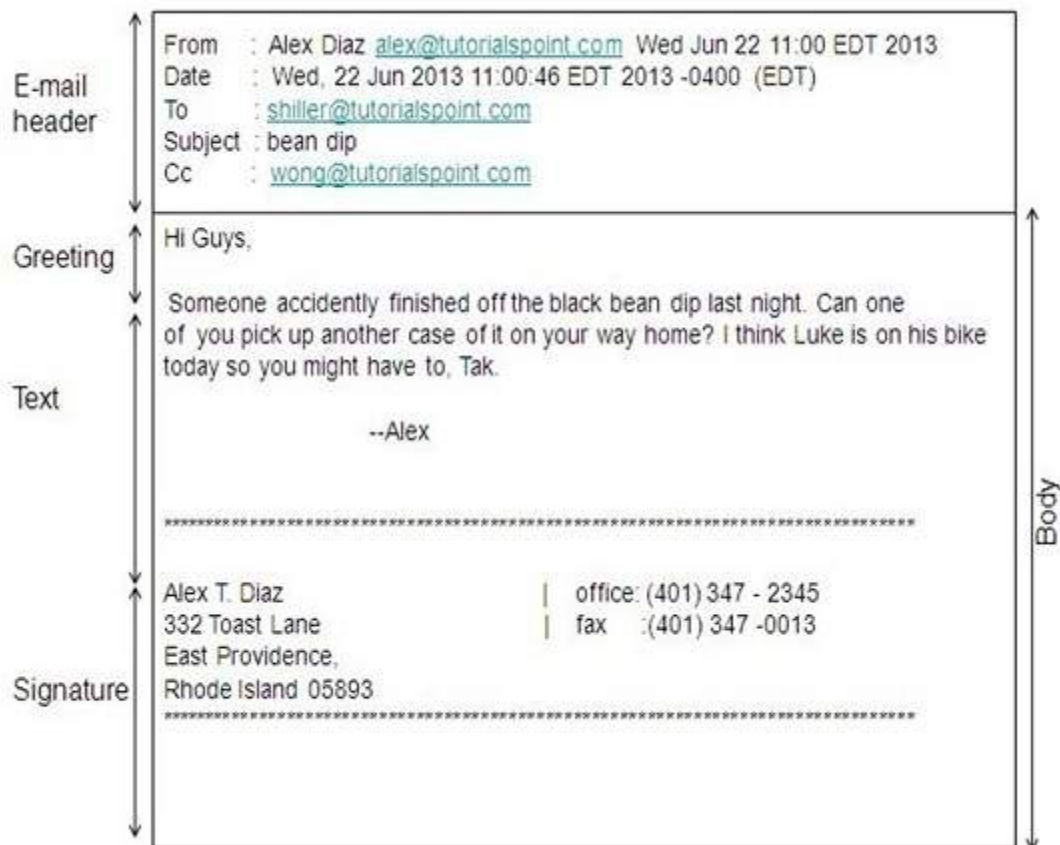
E-mail is generally of the form username@domainname. For example, webmaster@tutorialspoint.com is an e-mail address where webmaster is username and tutorialspoint.com is domain name.

- The username and the domain name are separated by @ (at) symbol.
- E-mail addresses are not case sensitive.
- Spaces are not allowed in e-mail address.



E-mail Message Components:

E-mail message comprises of different components: E-mail Header, Greeting, Text, and Signature. These components are described in the following diagram:



E-mail Header

The first five lines of an E-mail message is called E-mail header. The header part comprises of following fields:

- From
- Date
- To
- Subject
- CC
- BCC

From

The **From** field indicates the sender's address i.e. who sent the e-mail.

Date

The **Date** field indicates the date when the e-mail was sent.

To

The **To** field indicates the recipient's address i.e. to whom the e-mail is sent.

Subject

The **Subject** field indicates the purpose of e-mail. It should be precise and to the point.

CC

CC stands for Carbon copy. It includes those recipient addresses whom we want to keep informed but not exactly the intended recipient.

BCC

BCC stands for Black Carbon Copy. It is used when we do not want one or more of the recipients to know that someone else was copied on the message.

Greeting

Greeting is the opening of the actual message. Eg. Hi Sir or Hi Guys etc.

Text

It represents the actual content of the message.

Signature

This is the final part of an e-mail message. It includes Name of Sender, Address, and Contact Number.

