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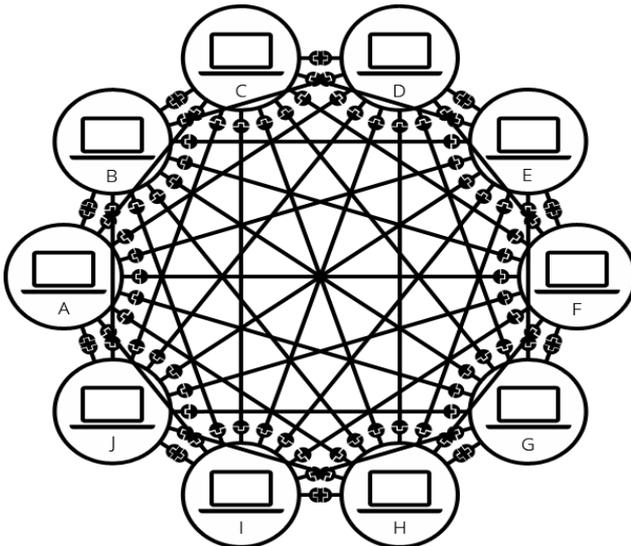
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Chapter 1.1

Internet and Internet Applications

1.1.1 What is the Internet?

The Internet is a network of computers linking many different types of computers all over the world. The internet is a global network that connects billions of computers all over the world. It is a network of networks. The internet links different organizations, academic institutions, government offices, and home users to share information among a large group of users. It is a network of networks sharing a common mechanism for addressing (identifying) computers, and a common set of communication protocols for communications between two computers on the network.



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1.1.2 Benefits of the Internet

- Access to endless information, knowledge and education.
- An increased ability to communicate, connect and share.
- The ability to work from home, collaborate and access a global workforce.
- The chance to sell and make money as a business or individual.
- Access to an unlimited supply of entertainment sources, such as movies, music, videos and games.
- The ability to amplify the impact of a message, allowing charities and other organizations to reach a wider audience and increase the total amount of donations.
- Access to the internet of things (IoT), which allows home appliances and devices to connect and be controlled from a computer or smartphone.
- The ability to save data and easily share files with cloud storage.
- The ability to monitor and control personal accounts instantly, such as bank accounts or credit card bills.

1.1.3 Internet Applications:

Applications that require the Internet to run or use those applications are called Internet applications. Or you can also say that those applications have been made to run from the Internet itself.

1 E-Mail (Communications)

Computer users around the world extensively use the email service on internet to communicate with each other. Pictures, documents and other files are sent as email attachments. Electronic mail or e-mail is a means of transmission of messages electronically over communication networks. E-mail is one of the most widely used services on the internet. Anyone who has e-mail account can send an e-mail to any other person who also has an e-mail account. Gmail.com, yahoomal.com,rediffmail.com, hotmail.com, etc. are provides the e-mail facility to the users.



2. Job search

Nowadays, many people search for their jobs online as it is quicker and there is a larger variety of job vacancies present. People can publish resume online for prospective job. Some of the web sites

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providing this service are naukri.com, monster.com, summerjob.com,recruitmentindia.com etc.



3. E-Commerce

E-commerce (electronic commerce or EC) is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the Internet. These business transactions occur business-to-business, business-to-consumer, consumer-to-consumer or consumer-to-business. Largest e-commerce companies in India are Flipkart, Snapdeal, Amazon India, and Paytm.



4. On-line payments/Digital Transactions

The rising boom of online payments in India has given way to many new entrants in the industry such as Phone pay, Google Pay, Paytm, Mobikwik, Oxigen etc who are majorly wallet driven payment companies. This growth has been driven by rapid adoption led by the increasing use of smart phones, tablets and speedy access to internet through broadband, 3G etc.



5. Social networking

Social networking is the use of internet-based social media programs to make connections with friends, family, classmates, customers and clients. Social networking can be done for social purposes, business purposes or both. The programs show the associations between individuals and facilitate the acquisition of new contacts. Examples of social networking have included Facebook, LinkedIn, and Twitter etc.



6. Video Conferencing:

It enables direct face-to-face communication across networks via web cameras, microphones, and other communication tools. Video conferencing can enable individuals in distant locations to participate in meetings on short notice, with time and money savings. The technology is also used for telecommuting, in which employees work from home. When video Conferencing is used in education, it is easier to have interactive communications between teacher to teacher, teacher to classroom, or classroom to classroom with students in different places.



7. Search engines:

The World Wide Web stores enormous amount of information on an amazing variety of topics in hundreds of millions of pages. Search engine helps to find the data in www.

Examples of Search Engine



Google



Yahoo



Bing

Yandex



DuckDuckGo

Baidu 百度

8. World Wide Web:

The World Wide Web, commonly known as the Web, is the world's dominant software platform. It is an information space where documents and other web resources can be accessed through the Internet using a web browser.



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9. Electronic news paper:

An online news paper is a newspaper on the internet, which is either published separately or as an online version of a printed periodical.



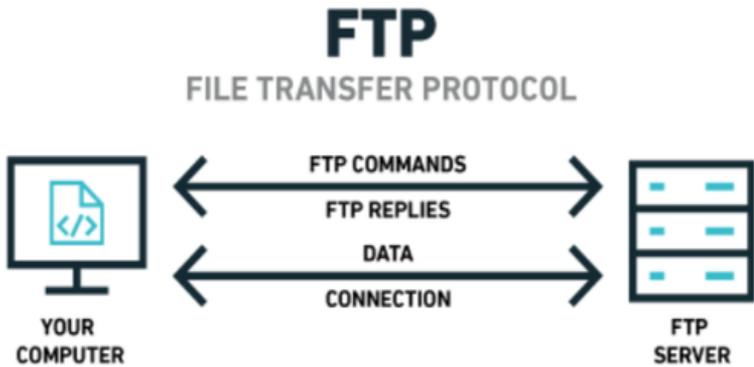
10. Online Study/e-Learning:

Now right from kindergarten children are exposed to the internet and computers. They find many useful things to learn on the internet. e-Learning are courses that are specifically delivered via the internet to somewhere other than the classroom where the professor is teaching.



11. File transfer protocol:

File transfer protocol is one of the oldest applications of the internet, which is basically used for transferring files from one computer to another computer, such as from a user's personal computer to a web server. It is the preferred method of exchanging files because it is faster and reliable.



12. Chatting:

Chatting is a very popular service of the internet that allows two or more online users to come together to talk using an instant messenger. Chatting helps users to stay connected with concerned people in business or family who live many miles away.

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13. Playing Interactive Games:

Online gaming describes any game that offers online interactions with other players using the internet.



14. Customer Support Service:

Many organizations are also using the internet to provide timely customer support.

16. Stock Market Updates

Selling or buying shares sitting on computer through internet. Several websites like ndtvprofit.com, moneypore.com, provide information regarding investment



17.E-banking/Internet Banking

e-banking (Online banking), also known as internet banking, it is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website.

Electronic Banking



18. Entertainment:

One of the best benefits of using the internet for entertainment is definitely the low price. You can locate and enjoy plenty of content on the internet from your phone, TV or computer. Popular, free, online entertainment resources include: YouTube, Podcasts, Music streaming such as Pandora or Spotify and Game sites.



Web Resources:

1. <https://www.educba.com/what-is-internet-application/>
2. <https://www.encyclopedia.com/computing/news-wires-white-papers-and-books/internet-applications>
3. <http://www.simplynotes.in/e-notes/mbabba/electronic-commerce/internet-and-its-application/>

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4. <https://quicklearncomputer.com/applications-of-internet/>
5. https://www.brainkart.com/article/Internet-Applications_36725/
6. <https://www.microfocus.com/documentation/net-express/nx31books/piover.htm>
7. <https://collegenote.net/curriculum/computer-fundamentals-and-applications/64/342/>
8. <https://a5theory.com/what-is-the-internet-and-its-applications/>

Chapter 1.2

Internet Addressing

1.2.1 Internet Addressing - Introduction

Internet addressing is a systematic way to identify people, devices, and Internet resources on the Internet. This may be an IP address, a website address, or an email address.

1.2.1.1 IP Address

An **Internet Protocol address** (IP address) is a unique address that identifies a device on the internet. This IP address is connected to a computer network that uses the Internet Protocol for communication over the Internet. An IP address serves two principal functions. One is that it recognises the host; in other words, network interface identification. The second one specifies the host's location in the network.

1.2.1.2 Types of IP Address

An ISP (Internet Service Provider) provides two types of IP addresses that are to be assigned to the devices. One is static IP and the other one is dynamic IP.

1.2.1.2.1 Static IP Address

A static Internet Protocol (IP) address is a unique number assigned to a computer by an Internet service provider (ISP). This type of IP address is also known as a fixed IP address or a dedicated IP address. Static IP addresses are constant, so they can be used on web servers, on FTP servers, and to view internet content. Static IP addresses are also useful for software applications such as gaming, website hosting, and Voice over Internet Protocol (VoIP) services.

1.2.1.2.2 Dynamic IP Address

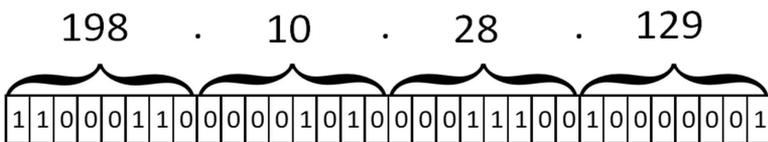
Dynamic IP addresses are temporary IP addresses that are assigned to devices on the network. It is made available by ISP providers. The dynamic IP assigned to a device goes into the address pool when it is not in use. When a dynamic IP is required to be used on the same device, the ISP provider will assign an IP address chosen randomly from the address pool to the device. That is why it is called Dynamic IP. Dynamic IP addresses are assigned using either Dynamic Host Configuration Protocol (DHCP) or Point-to-Point Protocol over Ethernet (PPPoE).

