

Chapter 12

Web & Electronic mail

12.1 WWW (WORLD WIDE WEB)

The World Wide Web is basically an information space where the documents and the web resources are identified by the Uniform Resource Locators (URLs) having interlinks known as hyperlinks which can be accessed via Internet. . English scientist Tim Berners-Lee invented the World Wide Web in 1989. He wrote the first web browser computer program in 1990 while employed at CERN in Switzerland. Web pages are primarily text documents formatted and annotated with Hypertext Markup Language (HTML). In addition to formatted text, web pages may contain images, video, audio, and software components.

12.2 WEBSITES

A website is a collection of web pages that are the documents that are accessed through the Internet. A web page can contain any type of information, and can include text, colour, graphics, animation and sound. A web site may be accessible via a public Internet Protocol (IP) network, such as the Internet, or a private local area network (LAN), by referencing a uniform resource locator (URL) that identifies the site. Generally, people look at websites for two primary reasons:

- To find information they need. Like for finding the latest stock quotes, for getting the address of the nearest Thai restaurant.
- To complete a task. Visitors may want to buy the latest best-seller, download a software program, or participate in an online discussion about a favourite hobby.

Websites have many functions and can be used in various fashions; a website can be a personal website, a commercial website for a company, a government website or a non-profit organization website.

12.3 WEB BROWSERS

A Web Browser is a software application used to locate, retrieve and display content on the World Wide Web, including Web pages, images, video and other files. As a client/server model, the browser is the client run on a computer that contacts the Web server and requests information. The Web server sends the information back to the Web browser which displays the results on the computer or other Internet-enabled device that supports a browser. The first web browser was invented in 1990 by Sir Tim Berners-Lee. Berners-Lee is the director of the World Wide Web Consortium (W3C), which oversees the Web's continued development, and is also the founder of the World Wide Web Foundation. His browser was called World Wide Web and later renamed Nexus. The first commonly available web browser with a graphical user interface was Erwise.

In 1993, browser software was further innovated by Marc Andreessen with the release of Mosaic, "the world's first popular browser" which made the World Wide Web system easy to use and more accessible to the average person. Microsoft responded with its Internet Explorer in 1995, also heavily influenced by Mosaic, initiating the industry's first browser war.



Mostly major web browsers have these user interface elements in common

- ☐ Back and forward buttons to go back to the previous resource and forward respectively.
- ☐ A refresh or reload button to reload the current resource.
- ☐ A stop button to cancel loading the resource. In some browsers, the stop button is merged with the reload button.
- ☐ A home button to return to the user's home page.
- ☐ An address bar to input the Uniform Resource Identifier (URI) of the desired resource and display it.
- ☐ A search bar to input terms into a web search engine. In some browsers, the search bar is merged with the address bar.
- ☐ A status bar to display progress in loading the resource and also the URI of links when the cursor hovers over them, and page zooming capability.
- ☐ The viewport, the visible area of the webpage within the browser window.
- ☐ The ability to view the HTML source for a page.

12.4 INTERNET EXPLORER

Internet Explorer (formerly Microsoft Internet Explorer and Windows Internet Explorer, commonly abbreviated IE or MSIE) is a discontinued series of graphical web browsers developed by Microsoft and included as part of the Microsoft Windows line of operating systems, starting in 1995. It was first released as part of the add-on package Plus! for Windows 95 that year. Later versions were available as free downloads, or in service packs, and included in the original equipment manufacturer (OEM) service releases of Windows 95 and later versions of Windows. Other famous web browsers are Google Chrome developed by Google, Mozilla Firefox by open source community and also safari, opera etc.

12.5 THE URL ADDRESS

URL is the abbreviation of Uniform Resource Locator. It is the global address of documents and other resources on the World Wide Web. For example, www.webopedia.com is a URL. A URL is one type of Uniform Resource Identifier (URI). The generic term for all types of names and addresses that refer to objects on the World Wide Web.

URL is divided into two parts:

The first part of the URL is called a *protocol* identifier and it indicates what protocol to use, and the second part is called a resource name or resource identifier and it specifies the IP address or the domain name where the resource is

located. The protocol identifier and the resource name are separated by a colon and two forward slashes. For example:

<http://www.webopedia.com/>

For example, in the above URL first part `http://` is a protocol identifier and the second part `www.webopedia.com/` is the resource name where resource is located.