The main components of an email message

A mail message transfer agent is software that transfers emails between the computers of a sender and a recipient. No two email addresses can be identical, as each complete address must be unique.

Typically, an email message consists of two main components: header and body.

Header

Each email message comes with a header that's structured into various fields. These fields contain important information regarding the sender and the recipient(s). However, the content of the email header varies, depending on the email system being used.

Typically, an email header contains the following information:

- **Subject.** This provides a summary of the message topic and is displayed in a separate line above the message body. For example, a subject line might say "Company mission statement" or "Employee Stock Purchase Plan."
- **Sender (From).** This field is the sender's email address. A display name can also be shown instead if it's associated with the email address. Most email clients fill out this field automatically.
- **Date and time received (On).** This field shows the local time and date when the message was composed. It's a mandatory header field that's filled automatically by most email clients.

- **Reply-to.** If a user clicks on the **Reply** button, this field automatically populates the message with the sender's email address, which now becomes the "recipient."
- **Recipient (To).** This field shows the first and last name of the email recipient, as configured by the sender.
- **Recipient email address.** This is the email address of the recipient or where the message was sent.
- **Carbon copy (CC).** The carbon copy field includes the email addresses of the people who need to receive the email but aren't expected to reply. When a person presses **Reply All**, all of the CC addresses receive the response.
- **Blind carbon copy (BCC).** If a sender doesn't want their recipient to find out who else received the email, they could use the BCC field to enter those addresses. The addresses in the BCC list don't receive responses when someone presses **Reply All**.
- **Attachments.** This field contains any files that are attached to the message.

Body

This is the content of the email. It may contain anything the user wishes to send, including text, videos or file attachments. Depending on the email client used, the email body can be formatted in either plain text or HTML. While plain text messages can't contain special formatting or multimedia elements, HTML emails enable special formatting and inclusion of multimedia options within the body of the message. The message body may also include signatures or automatically generated text that the sender's email system inserts.

Domain Name System(DNS):

When **DNS** was not into existence, one had to download a **Host file** containing host names and their corresponding IP address. But with increase in number of hosts of internet, the size of host file also increased. This resulted in increased traffic on downloading this file. To solve this problem the DNS system was introduced.

Domain Name System helps to resolve the host name to an address. It uses a hierarchical naming scheme and distributed database of IP addresses and associated names

IP Address

IP address is a unique logical address assigned to a machine over the network. An IP address exhibits the following properties:

- IP address is the unique address assigned to each host present on Internet.
- IP address is 32 bits (4 bytes) long.
- IP address consists of two components: **network component** and **host component**.

- Each of the 4 bytes is represented by a number from 0 to 255, separated with dots. For example 137.170.4.124

IP address is 32-bit number while on the other hand domain names are easy to remember names. For example, when we enter an email address we always enter a symbolic string such as webmaster@tutorialspoint.com.

Uniform Resource Locator (URL)

Uniform Resource Locator (URL) refers to a web address which uniquely identifies a document over the internet.

This document can be a web page, image, audio, video or anything else present on the web.

For example, **www.tutorialspoint.com/internet_technology/index.html** is an URL to the index.html which is stored on tutorialspoint web server under internet_technology directory.

URL Types

There are two forms of URL as listed below:

- Absolute URL
- Relative URL

Absolute URL

Absolute URL is a complete address of a resource on the web. This completed address comprises of protocol used, server name, path name and file name.

For example `http://www.tutorialspoint.com/internet_technology/index.htm`. where:

- **http** is the protocol.
- **tutorialspoint.com** is the server name.
- **index.htm** is the file name.

The protocol part tells the web browser how to handle the file. Similarly we have some other protocols also that can be used to create URL are:

- FTP
- https
- Gopher
- mailto
- news

Relative URL

Relative URL is a partial address of a webpage. Unlike absolute URL, the protocol and server part are omitted from relative URL.

Relative URLs are used for internal links i.e. to create links to file that are part of same website as the WebPages on which you are placing the link.

For example, to link an image on tutorialspoint.com/internet_technology/internet_referemce_models, we can use the relative URL which can take the form like **/internet_technologies/internet-osi_model.jpg**.

Difference between Absolute and Relative URL

Absolute URL	Relative URL
Used to link web pages on different websites	Used to link web pages within the same website.

Difficult to manage.	Easy to Manage
Changes when the server name or directory name changes	Remains same even if we change the server name or directory name.
Take time to access	Comparatively faster to access.