1.2.1.3 Versions of IP Addresses

Presently, two different versions of IP addresses are in use. They are IPv4 and IPv6.

1.2.1.3.1 IPv4 (Internet Protocol Version 4) Address

An IPv4 address is the most commonly used IP address. This is the unique address assigned to each device. It has a size of 32 bit unsigned integers written in a set of four numbers separated by dots (periods). This is referred to as an octet. Each number in the octet is in the range of 0 to 255. Here, the full IPv4 addressing range is from 0.0.0.0 to 255.255.255. IPv4 consists of 4,294,967,296 (2^{32}) unique addresses. For example, the IPv4 address 198.10.28.129 can be written as



1.2.1.3.1.1 Classful Addressing

For efficient routing, IPv4 addresses are organised into the hierarchical IP address design. In this, all addresses are divided into five classes, and each class is represented by two addresses: a network address and a host address.

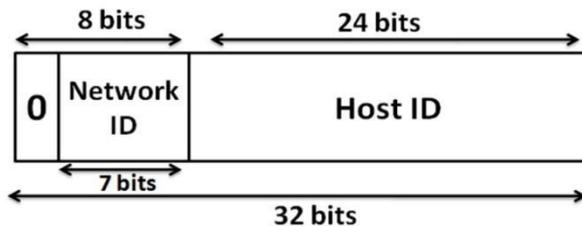
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The five classes are: Class A, Class B, Class C, Class D, and Class E.

Class A

In a Class A network, the first octet consists of 8 bits. Out of 8, the first bit is set to 0 and the remaining 7 bits are used to recognise the network ID. The second octet, which consists of 24 bits, represents the host id. See the image below.

Class A:

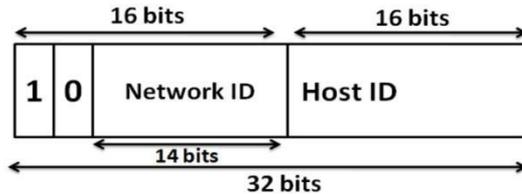


This Class A consists of 2^7-2 (126) networks each with $2^{24}-2$ (16777214) hosts—a total of more than 2 billion addresses.

Class B

In a Class B network, the first octet consists of 16 bits. Out of 16, the first two bits are set to 10 and the remaining 14 bits are used to recognise the network ID. The second octet, which consists of 16 bits, represents the host id. See the image below.

Class B:

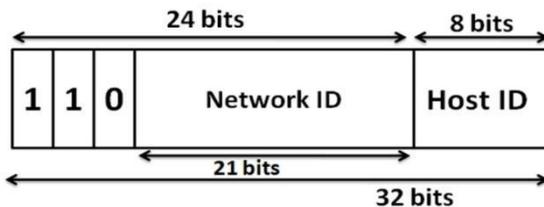


This Class B consists of $2^{14}-2$ (16382) networks each with $2^{16}-2$ (65534) hosts—a total of more than 1 billion addresses.

Class C:

In a Class C network, the first octet consists of 24 bits. Out of 24, the first three bits are set to 110 and the remaining 21 bits are used to recognise the network ID. The second octet, which consists of 8 bits, represents the host id. See the image below.

Class C:



This Class C consists of $2^{21}-2$ (2097150) networks each with 2^8-2 (254) hosts—a total of more than half a billion addresses.

Class D

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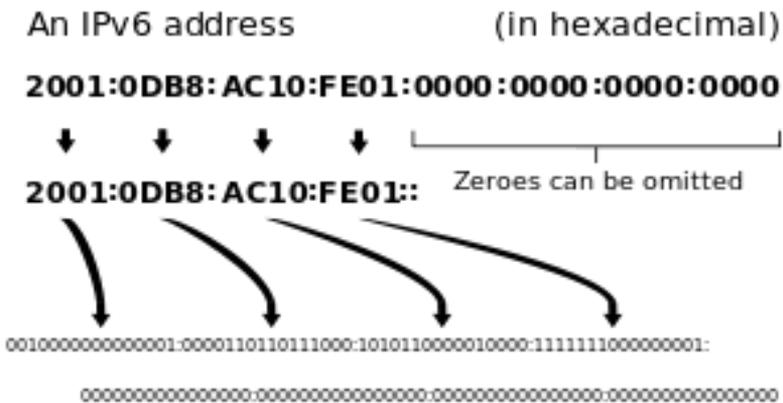
Class D IP addresses are allotted for multicasting. The first four bits are set to 1110 and the remaining 28 bits are used to represent the host ID.

Class E

Class E addresses are reserved for research and development purposes. The first four bits are set to 1111, and the remaining bits are used to represent the host ID.

1.2.1.3.2 IPv6 (Internet Protocol Version 6) Address

An IPv6 address is a 128-bit hexadecimal address that consists of both numbers and alphabets. This is made of 8 sets of 16 bits each, and these 8 sets are separated by a colon (:). The IPv6 supports 2^{138} Internet addresses in total. The IPv6 address can be written in the following format.



1.2.1.2b-1 IPv6 address Types

Mainly, the following three types of IPv6 addresses are available.

- Unicast Addresses
- Multicast Addresses
- Anycast Addresses

Unicast Address:

A unicast address is an address assigned to a single interface. Packets or data sent to that address will only be delivered to that interface.

Multicast Address:

Multicast supports one-to-many connections. This means that there is only one source but many destinations. In multicasting, destination hosts are organised into groups. This group is called the "host group." Each destination group is represented by a Class D IP address. For each multicast address, a set of zero or more hosts are examining packets addressed to the address. Packets sent to a multicast address are forwarded only to the members of the corresponding host group.

Anycast Address

An anycast address is one type of unicast address that is assigned to interfaces or devices on multiple hosts. Data sent to such an address will be forwarded to the nearest interface with that address. The

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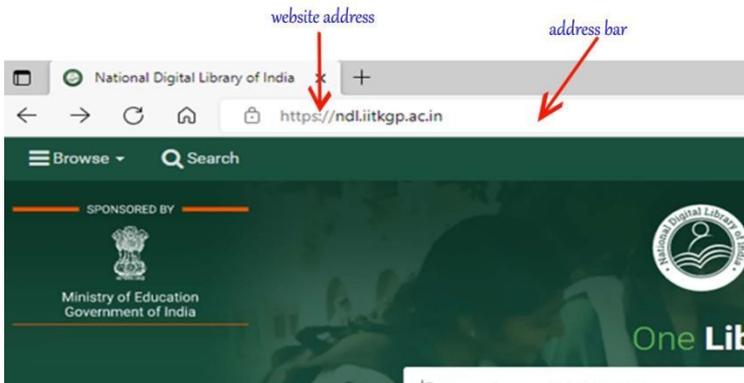
nearest interface is determined by the routers based upon their definition of distance.

1.2.2 Website Address

The web address consists of the location of the webpage on the Internet. Generally, this web address is known as the URL (Uniform Resource Locator). By typing the URL into the browser's address bar and pressing Enter on the keyboard, the web page associated with that URL is browsed. Here is an example of how a web address looks.

<https://ndl.iitkgp.ac.in/>

The above is the web address of the National digital library of India, where plenty of educational resources are available freely. To view the content of any web page on the internet, enter the web address in the address bar of the browser and press Enter key. See below Google Chrome browser.



1.2.2.1 Components of the URL

The URL stands for Uniform Resource Locator, where it locates the existing resources on the Internet. As discussed earlier, in other words, the URL is termed a web address. A URL consists of multiple parts, which are known as its components. Let us discuss the components of the URL.

Protocol or Scheme:

<https://ndl.iitkgp.ac.in>

The protocol HTTP (Hyper Text Transfer Protocol) or HTTPS (Hyper Text Transfer Protocol Secure) communicates with the web server on the Internet for sending and receiving the information. The other protocols like file:// and mail to:// are also used in the scheme component of the URL.

Subdomain:

<https://www.nirfindia.org/2021/Ranking.html>

Subdomain is the part of a domain that comes before the actual domain name (Ex: nirfindia) and domain extension (Ex: org). Commonly it is used to separate the web address into sections like

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support.hostsite.com for creating a support site for the users and m.hotsite.com for the mobile version of the site.

Second Level Domain:

<https://www.nirfindia.org/2021/Ranking.html>

A Second Level Domain (SLD) is the part of the domain name that is located between the subdomain and Top Level Domain (TLD). In the above mentioned URL, the term "nirfindia" is the second level domain name.

Top Level Domain:

<https://www.education.gov.in/en>

The top-level domain (TLD) is the last part of the domain. In other words, it is the extension part of the domain. In the above mentioned URL, the term "gov.in" is the top level domain name. This extension represents the type of organization. For example, the .gov.in extension represents the government organization in India. The .ac.in extension is used for academic institutions in India.

Domain or Host:

<https://www.nirfindia.org/2021/Ranking.html>

The domain is the name of the website. In other words, the domain name is the location where it holds the desired resource kept in the

form of text, images, videos, etc., for accessing. In the above mentioned URL, the term "www.nirfindia.org" is the domain name.

Path:

<https://www.nirfindia.org/2021/Ranking.html>

The resource is retrieved and displayed on the client's screen from the path mentioned directly. That means the path parameters give the exact location of the information on the webserver. The path is located right after the domain name. For example, look at the path 2021/Ranking.html. Here, the desired content is available in the file Ranking.html. The file is located in the folder with the name "2021". You can access and view the content of the file Ranking.html directly by entering the url with the path instead of navigating from the home page to the page "Ranking.html".