12.6 SURFING THE INTERNET

Search on Internet

Internet search engines are a big part of how we find things online. You can get the most out of them by learning how they work, and how to use them quickly and effectively. The challenge is to ask your question the right way, so that you don't end up overwhelmed with too many search results, underwhelmed with too few, or simply unable to locate the material that you need. As with most skills, practice makes perfect! Before doing a search, it's important to define your topic as completely and succinctly as possible. Write down exactly what information you're looking for, why you're looking for it, and what you're not looking for. This will help you to discover the best keywords for your search.

Keywords

Search engines don't read sentences the way people do: instead, they look for the key words in your query in the websites they search. In other words, you're not asking a search engine a question, you're asking it to look for websites where those words appear. In order to use a search engine or database effectively, therefore, you need to be able to choose the best combination of key words. Most search engines work best if you provide them with several keywords. So how do you determine which keywords will work best? Think about what you're searching to determine the essential key words. For instance, if you're just looking for a recipe for peanut butter cookies, you can write peanut butter cookie recipe. But if you're looking for a recipe that doesn't use flour, you can write peanut butter cookie recipe flourless (the order of the words doesn't matter) and if you want a flourless recipe that uses natural peanut butter you can write peanut butter cookie recipe flourless natural.

Now you have your keywords. How do you enter them into the search engine?

1. **Use of Phrases:** Your most powerful keyword combination is the phrase. Phrases are combinations of two or more words that must be found in the documents you're searching for in the EXACT order shown. You enter a

phrase - such as “peanut butter” - into a search engine, within quotation marks. Most search engines allow you to use quotation marks or square brackets to do a phrase search as in “peanut butter” or [peanut butter].

2. **Limiting your search:** If you find that you’re getting results that aren’t what you’re looking for, you can use a minus sign to exclude results that include a certain word or phrase. So if you want recipes that use peanut butter but aren’t cookie recipes, you could use “peanut butter” recipe – cookie (the minus sign has to be directly before the word you want excluded, with no space in between). You can also limit your search by type, time or country. Most search engines have tabs at the top that let you choose between websites, images, videos, news stories, and so on. Many also have advanced search tools that let you limit your search to just one country, a certain time (the last day, week, month, year, or a range you specify).
3. **Searching within a site:** If there’s a particular site that you know is reliable, most search engines will let you limit your search to just them. Just add the web address at the end of your search string, like this: peanut butter cookie recipe flourless natural site: **www.epicurious.com**. (Make sure not to put a space between sites: and the web address).
4. **Uploading and Downloading:** Uploading means data is being sent from your computer to the Internet. Examples of uploading include sending email, posting photos on a social media site and using your webcam. Even clicking on a link on a web page sends a tiny data upload. Downloading means your computer is receiving data from the Internet. The File Transfer Protocol (FTP) is the Internet protocol for downloading and uploading files and a number of special applications can furnish FTP services for you. (However, if you are downloading through a Web page, the FTP request is set up for you by the Web page. You are usually asked where you want the downloaded file placed on your hard disk, and then the downloading transmission takes place.) When you send an attached file with an e-mail note, this is just an attachment, not a download or an upload. In practice, many people use "download" and "upload" rather indiscriminately so you just have to understand the context. For example, if someone says to you "Download (or upload) such--and-such a file to me by e-mail," They clearly mean "Send it to me as an attachment."

12.7 CHATTING ON INTERNET

Online chat may refer to any kind of communication over the Internet that offers a real-time transmission of text messages from sender to receiver. Chat messages are generally short in order to enable other participants to respond quickly. Thereby, a feeling similar to a spoken conversation is created, which distinguishes chatting from other text-based online communication forms such as Internet forums and email. Online chat may address point-to-point communications as well as multicast communications from one sender to many receivers and voice and video chat, or may be a feature of a web conferencing service. The first online chat system was called Talkomatic, created by Doug Brown and David R. Woolley in 1973 on the PLATO System at the University of Illinois. It offered several channels, each of which could accommodate up to five people, with messages appearing on all users' screens character-by-character as they were typed. Talkomatic was very popular among PLATO users into the mid-1980s. In 2014, Brown and Woolley released a web-based version of Talkomatic.