Domain Name System Architecture

The Domain name system comprises of **Domain Names, Domain Name Space, Name Server** that have been described below:

Domain Names

Domain Name is a symbolic string associated with an IP address. There are several domain names available; some of them are generic such as **com, edu, gov, net** etc, while some country level domain names such as **au, in, za, us** etc.

The following table shows the **Generic** Top-Level Domain names:

Domain Name	Meaning
Com	Commercial business
Edu	Education
Gov	U.S. government agency
Int	International entity
Mil	U.S. military
Net	Networking organization
Org	Non profit organization

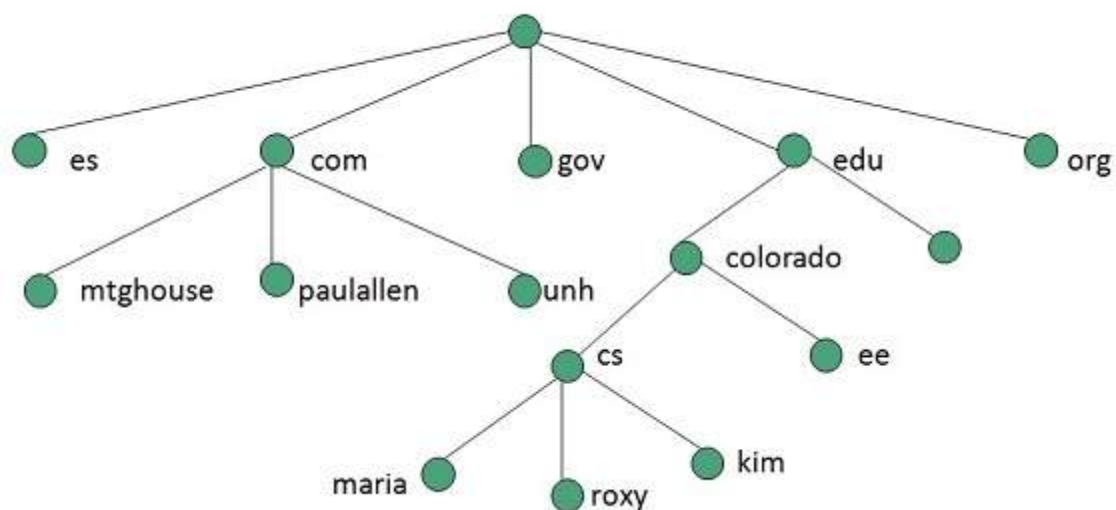
The following table shows the **Country top-level** domain names:

Domain Name	Meaning
au	Australia
in	India
cl	Chile

fr	France
us	United States
za	South Africa
uk	United Kingdom
jp	Japan
es	Spain
de	Germany
ca	Canada
ee	Estonia
hk	Hong Kong

Domain Name Space

The domain name space refers a hierarchy in the internet naming structure. This hierarchy has multiple levels (from 0 to 127), with a root at the top. The following diagram shows the domain name space hierarchy:



In the above diagram each subtree represents a domain. Each domain can be partitioned into sub domains and these can be further partitioned and so on.

Types of Name Servers

Following are the three categories of Name Servers that manages the entire Domain Name System:

- Root Server
- Primary Server
- Secondary Server

Root Server

Root Server is the top level server which consists of the entire DNS tree. It does not contain the information about domains but delegates the authority to the other server

Primary Servers

Primary Server stores a file about its zone. It has authority to create, maintain, and update the zone file.

Secondary Server

Secondary Server transfers complete information about a zone from another server which may be primary or secondary server. The secondary server does not have authority to create or update a zone file.

Mailer's:

E-mail System

E-mail system comprises of the following three components:

- Mailer
- Mail Server
- Mailbox

Mailer

It is also called **mail program**, **mail application** or **mail client**. It allows us to manage, read and compose e-mail.

Mail Server

The function of mail server is to receive, store and deliver the email. It is must for mail servers to be Running all the time because if it crashes or is down, email can be lost.

Mailboxes

Mailbox is generally a folder that contains emails and information about them.

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.