Query String:

https://www.education.gov.in/en/statistics-new?shs_term_node_tid_depth=384

A query string is usually consisting of a string name and value together. That means a specific purpose of the information is requested through a query string to display on the browser. Here, the string name and value mentioned in the query string are separated from each other by the question mark(?). In the above mentioned

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URL, the string "statistics-new?shs_term_node_tid_depth=384" is the query string component.

1.2.3 Searching the Internet

An internet search, otherwise known as a search query, is an entry into a search engine that retrieves the information from web servers connected on the internet. The search query consists of keywords or key phrases, etc., related to the desired information. The keywords sometimes called as search terms. The search engines are playing a key role in searching a query on the internet.

1.2.3.1 Search Engine

A search engine is a software application that allows Internet users to search for content on the Internet. A user enters keywords or key phrases into a search engine related to the desired content. The search engine returns a list of content in the form of websites, images, videos, podcasts, or other online data that semantically match the keywords after fetching the database on the Internet.

1.2.3.1.1 Components of the Search engine

The following are the three basic components of Search Engine.

- 1. Web Crawler**

A Web Crawler is also known as a search engine bot, or web spider. It is a software component that traverses the web and gathers all the information over the Internet.

2. Database

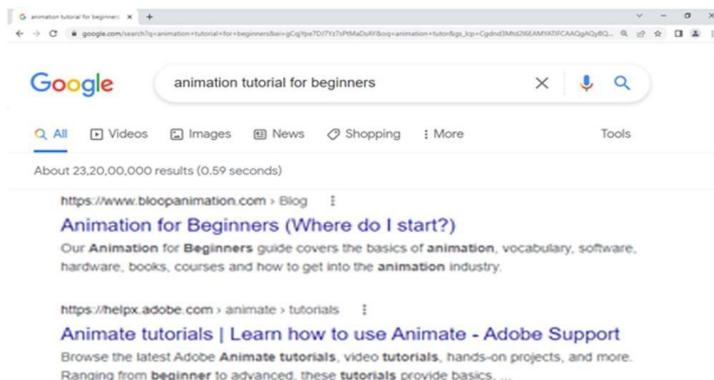
A database is a place where a large number of web resources are stored. It is a non-relational database. Some most popular search engine databases are Amazon Elastic Search Service and Splunk.

3. Search Interfaces:

As the name suggests, it is an interface between the user and the database. It allows users to search for the query content using the database. The Search Interface is one of the main components of a Search Engine.

1.2.3.1.1(a) Searching for a key phrase in Google

Example:



See the above example. The key phrase "animation tutorial for beginners" was entered in the address bar. The list of websites, videos, images, and news articles, etc., which are semantically matched with the key phrase is displayed. This is because the icon under the search menu "All" has been selected. The lists of more icon links are available under the search menu, like videos, images, news, shopping, and more, to filter the results page based on the interests of the user. The user has to choose the "Images" icon on the search menu to view the result page in the form of images only by filtering other icons. To view the results page in the form of videos, the user can click on the "Videos" icon. The Tools tab on the search menu provides advanced options to search and display specific content. When the images icon is clicked from the search menu, the result page will contain images. Now, if we click on the Tools tab, some parameters related to the images will appear. They are size, colour, type, time, and usage rights. By giving values to these parameters, a user can get the desired result page. Also, when the Videos icon is clicked from the search menu, the parameters in the Tools tab will change to match the video icons instead of the previous parameters. In this way, users can search for the desired information through the Google search engine and get it.

1.2.3.1.2 The List of popular search engines

| | |
|--|--|
|  | <p>Google Search Engine</p> <p>It is the most popular search engine in the world. Google regularly updates its searching algorithm from time to time to meet the end user's requirements. This makes the search engine to become most popular. The Google search engine was launched in 1998.</p> |
|  | <p>Ask Search Engine</p> <p>The Ask search engine was launched in 1996. The main idea behind launching this search engine was to allow users to get answers to questions posed every day by keyword searching.</p> |
|  | <p>Yahoo Search Engine</p> <p>The Yahoo search engine was released in 1994, starting with the Yahoo Directory. Later, it was updated into a web crawler-based search engine.</p> |



Bing Search Engine

The Bing search engine was introduced by Microsoft in 2009. It is the second most visited search engine in the world. It allows the user to filter the outcome results in the form of images, ads, videos, etc. The disadvantage of using Bing is that it produces slower results when compared to Google.

Other than the search engines mentioned above are AltaVista, LYCOS, Alexa, DuckDuckGo, and Yandex.

1.2.4 Web Browser

A web browser is a software application designed for fetching and accessing the data on the Internet. Generally, the information, which is intended to be accessed on the internet, is kept on the web server. Whenever a user requests some information, the web browser fetches the data from the web server and displays the content on the user system's screen. The content displayed on the user's screen is called a webpage. The content may be in the form of text, images, animations, videos, audio clips and many more.

1.2.4.1 The functions of a web browser

The following are some of the functions of a web browser.

- To retrieve information from the World Wide Web and make it available for users.
- Browsing any website can be done using a web browser by entering the URL in a specified location.
- A browser facilitates opening multiple web pages at the same time.
- As options like back, forward, reload, home, etc., are available on web browsers, users can browse the website conveniently.
- As browsers are using an internal cache, the web page is browsed easily for the next time.
- The web browser supports plugins to run java applets as well as flash media content on any device smoothly.

1.2.4.2 Features of a web browser

The following are some of the features of the web browser.

Home button: Clicking the ‘Home’ button brings the user directly back to the home page of the browser. The user can set any webpage as the home page in the browser.

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Address bar: The desired website is browsed when the related URL is entered in the address bar of the web browser.

Refresh/Reload button:The 'refresh' button is for browsing the web page once again. The usage of the refresh button in dynamic web pages is frequent as the dynamic web pages are updated regularly. Any updates related to that web page will not reflect on the browsed web page when it happens after browsing that web page on the server. The refresh button is helpful in such cases to reload the page to view the updated content.

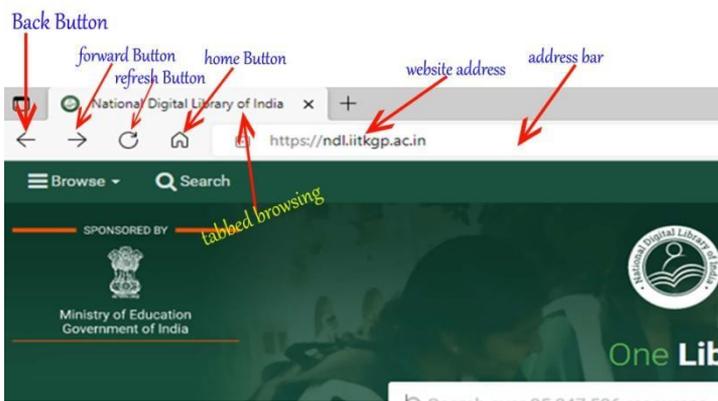
Back and Forward buttons: The back and forward buttons are used for navigating through visited web pages. The back button is for moving backward from the current URL to view previously visited web pages. The forward button is for moving forward from the current URL to the previously visited web pages.

Bookmarks:

The bookmark allows the user to save and pin the desired website addresses on the browser as a mark of reference in the future. These website addresses are visible whenever the browser is opened and accessed directly by clicking on them.

Tabbed browsing: This feature allows the users to open new screens on the same browser for multiple browsing simultaneously. Clicking

the (+) symbol on the Google Chrome browser will open a new tab for browsing.



1.2.4.3 Types of Web browsers

The following are the popular browsers in the industry.

| Name of the Browser | Features |
|---------------------|--|
| | <p>Internet Explorer</p> <p>It was released in 1995 along with Microsoft Windows 95 Operating System. In 2003, it attained nearly 95% usage share and became the most popular browser. Microsoft replaced Internet Explorer with Microsoft Edge in 2015 as a default browser supplied with Windows 10 operating system.</p> |

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| Name of the Browser | | Features |
|---|------------------------|---|
|  | Mozilla Firefox | It was released in 2002 by Mozilla Foundation. In 2004, it became the most popular browser with increased usage. Later several versions are released. This browser was also made available for mobile phones, tablets, etc. |
|  | Safari | It was released in 2003 by Apple. It became the most popular browser on Mac OS X operating system. It supports for latest technologies like XHTML, CSS2, etc. |
|  | Opera | Opera is one of the most popular browsers. It has an inbuilt adblocker feature. Opera supports several major apps like Facebook messenger and Whatsapp. This browser was also made available for mobile phones, tablets, etc. The daily news notification is the new feature included in the opera browser. |

| Name of the browser | | Features |
|---|---------------------------|--|
|  | Google Chrome | <p>It was launched in 2008 by Google. It is the most popular browser today. The main reason for this is its speed. It opens quickly and loads the pages faster. It has many features like ad-blocking and malware restrictions. Users can search the content and browse the website from the same input box. It accepts third-party extensions for the user's convenience. The Incognito mode allows browsing privately where cookies and browsing history is not saved. It is the best user interface till now.</p> |
|  | Microsoft Edge | <p>Microsoft Edge is the default web browser on Windows 10 and was released in 2015. In 2022, Microsoft Edge became the second most popular desktop browser in the world. It integrates with Microsoft's online platforms to provide voice control, search functionality, and dynamic information related to searches within the address bar. Users can make annotations to web pages that can be stored to and shared with OneDrive.</p> |
| <p>Other than the web browsers mentioned above are Comodo Dragon, Yandex, Torch, Netscape Navigator, UC Browser etc.,</p> | | |

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e-Resources:

4. IP Address Management Principles and Practice - Tomothy Rooney
5. <https://www.redbooks.ibm.com/redbooks/pdfs/gg243376.pdf> (TCP/IP Tutorial and Technical Overview)
6. <https://ncert.nic.in/textbook/pdf/leip105.pdf> (Internet and Web)
7. Tex Book: Fundamentals of web programming (LP University)

Scan the QR Code to Watch the Video Lesson



Scan the QR Code to learn more through FAQs.