The first online system to use the actual command "chat" was created for The Source in 1979 by Tom Walker and Fritz Thane of Dialcom, Inc. The first transatlantic Internet chat took place between Oulu, Finland and Corvallis, Oregon in February 1989. The first dedicated online chat service that was widely available to the public was the CompuServe CB Simulator in 1980, created by CompuServe executive Alexander "Sandy" Trevor in Columbus, Ohio. Ancestors include network chat software such as UNIX "talk" used in the 1970s.

12.8 CONFERENCING ON INTERNET

Conferencing brings together groups of people to share their experiences, knowledge, and expertise. Traditional conferences have required that people share the same physical space, time. With the advent of technology, and telecommunications, conferences no longer require a shared physical space, but still require a coordinated time for participants to meet. This activity introduces you to the basics of Internet conferencing, the types of conferencing tools available, background on how conferencing is supported on the Internet, and links to more information.

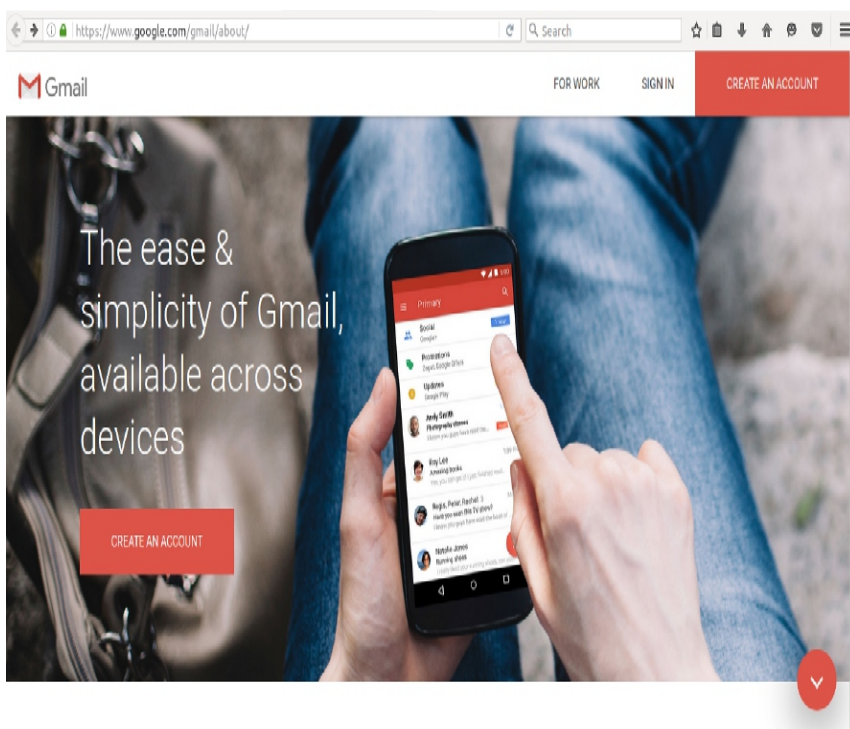
12.9 E-MAIL OR ELECTRONIC MAIL

E-mail or Electronic mail is process of sending digital message from one computer user to another computer user on a network. Email operates across computer networks (i.e. Internet). Unlike earlier email systems, Today's e-mail systems are based on *store-and-forward* model. In which Email servers accept,

forward, deliver, and store messages. Originally communication is in only ASCII text. But what if one wants to send some images or other stuff rather than text? Thus for doing this Multipurpose Internet Mail Extension (MIME) is used. It provides facility of carrying text along with multimedia content. Nowadays lot of mail services are in working like as Gmail, Yahoo mail, Rediffmail, Microsoft Outlook etc. We can send Email by creating mail account on selected mail services. Now the question arises that how can we use mail services? And how to create a mail account to access those services? Detailed step by step procedure given below with appropriate diagrams:

How to Create an E-Mail account:

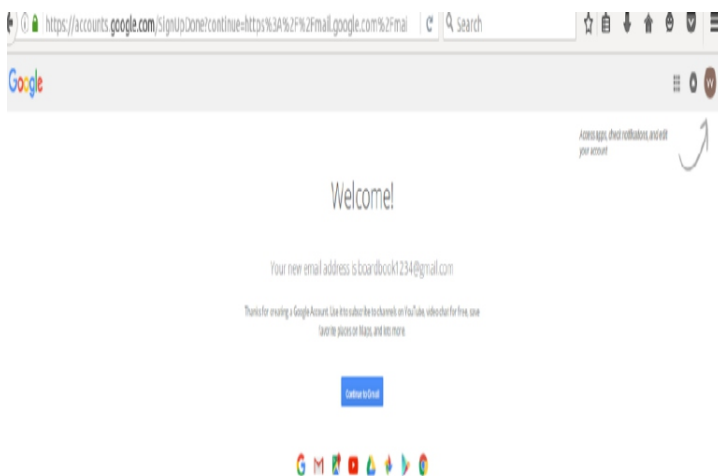
1. For creation of an email account first type the URL address of that mail service provider on address bar. For example, creating a Gmail account we need to type <https://mail.google.com/>. Following webpage will be displayed. Then click “CREATE AN ACCOUNT” option on displayed web page.



2. After clicking on “CREATE AN ACCOUNT” option following page will be displayed. In this page you can fill up all basic information about you.

The image shows two screenshots of the Google Account creation process. The top screenshot displays the 'Create your Google Account' page. It features a heading 'Create your Google Account' and a subheading 'One account is all you need. One free account gives you into everything Google.' Below this, there are icons for Google services (G, M, Y, T, B, P, S) and a section titled 'Take it all with you' showing a laptop and a smartphone. To the right is a form with fields for: Name (First and Last), Choose your username (with a dropdown for @gmail.com), Create a password (with a strength indicator), Confirm your password, Birthday (Month, Day, Year), Gender (Male/Female), Mobile phone (with a dropdown for +91), Your current email address, Location (with a dropdown for India), and a 'Next step' button. A small link 'Learn more about why we ask for this information' is at the bottom. The bottom screenshot shows a 'Privacy and Terms' overlay. It has a heading 'Privacy and Terms' and a subheading 'By choosing "I agree" below you agree to Google's Terms of Service.' It also states 'You also agree to our Privacy Policy, which describes how we process your information, including these key points.' The overlay lists 'Data we process when you use Google' with bullet points: 'When you use Google services to do things like write a message in Gmail or comment on a YouTube video, we store the information you create.', 'When you search for a restaurant on Google Maps or watch a video on YouTube, for example, we process information about that activity - including information like the video you watched, keywords, IP address, location data, and location.', and 'We also process the kinds of information described above when you use apps or sites that use Google services like ads, Analytics, and the YouTube ecosystem.' It also mentions 'Depending on your account settings, some of this data may be shared with your Google Account and we treat this data as personal information. You can control how we collect and use this data at My Account (myaccount.google.com)'. The overlay also includes 'Why we process it' with bullet points: 'Help our services deliver more useful, customized content such as more relevant search results.', 'Improve the quality of our services and develop new ones.', and 'Deliver personalized ads, both on Google services and on sites and apps that partner with Google.' At the bottom of the overlay are 'CANCEL' and 'I AGREE' buttons.

3. After filling all the required values in text boxes click on “Next Step” then following page will be displayed.
4. Clicking on “I AGREE” button or accepting Privacy and Terms following page will be displayed.



5. By clicking on “Continue to Gmail” Gmail system will appear. This is the one time process. It is called Sign Up process. After it a unique id is generated called email id and a password generated by user itself at the time of signup process.

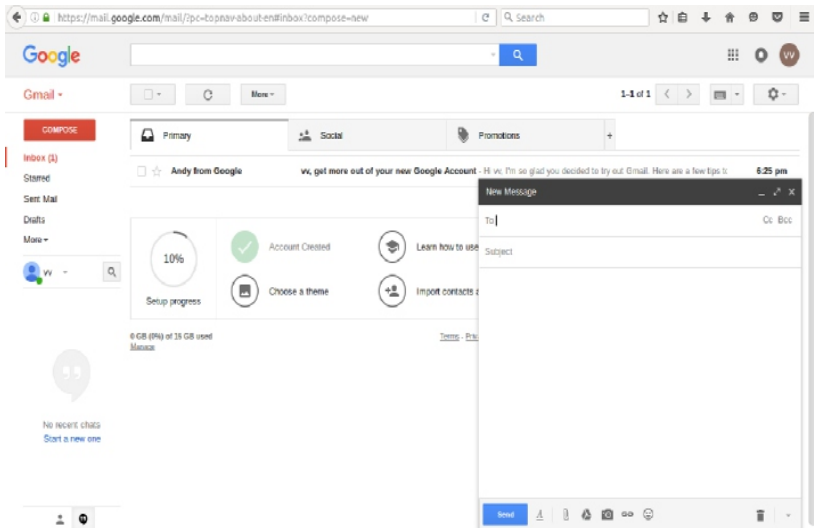
After it user can directly access its account by entering its email id and password. This mail service has many options for performing various mail activities.