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:

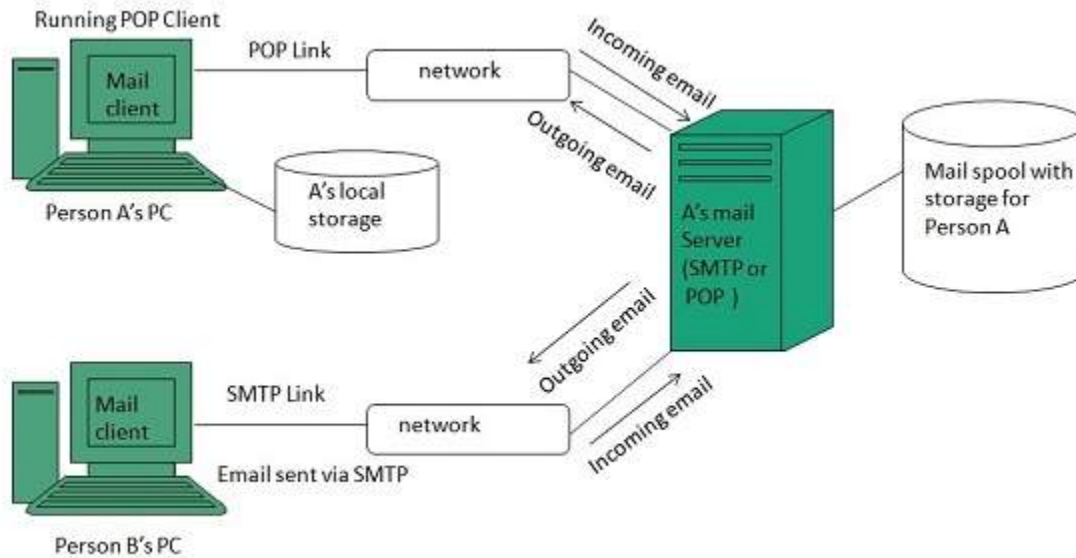
- Suppose person A wants to send an email message to person B.
- Person A composes the messages using a mailer program i.e. mail client and then select Send option.
- The message is routed to **Simple Mail Transfer Protocol** to person B's mail server.
- The mail server stores the email message on disk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

The disk space area on mail server is called mail spool.

- Now, suppose person B is running a POP client and knows how to communicate with B's mail server.

- It will periodically poll the POP server to check if any new email has arrived for B. As in this case, person B has sent an email for person A, so email is forwarded over the network to B's PC. This message is now stored on person B's PC.

The following diagram gives pictorial representation of the steps discussed above:



Message composition in email:

You can compose and send your email messages as soon as you write them; compose a draft and return to it later to finish and send, or compose the message and specify a time in the future to send the message.

You can customize your options for composing messages in your **Preferences>Mail** page.

Composing a new email message

Depending on your mail preferences, when you click New Message either a Compose tab appears in the Application toolbar or the compose page opens in a separate window.

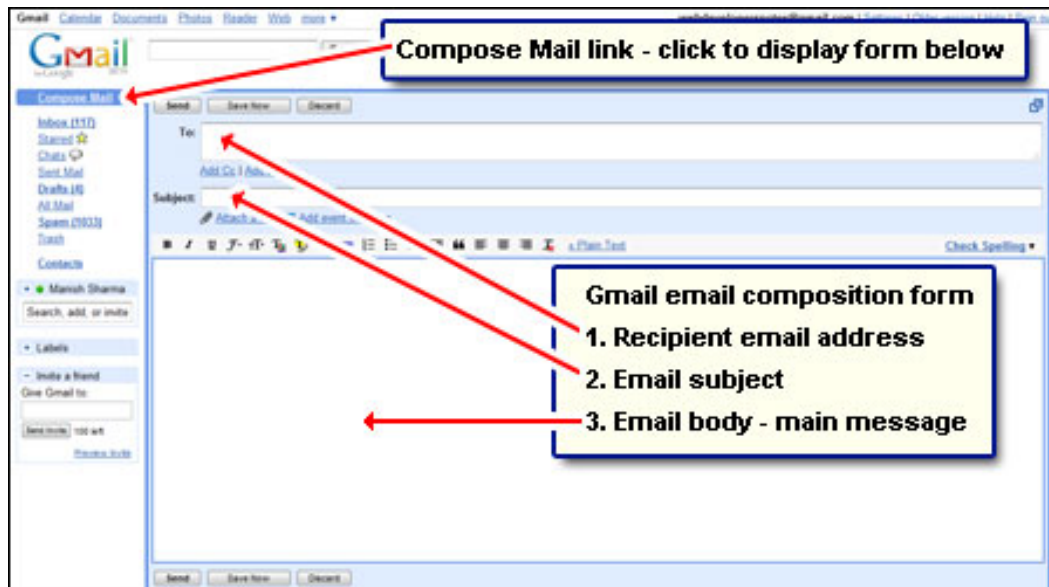
1. In the Mail tab click **New Message**.
2. In the **To** text box, enter the email addresses of the person or persons to whom you are sending the message. Either type the address or click **To** to search through your contacts or the global address list.