Chapter 1.3

Social Networking: Twitter

1.3.1 Introduction to Social Networking

1.3.1.1 What is social networking?

Social networking is an internet based online platform that enables user to interact with other people having similar personal and professional interests , background, activities etc.
or

Social networking sites are dedicated websites used by the users to connect people and share information, thoughts with large no. of users

Social networking sites have been evolving tremendously over last two decades. Some of the most popular social networking sites are Facebook, Instagram, Twitter, Snapchat, LinkedIn and many more.

1.3.1.2 Different types of Social networking sites

Blogs and Microblogging Sites:Micro blogging site is the place where people share their latest happenings in their lives. Here information is shared in short blogs. Twitter and Tumblr are the popular micro-blogging sites

Photo Sharing : Filckr and picasa are most popular photo sharing websites where people can share photos

Video sharing: The most popular video sharing social networking site is YouTube where people can share their video content

Professional network sites: LinkedIn is the most popular social networking site designed especially for professional and business

Social Media: These are the social networking sites which allow people to connect and to stay in touch with the people known to them. Most popular social media sites are Facebook, Instagram, snapchat etc.

Forums: Generally forums include group of people with similar or related interest. The users in the forum can have group discussions on a particular topic and upsurge relationships with each other

1.3.1.3 Top 10 Social networking sites

| S.no | Name | Launched | Founders | HQ | MAU | Revenue |
|------|----------|----------|--|----------------|-------------|-----------------|
| 1. | Facebook | 2004 | Mark Zuckerberg, Eduardo Saverin, Andrew McCollum, | Menlo Park, CA | 2.9billions | \$85.96 billion |

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| | | | | | | |
|----|-----------|------|---|---------------------------|----------------|--------------------|
| | | | Dustin Moskovitz, Chris Hughes | | | |
| 2. | YouTube | 2005 | Jawed Karim, Steve Chen, Chad Hurley | San Bruno, California | 2.2 billion | \$28.8 billion |
| 3. | Whatsapp | 2009 | Brian Acton, Jan Koum | Menlo Park, California | 2 billion | \$5.5billion |
| 4. | Instagram | 2010 | Kevin Systrom, Mike Krieger | Menlo Park, CA | 2 billion | \$24 billion |
| 5 | TikTok | 2016 | ByteDance Ltd, Zhang Yiming, Toutiao | Culver City, CA | 1 billion | \$11 billion |
| 6 | Snapchat | 2011 | Evan Spiegel, Bobby Murphy, Daniel Smith, David Kravitz, Leo Noah Katz | Los Angeles, CA | 538 million | \$1.06 billion |
| 7 | Pinterest | 2005 | Ben Silbermann, Paul Sciarra, Evan Sharp | San FranciscoCA | 444 million | \$575 million |
| 8 | Reddit | 2010 | Steve Huffman, Alexis Ohanian, Aaron Swartz | San Francisco, CA | 430 million | \$289.9 million |
| 9 | LinkedIn | 2003 | Reid Hoffman, Konstantin Guericke, Allen Blue, Jean-Luc Vaillant, Eric Ly | San Francisco, CA | 250 million | \$12. 4 billion |

| | | | | | | |
|----|---------|------|--|----------------------|----------------|-------------------|
| 10 | Twitter | 2003 | Jack Dorsey, Evan Williams, Biz Stone, Noah Glass | Mountain View, CA | 217 million | \$5.42 billion |
|----|---------|------|--|----------------------|----------------|-------------------|

1.3.1.4 Why should we get connected to social networking sites?

Provides quicker, cheaper and easiest way to communicate and to keep in touch with friends, relatives , colleagues and other people around the world

To find people having the same interests, background, hobbies etc.

To share thoughts and to express opinions

Social networking sites can be used by business people to promote business, brands and to sell products online

Social networking sites plays a major role to create awareness among the people about social issues and it is also easy to spread the message and invite people to take part in event for awareness and activism

Through social networking sites people get updated with the news/events that are happening around us

1.3.2 Disadvantages

Privacy issues:While using the social networking platforms users post lots of personal information. When this information

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falls in wrong hands the consequences can be damaging. Some of the privacy issues are hacking, identity theft etc.

Addiction: May become an addiction if not used properly. Social networking addict constantly checks Social Media Feed or checks out people's profiles for hours and hours. The anxiety to stay connected with social networking site may lead to psychological problems

Mental illness: Too much time spent on social networking sites may increase the risk of mental health problems such as depression, anxiety and loneliness. Especially teenagers mental health is often negatively affected by this culture of comparison as well.

Cyber bullying: As social networking sites can be used by anyone to share and express their opinions, many use this platform to expression hatred and aggression. Celebrities and public figures are the most commonly targeted victims of cyberbullying. In particular, Teenagers are at risk of cyber bullying through the use of social networking sites like Instagram, Facebook etc. Cyberbullying is also associated with depression, anxiety, and an elevated risk of suicidal thoughts.

Detachment from reality/social isolation

Hacking: Most of the social networking users are not completely aware of security measures to be taken while using social media platforms. People share photos, thoughts,

personal information etc. on social media sites. Such information may be used by the hackers to hack user's accounts in social media, e-mails or even mobile phone also. Several personal Twitter and Facebook accounts have been hacked in the past that have affected the individuals' personal lives.

1.3.2 Twitter

Twitter is an open social networking site where people can interact with others in short messages called Tweets.

- Launched: 21st March, 2006
- Founders: Jack Dorsey, Noah Glass, Biz Stone, and Evan Williams
- Headquarters: Mountain View, CA
- Monthly Active Users: 217 million
- Revenue: \$5.42 billion

Twitter was created on 21st March 2006 and launched in July of that year. The definition of Twitter is “a short burst of inconsequential information” and “Chirp from birds” that is exactly what a Twitter is. That is the reason why the Twitter logo is a “small bird”. Twitter Strongly emphasizes real-time information i.e the happenings around us or the trending information in just 280 characters.

1.3.2.1 Who should use Twitter?

Everyone from individuals to the largest business organization, corporates can use Twitter. Twitter is a broad platform that welcomes all kinds of users.

1.3.2.2 What can be Shared on Twitter?

In Twitter people love to post tweet, breaking news, politics, entertainment, sports etc. Twitter facilitates to post images, gifs, videos, hyperlinks along with the tweets Along with the tweets Twitter also acts as a platform to promote business and to shop directly through tweets. Twitter is a platform where anyone and everyone can reach to anywhere in the world

1.3.2.3 Is Twitter is safe?

Yes, twitter is a secure website where the user's account is password protected. As long as the user protects the password and sets up privacy settings the user's account remains secure.

1.3.2.4 How to use Twitter?

1. Sign up for an account
2. Create a profile
3. Then just start Tweeting

1.3.2.5 Steps to create account in Twitter:

1. Go to Twitter.com



Happening now

Join Twitter today.

 Sign up with Google

 Sign up with Apple

or
[Sign up with phone or email](#)

By signing up, you agree to the [Terms of Service](#) and [Privacy Policy](#), including [Cookie Use](#).

In the sign up process first step is to enter name, phone no. or email address and date of birth and then click next

× Step 1 of 5

Create your account

Name

Phone

[Use email instead](#)

Date of birth

This will not be shown publicly. Confirm your own age, even if this account is for a business, a pet, or something else.

[Next](#)

Verify the details and make sure that the details are correct and click sign up

← Step 2 of 5

Customize your experience

Track where you see Twitter content across the web

Twitter uses this data to personalize your experience. This web browsing history will never be stored with your name, email, or phone number.

By signing up, you agree to our [Terms](#), [Privacy Policy](#), and [Cookie Use](#). Twitter may use your contact information, including your email address and phone number for purposes outlined in our [Privacy Policy](#). [Learn more](#)

Next

← Step 3 of 5

Create your account

Name

E Jyothi Kiranmayi

Email

ejyothikiranmayi@gdwndd.ac.im

By signing up, you agree to the [Terms of Service](#) and [Privacy Policy](#), including [Cookie Use](#). Twitter may use your contact information, including your email address and phone number for purposes outlined in our [Privacy Policy](#), like keeping your account secure and personalizing our services, including ads. [Learn more](#). Others will be able to find you by email or phone number, when provided, unless you choose otherwise [here](#).

Sign up

Twitter will send an verification code to either to the email or phone no. that the user had entered. Go to the inbox and check the mail from Twitter, take the verification and enter it, and then click next

← **Step 4 of 5**

We sent you a code

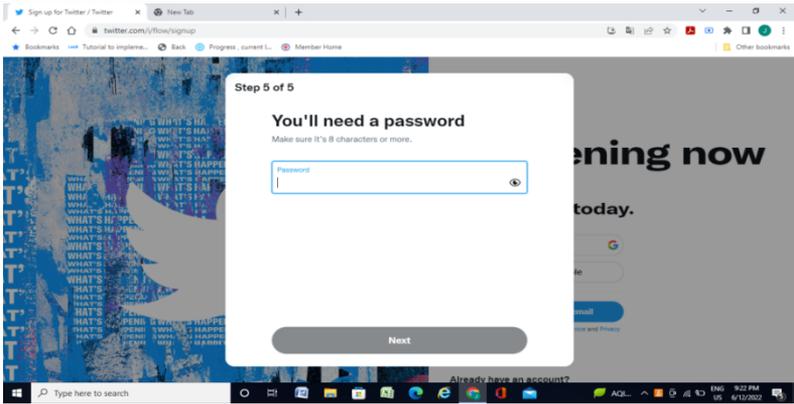
Enter it below to verify jyothikiranmayi@gdwndd.ac.im.