- ☐ Compose
- ☐ Inbox
- ☐ Starred
- ☐ Sent Mail
- ☐ Drafts
- ☐ More

Compose

By using compose feature a user can write new mail. Clicking on compose button a new message window will open. In front of “To” we need to mention mail ids of recipients. In the “Subject” field user need to mention the title of the message. If user want to send copy of this mail to any other recipient we can use “Cc” option. A carbon copy, or "Cc'd" message is an e-mail that is copied to one or more recipients. Both the main recipient (whose address is in the "To:" field) and the Cc'd recipients can see all the addresses the message was sent to. When a message is blind carbon copied, neither the main recipient nor the Bcc'd recipients can see

the addresses in the "Bcc:" field. This prevents the e-mail addresses from being captured by someone in the list who might use them for spamming purposes.



Inbox

We can have all the receive mails in this folder. By default all the mails are arranged by latest date and time in this folder. We can also delete unwanted mail by selecting one or more mail by clicking on check button and then delete button.

Starred

When we star emails in Gmail, we mark them as important.

Sent Mail

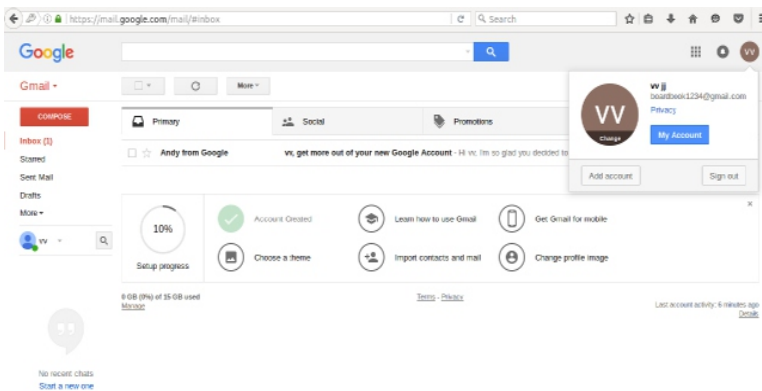
Sent mail shows the list of all messages which we have sent to other users.

Drafts

As you compose an email, Gmail saves it automatically as a draft just about continuously this is perfect to avoid accidental data loss.

More

It consists of other options like Chats, All mails, Spam and Bin.



12.10 TYPES OF E-MAIL SERVICES

Many different types of mail services and service providers provided to a client categorized mainly three parts:

1) **Web based mail**

Many email providers have a web-based email client (e.g. Gmail, Outlook.com and Yahoo! Mail). This allows users to log in to the email account by using any compatible web browser to send and receive their email.

2) **POP3 mail services**

The Post Office Protocol 3 (POP3) is a mail access protocol used by a client application to read messages from the mail server. Received messages are often deleted from the server. POP supports simple download-and-delete requirements.

3) **IMAP mail servers**

The Internet Message Access Protocol (IMAP) provides features to manage a mailbox from multiple devices. Small portable devices like smartphones are increasingly used to check email while travelling, and to make brief replies, larger devices with better keyboard access being used to reply at greater length.

12.11 USES OF MAIL SERVICES

Uses of mail services are categorized into mainly two parts:

1) **Business and Organizational use**

Email has been widely accepted by business, governments and non-governmental organizations in the developed world. Via using a web based mail service and

POP3 mail service any business personnel or organization can be connected to any of its employee through email.

2) Personal use

Personal use is also divided into two types in terms of accessing the mail service.

Desktop

Any user can access its mail account through web browsers on an internet enabled desktop computer.