Note: You can drag and drop the address bubble in the text box to the Cc or Bcc text boxes, and you can copy the address bubble by clicking CTRL+c. The Bcc field is available from the Options dropdown menu.

3. If you have more than one email identity (also known as a persona) configured, **From** is displayed above the **To:** field. Select the identity to use for this email.
4. (Optional) In **Options**, click **Signature** and select the signature that should be added to the message.
5. (Optional) To send a copy of the email to other recipients (Cc) or to send a blind copy (Bcc) without the recipient's knowledge, enter email addresses in the Cc and Bcc fields.

Note: You can send a message without an address in the To field if there is an address in either the Cc or Bcc field.

6. In the **Subject** field, tell the recipient what the message is about.
7. Click **Send** to send the email message.



Mail management in email:

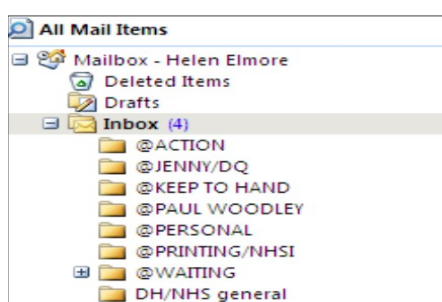
Email management is a specific field of communications management for managing high volumes of inbound electronic mail received by organizations. Today, email management is an essential component of customer service management. Customer service call centers currently employ email response management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

7 STRATEGIES for MANAGING EMAIL:

1) Find an organizational system that works for you. Some people prefer a detailed folder system based on topic, while others prefer a simplified system based on what response the email needs. Take time to experiment and figure out what works best for you.

EXAMPLE 1: Create folders or Gmail labels based on topic.

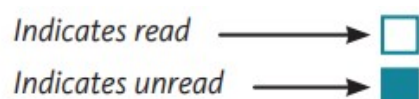
EXAMPLE 2: Create folders or Gmail labels based on email status and next steps.



2) Use filters. Once you set a filter, it automatically carries out the organizational task—like moving all Canvas notifications to a “Canvas” folder. Some email clients call this “Rules.” In Gmail, you can create filters using the function in the search window’s menu options .



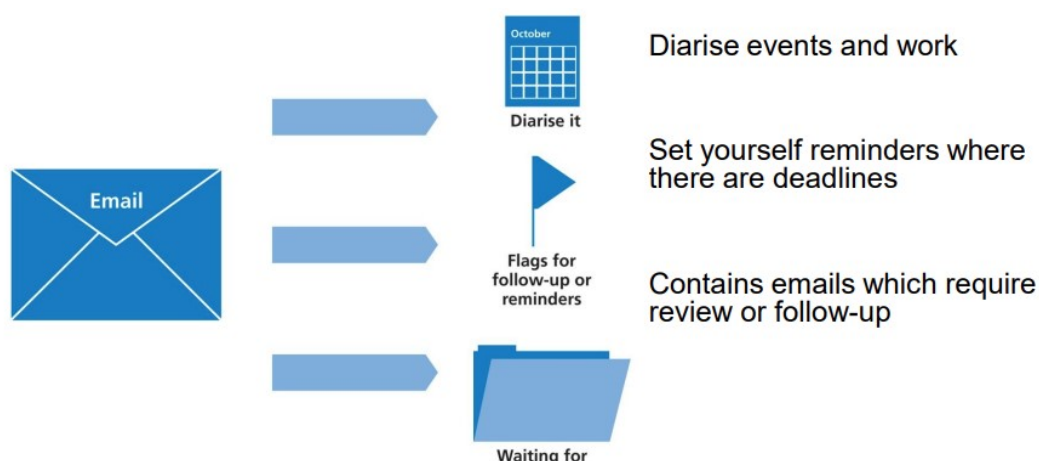
3) Mark emails as read/unread. An open box, envelope, or bullet point indicates an email has been read. Only mark email as “read” if you have read it and decided what folder to move it to or what action is required. In Gmail, you can right click on a message to mark the email as read or unread. You can also access this function through each email’s more options area, illustrated by three dots:



4) Use the task tool, and then move emails out of the inbox. Flagging an email as a task creates an action item in your tasks list. In Gmail, you can add tasks to your to-do list or create calendar entries. The task panel in the right sidebar will then contain the task with a link to the original email.