[Didn't receive email?](#)

Next

The last step is to set up password for your account long and then click next

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Few more steps to go before you start using your account. Twitter will ask you the following, all are optional if you want, you can go for it otherwise you can skip them.

- Pick a profile picture



- Describe yourself
- Want to find friends to see who they follow
- Suggestions for you to follow
- Turn on notifications

After these steps Twitter will take you to the official page of your account from where you can start Tweeting.

1.3.2.6 Managing Privacy Settings in Twitter:

The following are some of the security and privacy options given to user to manage their account

- **Photo Tagging** :User can choose who can tag photos with user name
- **Tweet Privacy** :By default tweets posted by the user are made public. Hence, anyone can follow. But if the user wants to protect his privacy then by just clicking the checkbox “Protect my Tweets” the user account will be protected. The people who want to follow must send request to the user. Those who follow the user can only see the tweets

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- **Tweet Location** :If the user clicks the check box “Add Location to My Tweets” Twitter will include general location of the user along with the Tweet whenever user posts a tweet. User can also come here and click “Delete All Location information to remove all the location information from all the tweets, as well as any custom locations saved by the Twitter for the user
- **Content you See**:User can decide what to see on Twitter based on one’s own preferences, topics and interests
- **Mute and Block**:User can manage the accounts, words and notifications that are muted or blocked
- **Direct messages**:Manage who can message you directly
- **Discoverability** – You can decide whether people who have your mail id or phone can find and connect with you on Twitter

You can change your privacy settings at any time to suit your needs.

1.3.2.7 Pros and Cons of Twitter

Pros

- **Easy to use** :It is easy to create and manage Twitter account. Once the account is created user can start Tweeting.

- **Shorter tweets:**The tweet limit in Twitter is 280 characters. The posts must be precise and concise. Hence the users should get straight to the point avoiding the unnecessary stuff and let it be understood by others. This is one of the key advantages of Twitter and that's why most of the users like Twitter.
- **Self promoting / promoting others:** Twitter has approximately 229 billion registered users and 217million active users. Hence it is a platform which has a wide audience so it becomes very easy to endorse any product,to promote your own brand or other's to targeted customers. By promoting others, they may be more inclined to promote you back.
- **Follow your favorite celebrities and sport persons :** Users can follow their favorite celebrities and sportspersons to get the latest updates
- **Secure:** Twitter account is password protected besides it also provides various security and privacy settings by using which the user can manage the account securely

Cons

- **Limited amount of space :**Twitter allows only 280 characters per tweet. If the user has lot to say then it can be difficult to tweet in limited characters. The user has to summarize

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- **No message broadcasting** :Twitter allows to send direct messages to only one user at a time. This is a major drawback especially for business owners
- **Posts can be concealed**: As Twitter is used by many people it often gets overloaded by posts, sometimes your post may be concealed by other posts. In that case you need to post multiple times in day to spread a word especially when you are promoting yourself and others
- **.False and fake Accounts**:Most of the Twitter accounts are either false or fake accounts
- **Spam messages**:Like other social networking sites Twitter is filled with spam messages because most of the users use twitter as a platform to promote their products, websites, blogs etc.
- **Addictive**: People will become addicted easily to social networking sites.

1.3.2.8 Conclusion:

Social networking sites are dedicated websites that allows users to create their profile and connect with other people around the world .If used properly social networking sites are a boon otherwise they will become a bane. It depends on how we use them . Anything excess is harmful. Hence, Social networking sites should be used for our benefit and do not let them control our lives.

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4. <https://www.searchenginejournal.com/social-media/biggest-social-media-sites/#close>

Chapter 1.4

Social Networking: Tumblr, LinkedIn

1.4 Tumblr

Tumblr is an American microblogging and social networking site founded by David Karp in 2007 and currently owned by Automattic.

- Founded: 2007
- Founder: David Karp
- Headquarters: New York, US
- Monthly Active Users: 16.74 million

Tumblr is the most popular social networking site among the younger generation aged between 18-29 years. Tumblr allows users to post in short blogs. Users can post multimedia content such as photos, videos, quotes, chats and even audio content.

Tumblr is a versatile platform which can be used as

- **Social networking site:** Like many other social networking sites users use Tumblr to connect different people , to exchange messages, share posts and to express their opinions
- **Microblogging site:** Tumblr is a perfect place for users to start a simple blog and to express themselves.
- **Search engine:** As Tumblr is most popular among younger generation, young user use tumblr as a search engine to search wide variety of artistic media such as memes, music, gifts and so on as per their interests

Unique feature of this platform is it facilitates complete customization of user's pages. Tumblr has around 500 million registered accounts and 171 billion posts

1.4.1 Features of Tumblr

1. Create multiple blogs

Tumblr gives a default blog when the user creates an account, but it also provides the flexibility of creating multiple blogs if the user wishes to have. One for inspirational quotes, one for entertainment, one for recipes It's up to the user to decide how many blogs the user wish to have

2. Easy to post Multimedia content

Tumblr takes hassle out of posting different types of content. It is very easy to post different types of content in Tumblr.

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Whether it is photo or video or audio or song, whatever may be the content just click on the type of the content that you want to post, follow the on-screen prompts and the post will be created.

3. Reblogging

“Reblog” feature allows to copy other people post(by giving them credit) with a few clicks.If the user likes someone’s else post and want to share it, just by clicking “reblog” the post can be shared.

4. Customized themes/layouts

Tumblr allows user to put personal stamp on a blog with their own layout . The users can pick up pre-made theme or if the user is good at computer programming then they can create their own customized theme for their blog.

5. Search and explore a world of online journals

Tumblr is a platform where different types of content created by different people are available. User can search and explore online journals in which they are interested or something that is specific

1.4.2 Who can use Tumblr?

It is a free and open platform anyone can use. It is mostly popular among the young adults. About 45% of the users are below 35 and the majority of which are teens

1.4.3 What can be shared in Tumblr?

Anything and any form of content can be shared

How to use Tumblr?

1. Sign up for an account
2. Create a profile
3. Explore

1.4.4 How to sign up for Tumblr?

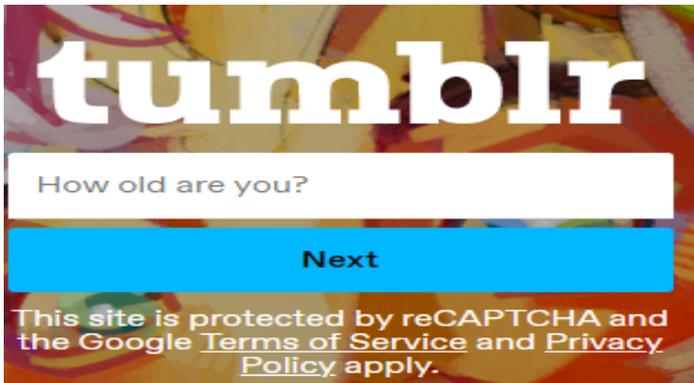
The following are the steps to sign up on Tumblr:

1. Open web browser and go to www.tumblr.com.
2. Screen appears with three boxes highlighted. Type email address, a password to protect your account and name of the blog which represents the name of the user on Tumblr. Then click sign Up

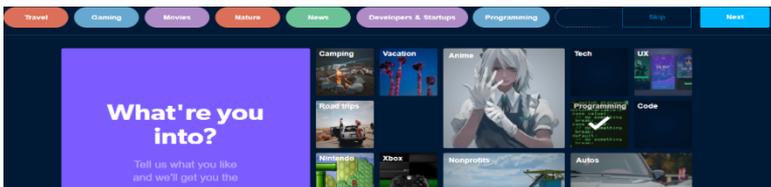


The image shows a dark blue sign-up form for Tumblr. At the top, the word "tumblr" is written in a large, white, lowercase, sans-serif font. Below the logo are three white input fields stacked vertically. The first field is labeled "Email", the second "Password", and the third "Blog name". To the right of the "Password" field, there is a small icon of three horizontal lines. Below the input fields, there is a line of text in a smaller white font: "By clicking sign up, or continuing with the other options below, you agree to Tumblr's [Terms of Service](#) and have read the [Privacy Policy](#)". At the bottom of the form is a bright blue rectangular button with the text "Sign up" in white.

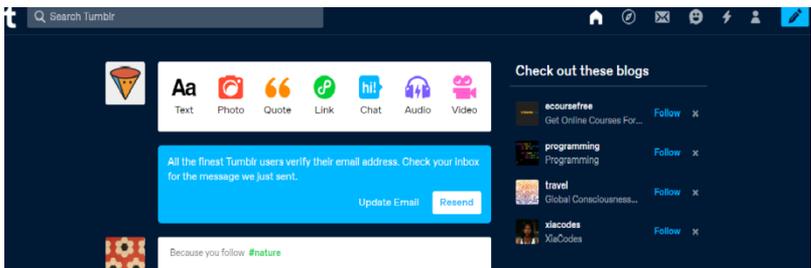
3. Then click the box labeled “How old are You?” and type the age.(user has to do this because Tumblr is not legally allowed to let anyone under the age of 13) Then click next.