Mobile

User can also access its mail account using through internet enabled smartphone or laptops. Various available smartphone applications increase accessibility to medium for users who are out of their home and unable to access their desktop computers. While at earlier time, email is provided mainly for desktop applications but after smartphone revolution in 21st century increases popularity as well as accessibility to email.

Today, there are 1.4 billion people worldwide use email provided by various mail services provider and 50 billion non spam emails sent daily.

12.12 BASIC ISSUES OF EMAIL

Email attachment size limitation

Email messages may have one or more attachments, which are additional files that are appended to the email. Some typical attachments include various documents like word file, pdf files, plain text files and scanned images of documents. In theoretical manner, there are no restriction or limitation to attachment size, but in practical implementation email clients, servers and ISP's implements various limitations on size typically 25 MB or less. Thus it's a huge drawback for users who wants to send some large documents.

Information overload

It's the problem in which a user can get so many emails and spam email in their email accounts. It led user towards dissatisfaction and increasing stress. Also it affects the ubiquity of workers.

Spam

Email "spam" is the term used to describe unsolicited bulk email. The volume sent is very high and increasingly consists not of advertisements for products, but malicious content or links.

Malware

A range of malicious email types exist. These range from various types of email scams, including "social engineering" scams such as phishing, email bombardment and email worms.

Email spoofing

Email spoofing generally means creating a spoof of an email so that receiver thinks that it is come from the user that it wants to be but in real it's not happening.

Privacy concerns

Last but not least issue is about security of users email and email account. A mail service provider ensures about security of its users. It includes secure transmission of email over internet and don't let give permission to unauthorized user to access anyone's email. Thus the security parameters kept very high by email service provider agency.

IMPORTANT POINTS

- The World Wide Web is basically an information space where the documents and the web resources are identified by the Uniform Resource Locators (URLs).
- A website is a collection of web pages that are the documents that are accessed through the Internet.
- A Web Browser is a software application used to locate, retrieve and display content on the World Wide Web, including Web pages, images, video and other files.
- URL is the abbreviation of *Uniform Resource Locator*. It is the global address of documents and other resources on the World Wide Web.
- Post Office Protocol 3 (POP3) is a mail access protocol used by a client application to read messages from the mail server.

Practice Questions

Objective type questions:

Q.1 Which is the first web browser available with graphical user interface?

- | | |
|-----------|------------|
| A. Erwise | B. Chrome |
| C. Opera | D. Firefox |

Q.2 On which system, first online chat system is developed?

- A. UNIX
- B. Plato
- C. Open Source
- D. Windows

Q.3 Which one of the following is a type of famous mail service?

- A. Chromium
- B. Firefox
- C. Google Drive
- D. Outlook

Q.4 Which one of the following is a type of mail activity?

- A. Inbox
- B. My Account
- C. To
- D. Privacy

Q.5 Which one of the following is a type of mail service?

- A. Message based
- B. Internet mail service
- C. Proxy based
- D. Web based mail

Very Short answer type questions:

Q1. Who invented WWW? Give the brief definition of it?

Q2. How is a website accessed?

Q3. Why people are looking for websites? Give two reasons?

Q4. Write down any five famous browsers name?

Q5. What are the main elements in web browsers are common?

Q6. What is URL? How it is different from URI?

Q7. Write down basic steps for surfing the internet?

Q8. What is Email? On which model Emails are based?

Q9. What are the main activities of email?

Q10. Give the names of most famous email service providers?

Short answer type questions:

Q.1 What is WWW? Explain in brief?

Q.2 Define website and web browser? What are main components in web browsers?

Q.3 Describe the process of surfing the internet?

Q.4 How chatting and conferencing happens on internet? Explain in brief?

Q.5 What is URL? Briefly explain its various parts?

Q.6 Explain Email or Electronic mail?

Q.7 Describe the process of creating an email account?

Q.8 What are various types of mail services?

Q.9 Describe various uses and benefits of Email?

Q.10 What are *five* basic issues regarding email services?

Essay type questions:

- Q.1** Describe the various uses of email services along with different types in detail?
- Q.2** Explain chatting and conferencing on internet and also explain internet surfing in detail?

Answer key for objective type questions:

1. A
2. B
3. D
4. A
5. D