5) Set specific times to read and respond to emails just like you would for other important tasks. It may help to set up 2- 3 short time blocks (e.g., 15-30 min) throughout the day and to set an additional time weekly to delete/archive old email. If possible, avoid checking email constantly, as this can increase stress and distractions

6) When you need to focus on other activities, turn off email notifications to reduce distractions. This is less a strategy about managing your email and more a strategy about not letting your email manage you. In addition to shutting off notifications, you can also close-out your email client in order to focus your full attention on the task at hand. Then, when you’re finished with your activity, remember to turn email notifications back on!



7) Plan to incorporate email into your other time management tools. For example, you might include email time on your weekly calendar or flag emails and note the follow-up tasks in your weekly to-do list.



G-Suite (Google Suite): G Suite Basic edition is a suite of collaborative productivity apps that offers your business professional email, shared calendars, online document editing and storage, video meetings, and much more.

Google Drive, Google documents, Google spread sheets, Google slides, and Google forms.

G Suite



Drive



Docs



Sheets



Slides



Forms



Calendar



Sites



Jamboard



Google Meet



Google Chat



Google Colab

A

DRIVE



Store, organize, and create sharable links to your files using Google Drive. New Google Docs, Sheets, Slides, or Forms that you create are automatically stored in Google Drive, and you can upload your own files to Google Drive and use the unlimited cloud storage and collaboration tools from any computer or mobile device.

By default, the new files and folders that you create in Google Drive are private to you. You can choose to share files or entire folders with specific people if you wish. You can also create links to your files that are useable by anyone with a University of Florida Gatorlink, to anyone that receives the link, or you can share the files publicly on the web.

Types of Google Docs

- **Google documents (Docs)** - an online word processor to create and format text documents.
- **Google spreadsheets (Sheets)** - is an online spreadsheet application to create and format spreadsheets and charts.

Google presentations (Slides) - is an online presentations editor to create visual presentations and shows.

DOCS, SHEETS, AND SLIDES



Use Google Docs, Sheets, and Slides to create, review, and collaborate in real-time on documents, spreadsheets, and presentations. Files that you create using these tools are automatically saved in Google Drive and can be exported in formats that are compatible with Microsoft Office products.

FORMS



Use Google Forms to create surveys or questionnaires that have their responses saved as a Google Sheet automatically. Google Forms allows you to collect data and analyze responses in an easy fashion.

If you are collecting data for institutional research purposes, consider using Qualtrics, especially if Restricted Data is involved, and be sure to work in accordance with the policies of UF Integrated Risk Management and the Institutional Review Board.

CALENDAR



Use Google Calendar to keep track of personal and academic deadlines in a private calendar, or create and share joint calendars to make sure that your group, class, or team is on the same schedule.

SITES



Google Sites is straightforward website builder that can be used to host your work, showcase an e-portfolio, or provide access to information that you want to make available to the public.

JAMBOARD



Collaborate in real-time on a virtual whiteboard from your computer, tablet, or mobile device. Jamboard supports touch for seamless writing, and Jamboard sessions are automatically saved in Google Drive for later viewing.

GOOGLE MEET



Use Google Meet to video chat with colleagues and group members. With Google Meet you can create rooms and present your screen to attendees. If you need to be able to record your meeting, though, UFIT recommends using [Zoom](#) as our license of Google Meet does not allow for recording.

GOOGLE CHAT



Use Google Chat to send direct messages to others or start group conversations. Separate chat rooms can be created to keep your conversations separate. Google Chat allows you to collaborate, share files, and maintain a persistent conversation so that your team or group can stay on task.

GOOGLE COLABORATORY



Google Colaboratory, or “Colab” for short, is a product from Google Research. Colab allows UF faculty, staff, and students to write and execute Python code in the browser, and it is especially well suited to machine learning, data science, and education projects. Google Colab notebooks are Jupyter Notebooks that are hosted by Google. Google Colab Pro and Pro+ are premium tiers of Google Colab that require separate payment. If you need more hardware resources for your project, consider working with UFIT Research Computing for competitively priced and secure computing resources.