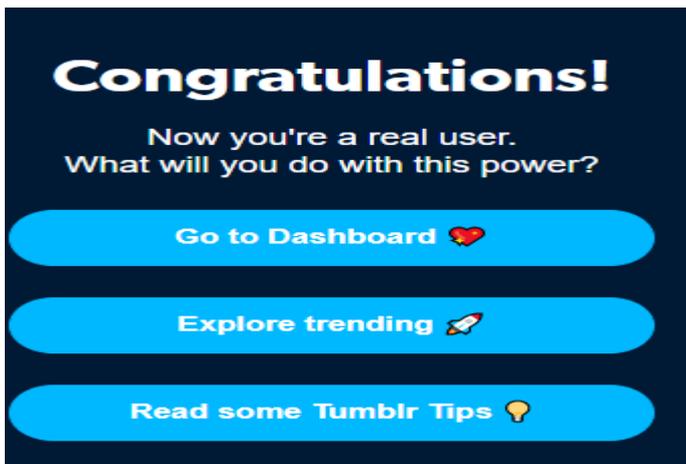
4. In the next screen Tumblr asks you to pick up at least five categories of your interest to get an idea about what kind of posts you might like and what blogs you might want to follow on Tumblr. Then click Next.



- Then the user will be taken to Tumblr's dashboard, the main control center of the user's account. Then the next step is to verify the user's email address.



- Once the user's email address is verified click on Go to Dashboard to go back to your main screen on Tumblr.



1.4.5 Pros and Cons of Tumblr

Pros:

- **Free to use** :Tumblr is free to use. You don't have to pay any money to create or maintain your online journal.
- **User friendly** : Tumblr's interface is user-friendly. Even new blogger's can use it with ease. If the users mess up with the whole journal/content it can be easily reversed
- **Simple feedback options** – Through feedback options let other people know what you are thinking. In Tumblr Feedback options are simple: you can "like" an entry, leave a comment on it, or re-post it on your own journal (while giving the original poster credit).
- **Privacy**: If you want to keep your thoughts to yourself and you don't want to share your to share your journal with Tumblr's community, You can set it to "private" .You can practice writing online journals and experiment with Tumblr, without having to worry about anyone else scrutinizing what you do.

Cons:

- **Designed for younger generation** – Tumblr is very much geared towards younger generation. Tumblr’s design is a bit more towards videos and images rather than traditional long-form text entries. If the user is little older then it is difficult to find the content that is related to them.
- **Limited search features:** Tumblr has limited search features . Users can only search journal only by their names or by content i.e tagged with a related or particular word. Unlike Facebook and Twitter users can’t find journals based on associations with known people.
- **No restrictions on content** – There are no restrictions on content as to what can be put on people’s journal until and unless the content breaks the copy right laws. Hence, the user can limit this type of content from seeing by enabling “Safe Mode”.

1.4.2 LinkedIn

LinkedIn is a social networking site designed for professionals and business.

- **Launched :** 2003
- **Founders:** Reid Hoffman, Konstantin Guericke, Allen Blue, Jean-Luc Vaillant, Eric Ly
- **Headquarters:** Sunnyvale, CA

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- **Monthly Active Users:** 830 million ([2022](#))
- **Revenue:** \$8.05 billion ([2020](#))

LinkedIn has over 700 million registered users with about 300 million active each month. LinkedIn is predominantly used for professional networking where employers post jobs and job seekers post their resume. LinkedIn is a platform for anyone who wants to advance in their career. It is a platform where employees or job seekers can showcase their education, skill, expertise, experience etc. Every week over 50 million people use LinkedIn to search for jobs

1.4.2.1 Features of LinkedIn:

- Allows individuals to create their profile that showcase their education, skill, expertise and experience so that potential employers can see it. User's LinkedIn profile is like an online version of their resume
- Allows companies to create profiles to show themselves off, connect with potential partners and hire employees
- LinkedIn is a platform that helps to establish and expand one's own professional network
- Companies or organizations can post job listings. If an individual is running his own business then job openings can be posted to hire new employees

- Gets job advice from other people working in the same field. Individuals can form Join groups of people with similar jobs or skill and discuss professional matters that relate to their work
- Get the latest business updates or news

1.4.2.2 How to use LinkedIn?

- Sign up for an account
- Create profile
- Explore

1.4.2.3 Steps to Sign Up on LinkedIn

1. Open your web browser and go to www.linkedin.com.
2. On the home page of LinkedIn, you will see a sign-up box. Click on the highlighted boxes and type first name, last name, email address and password to protect the account. Then click agree & join

Join LinkedIn

First name

Last name

Email

Password (6 or more characters)

By clicking Agree & Join, you agree to the [LinkedIn User Agreement](#), [Privacy Policy](#), and [Cookie Policy](#).

Agree & Join

Already have an account? [Sign in](#)

3. You will be asked to provide some basic information to get your profile started. Enter country and city/District and then click next.

Let's start with the basics. Where are you located?

We'll recommend posts and people near you.

Country/Region *

City/District *

Next

4. Then it will ask you about your experience. Fill the fields and then click next

What's your most recent experience?

This will help other people recognize you.

Most recent job title *

5. LinkedIn will send you an email to verify. Go to your email and then open the mail received from LinkedIn and then confirm by clicking “Confirm your Email Address” button or enter g-digit pin in the browser and click verify

Confirm your email to activate your account

We sent the verification code to ejyothikiranmayi@gmail.com.



Your privacy is important

We may send you member updates, recruiter messages, job suggestions, invitations, reminders and promotional messages from us and our partners. You can change your [preferences](#) anytime.

Didn't receive the code? [Send again](#)

Agree & Confirm

6. Next, you will be asked to import contacts from your email account and see if any of them are on LinkedIn already. This will help you find “Connections” on LinkedIn quickly.

Sync your contacts to see who's already on LinkedIn

We'll periodically import and store your contacts to suggest connections and show you relevant updates. You control who you connect to, and you can [manage your contacts](#) anytime.

[Learn more](#)

Continue

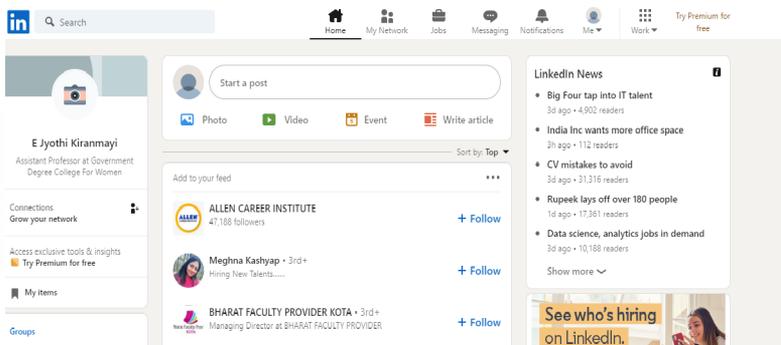
Skip

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Then LinkedIn will prompt you to do a few options such as connect with a few people you may know, add a profile picture, or subscribe to job alerts related to your field. If you want to skip any of these you can skip.

| | | |
|---|--|--|
|  Dr. Nirmala Asst. Professor Of English at Govt Degr... |  Deepa Pal My journey to explore more in the field of... |  Vishnumolakala -- |
|  Uma Regatti Technical assistant at Ekalavya Model... |  afreen niaz -- |  Deepthi S Teacher Development Professional, Material... |

Then LikedIn will take you to the homepage of your account



The screenshot shows the LinkedIn profile of E Jyothi Kiranmayi, an Assistant Professor at Government Degree College For Women. The page includes a navigation bar with icons for Home, My Network, Jobs, Messaging, Notifications, Me, and Work. The main content area features a 'Start a post' section with options for Photo, Video, Event, and Write article. Below this is the 'Add to your feed' section, which lists several organizations: ALLEN CAREER INSTITUTE (47,188 followers), Meghna Kashyap (3rd+), and BHARAT FACULTY PROVIDER KOTA (3rd+). The right sidebar displays 'LinkedIn News' with several articles, including 'Big Four tap into IT talent', 'India Inc wants more office space', 'CV mistakes to avoid', 'Rupeek lays off over 180 people', and 'Data science, analytics jobs in demand'. At the bottom right, there is a 'See who's hiring on LinkedIn.' banner.

1.4.2.3 Pros and Cons of LinkedIn

Pros

- **Free to use:** Users can sign up freely. It offers almost everything for the users to create their profile, to research, to showcase their skills. It's a platform where job seekers can stay connected and employed, expand their profession growth, business people can make connections, promote their products and can reach the target audience
- Get updated with latest industry news

Cons:

- **Time consuming:** Significant amount of time must be invested before the users learn how to use the platform efficiently. User has to spend considerable amount of time to build their profile, build network, links and to initiate conversation with their network.
- **Premium subscriptions are expensive:** LinkedIn allows the users to join free of cost, to create profile and to research relevant information. But LinkedIn charges for better and additional services. This platform offers three types of premium subscriptions: Hiring, Business, and sales. The

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monthly premium subscriptions are expensive especially for the users who are using it for personal use

- **Spam messages:** This is one of the biggest problems of LinkedIn. Just like other networking sites LinkedIn is filled with spam messages. LinkedIn users often report about spam message received from friends, people they don't know and connection requests from fake profiles. LinkedIn is filled with spam messages from recruiters, employers and job seekers. The intention of the spam messages is to grab attention, mislead and even to extort money also.
- **Privacy Issues:** While creating profiles on LinkedIn the users loads lot of personal information to seek the attention of potential employers. On such a big platforms like LinkedIn the personal information of the user might get leak causing privacy breach and risk of identity thefts

1.4.2.4 Conclusion:

- Tumblr may not be a top social networking site today but it is still attracting young users because it's a perfect place for bloggers and it also acts as a search engine for online journals
- Though LinkedIn has some disadvantages it is a powerful platform for professionals and business

References:

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6. <https://techboomers.com/t/create-linkedin-account>
7. <https://techboomers.com/t/create-tumblr-account>
8. <https://techboomers.com/t/page/13>

Chapter 1.5

Facebook, Flickr, Skype

1.5.1 Facebook

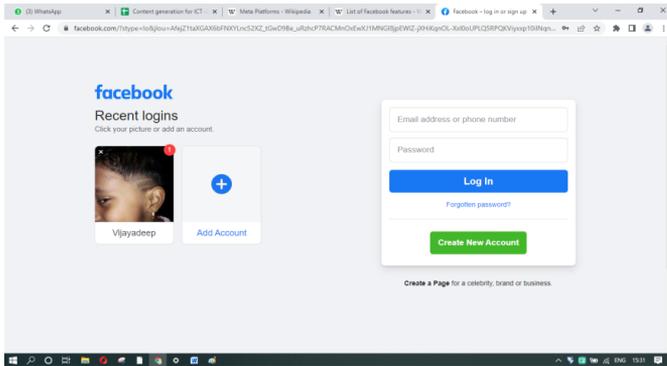
Meta Platforms Inc. formerly known as Facebook Inc. is an USA based multinational company started operating in the year 2004 with Mark Zuckerberg, one of the founders as Chairman and CEO. Eduardo Saverin, Andrew McCollum, Dustin Moskovitz and Chris Hughes are the other co-founders of Facebook Inc. Meta Platforms Inc. founded by Mark Zuckerberg, is considered as one among the top performing Information Technology Companies in US.

Facebook is a social networking platform mainly used for the purpose of sharing textual and multimedia data with friends and in groups. Initially only the desktop version of Facebook was available, but with the popularity and availability of Smart Phones mobile app was developed and placed in play store. Facebook is now available both as an app and as a desktop site.

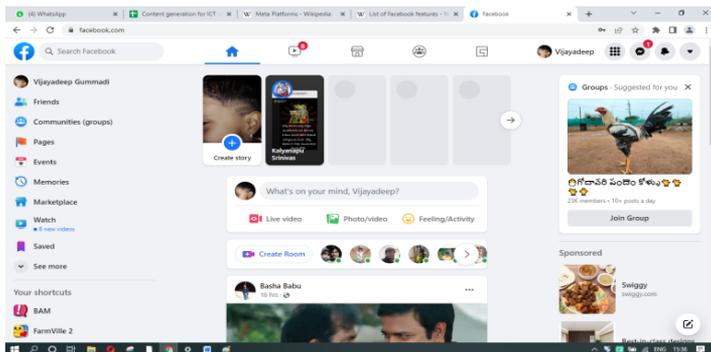
In our Country, India, Meta is operating under the name Facebook India Online Services Pvt Ltd. Facebook has established it's office in Hyderabad and support centre in Chittagong.

1.5.1.1 Creating Facebook account:

Enter the URL <https://www.facebook.com/> in any browser and the page appears as shown below.



Existing users can enter their login credentials in the space provided as shown in the figure. New users can create their account by clicking on “Create New Account” button and entering the required data. Once the users login with their credentials, the home page will look like the below figure.



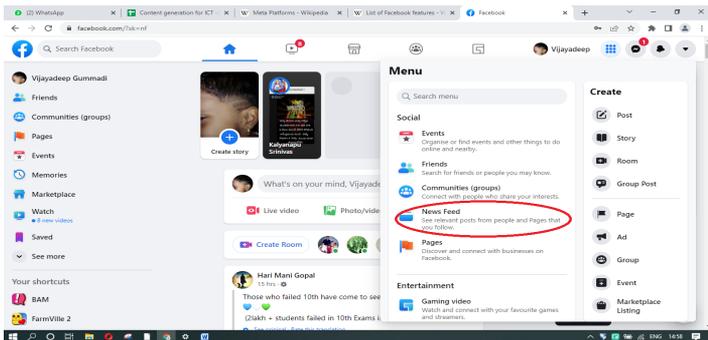
1.5.1.2 Features of Facebook:

1. **News feed:** It is a primary feature which enables the user to update regarding the happenings among his friends. This

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highlights the information with regard to profile updates of friends, important dates like birthdays, wedding anniversaries, and many other updates like upcoming events.

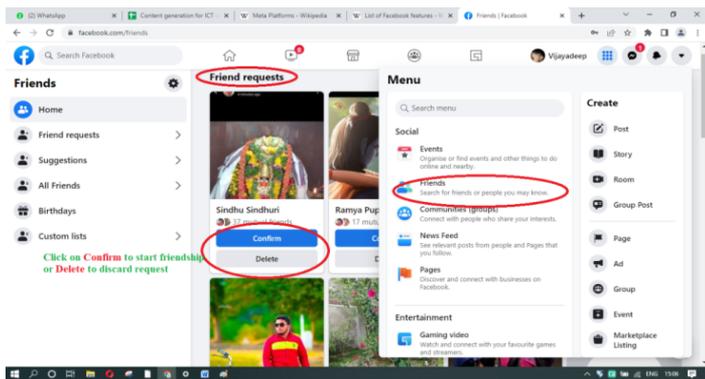
This facility provided by Facebook can be misused by illegitimate users in the form of creating misleading updates like birthday or any other, to attract the users and to trap them. So, the users are to be cautious in reacting to updates received.



- 2. Friends:** Friending is one of the attracting features of Facebook. One user who is having an account can send a friend request to another user on Facebook. The receiving user can either accept the request or deny the request. If the request is accepted then both the users become friends on Facebook. If the request is denied then the sender can send the request again at a later time and the request is removed from pending friend requests of receiving user. The receiving user can also select the option “Not Now”, which enables him to take decision at a

later time as the request is not removed from the pending requests of the receiver.

Initially a friend of friends, who is not a direct friend of a user can see the profile and notifications are sent. This feature has raised some security concerns and was disabled later.

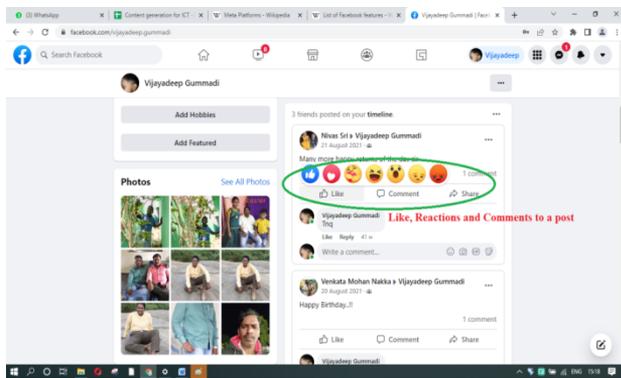


The user at any time can remove another user from his friend list. This is unfriending or defriending and users will not be notified regarding unfriending.

3. **Wall:** Initially user is allowed to post only text but later was extended to post attachments. The number of attachments was limited to 40 only. This was replaced by Timeline.
4. **Timeline:** It is used to recollect the happenings of users' profiles in chronological order.

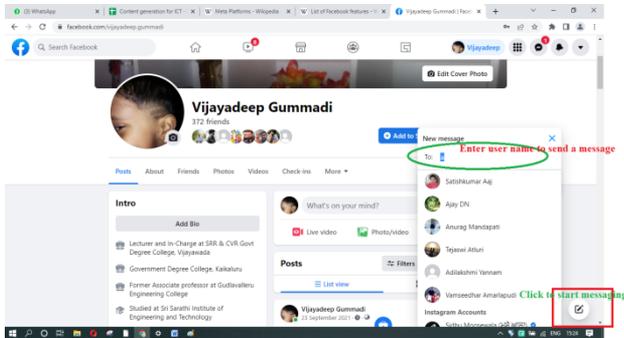
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- 5. Likes and reactions:** The users can interact to the posts, photos, updates etc., made by other users through clicking on the thumb symbol button provided at the bottom of it. The user can also react to the post, photo or any updates by clicking on the emoji's provided, which appears by moving the cursor over the thumb button. Statistics regarding number of likes will also be provided.
- 6. Comments:** Users can comment on the posts, photos or updates shared by other users. Users can generally express their views or opinions in the form of text or symbols through this comments section.



- 7. Messages and Inbox:** Usually the posts are not one-to-one and can be viewed by all (depending on the permissions given). If one comments on a post, that can be viewed by all the users in his friend list. If a user wants to share something personally with a particular, then he has to compose a message and send to that particular user using id as shown in the picture below.

The sent message will appear in the inbox of the receiver and he can reply privately to the sender. This feature is just like mailing provided by many service providers.



Facebook messenger is an app available for sending messages to any user personally. This is just like a mailing feature.

8. **Groups/Communities:** This enables the like-minded users to form a group and share their opinions among themselves. Anyone can join or leave the group at anytime.
9. **Pages:** A user can create a page to promote his business or organization or activities by choosing an appropriate name to that page and category describing the type of business or organization or activities that this page represents. The user can also add images, contact information or any other updates that he wants to share with the followers. A user can like a

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page to get latest updates and he will be called a follower of that page.

10. **Profile and Cover Photos:** Profile pic is what is displayed to users in their friends list. Cover photo occupies the top portion of the home page of one's account. Users can change their profile and cover photos as and when they want to do so.
11. **Notifications:** If any user make any changes to his/her profile or posts something or likes or comments posts, they will be sent to other users in the form notifications. Users will also be notified regarding birthdays' or anniversaries of other users in their friend's list.
12. **Gaming:** Users can also play games like Farmville provided under Games tab.
13. **Events:** Users can create events and share with other users. Events can be either Online or In Person type. Events details like Name, Date and Time are to be added, later can be shared with a particular person(Private) or Friends or Group or with everyone(Public).

1.5.2 Flickr

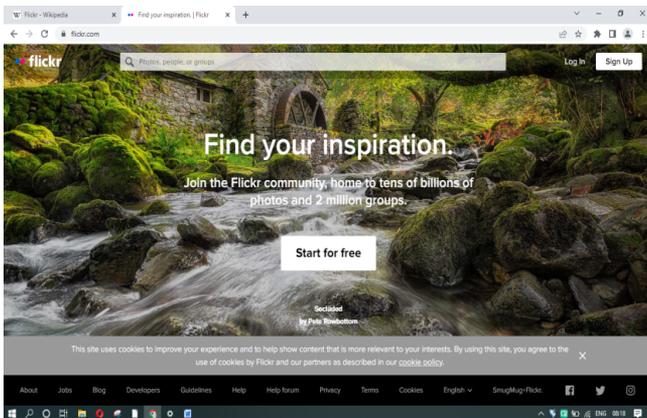
Flickr is a social networking site used mainly for the purpose of storing photos and multimedia data; it was founded in the year 2004 by Stewart Butterfield and Catherine fake. It was founded in Canada but is now operating from San Francisco, California, US as its headquarters.

Flickr is a media platform used for uploading, organizing and sharing of digital content such as photos and videos. Flickr is not meant for professional photographers only, but anyone who has an interest in photography can start using flickr to pursue their interest.

In the year 2005 flickr was acquired by Yahoo! which was later taken over by Verizon Communications in the year 2015. In the year 2017 once again there was a change in ownership of flickr from Verizon Communications to Smugmug. Smugmug after acquiring flickr from Verizon Communications has put an end to 1 TB of space available for its free account users. Smugmug has asked its free account users to either upgrade themselves to “Pro account” status or their storage will be restricted to 1000 photos.

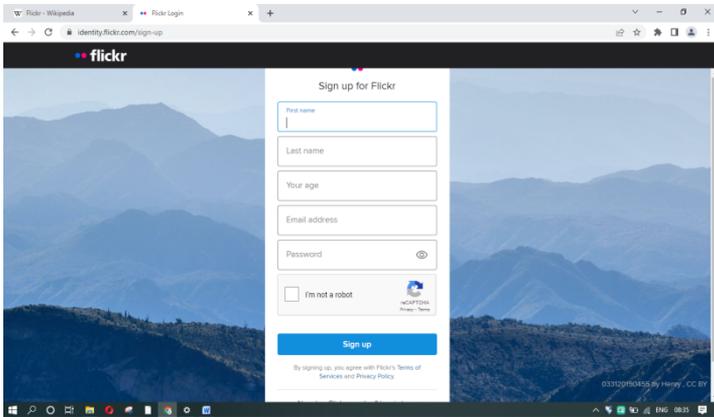
1.5.2.1 Creating the Account:

Users can enter the URL: <https://www.flickr.com/> to create an account and the home page looks like the below image.

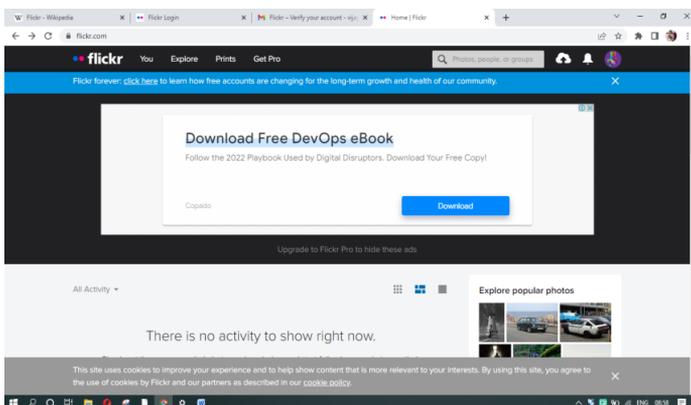


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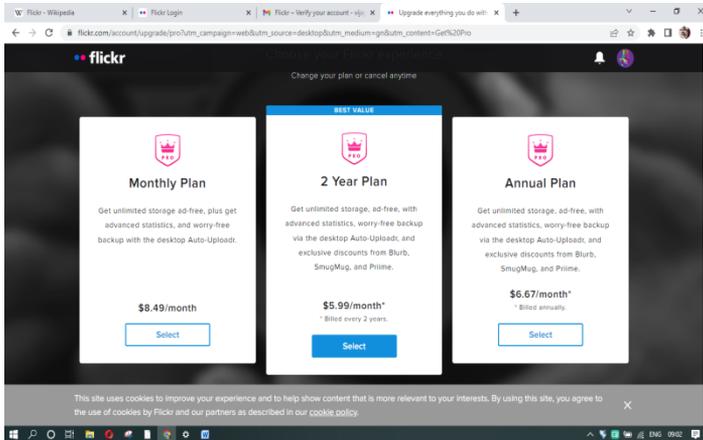
New users have to click on “Sign Up” and create their account by entering the required details as shown in the below figure. Once the user enters the details and click on “Sign UP”, a mail will be sent to the given mail id for mail verification. Users have to click on the link sent to mail for verification before the link expires in 24hours.



Existing users have to click on “Log In” and enter their credentials. On successful authentication home page will be displayed as shown below:



Existing users can upgrade their account to “Pro” status by clicking on “Get Pro” button and can choose one of the three storage existing plans as per one’s requirement.



1.5.2.2 Features of Flickr:

- 1. Accounts:** Flickr offers two types of accounts to its users. 1 is a free account where the memory space is limited to accommodating 1000 photos or videos, with videos limited to 3 minutes. Once the free users exceed the limit of 1000 photos, they will be automatically denied of uploading new photos or the older one’s get deleted automatically from their account. Second is a pro account, which offers unlimited storage, advanced statistics advertising free browsing and videos upto 10 minutes in length.

Flickr provides an option to reverse their account termination in order to avoid accidental deletion of flickr account by its users. Flickr may also delete accounts of its users without any prior intimation to the owners of the account.

2. Organization

The images uploaded by a user into Flickr go into sequential “photostream”. Photostream is the basis for Flickr. All photo streams can be displayed as a justified view, a slide show, a detail view or a date stamped archive. Using titles and descriptions, users may name their images. Other users can also tag the photos as done by the owner of the image if permitted by the owner. These titles, descriptions and comments uploaded by the users enable searching in Flickr. Flickr is a pioneer in implementing tag clouds containing most frequently and popularly used words.

Unlike the concept of folder, used to organize files or photos, Flickr uses the concept of “Album” to organize photos. These albums can be easily embedded into blogs, websites and forums. Albums in Flickr are a kind of metadata used for categorizing the photos. The photos organized as albums can be geotagged, and the geotagged albums can be related to a map using [imapflickr](#).

Organizr is a web application used for organizing the uploaded photos by a user. It allows users to modify tags, descriptions and set groupings, and to place photos on a world map, provided with the support of Yahoo! Maps. Ajax is used to improve the look and feel of the photos. Users can select multiple photos at a time and apply changes on all of them at once.

3. Access Control

A user while uploading an image can set privacy controls that determine who can view the image. Photos uploaded can be marked as either public or private. Images flagged as private are visible only to the owner by default, but they can also be marked as viewable by friends and/or family.

Privacy settings also can be decided by adding photographs from a user's photostream to a "group pool". If a group is private only the members of the group can view the photo. If a group is made as public then the photos uploaded can be viewed by all the members of the group and non-members of the group as well i.e., by any user of Flickr.

Flickr also provides a "contact list" which can be used to control image access for a specific set of users. In November 2006, Flickr added a new feature by name "guest pass" system, this allows private photos to be shared with

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non-Flickr members. This setting allows sets or all photos under a certain privacy category (friends and / or family) to be shared.

4. Interaction and compatibility

The core functionality of the site relies on the features of standard HTML and HTTP, making almost platform and browser neutral. Images can be posted to the user's photostream via email attachments, which enables direct uploads from many camera phones and applications.

Once signed-in, one user can "Follow" the Photostreams of other user and vice-versa is not mandatory. A user's homepage contains a stream of their Contacts' photos that occupy about 65% of the user screen.

A Group can be started by any user at any time with the members of Flickr who have common interests. The user who started the group becomes the administrator of that particular group and he can appoint some members as moderators of the group. Groups can be formed by providing open access or through invitation only. The administrator of the group can set restrictions for the content shared in the group, assign awards to the members of the group and can manage the content of the group. Photos shared recently in the group will appear on a member's homepage and the group

photos may appear as in “Justified View” or as a “Slide Show”.

One user can systematically arrange the photo streams uploaded by other users when they are permitted to do so by the owner of the photostreams i.e., when the photo streams are made publicly visible.

Any user can comment on the photos uploaded by another user provided the user is permitted to do so by the photo owner. The owner of the photostream can disable comments from other users if he feels so. A user can “Favorite” the photos shared by some other users. Photos marked as “Favorite” will appear as in “Justified View” or as a “Slide Show”.

At present Flickr is compatible across all Operating Systems including iOS. Users can directly upload their photos from mobile or desktop.

5. Filtering

In March 2007, Flickr added new content filtering controls that let members specify by default what types of images they generally upload (photo, art/illustration, or screenshot) and how "safe" (i.e., unlikely to offend others) their images are, as well as specify that information for specific images individually.[1] Images uploaded by users can

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be categorized to one of three categories: "safe", "moderate" and "restricted". Users can filters when searching for images. All users don't have the same privileges while searching for any images. Non-members must always performSafeSearch. Safesearch option filters images that are categorized as potentially offensive. Whereas the members of Yahoo!, whose accounts indicate that they are not potential adults may use SafeSearch or moderate SafeSearch, but they cannot turn off SafeSearch completely. Flickr provides a relatively better separation of family-friendly photos and adult content; generic image searches normally produce no pornographic results, with the visibility of adult content restricted to users and dedicated Flickr communities who have opted into viewing it.[1]

6. Licensing

Starting May 1, 2022, Flickr is enforcing the new limit on moderate and restricted content shared by free account users.If a free account contains any moderate or restricted images after this date, those images will be removed from the account as they are violating the terms of service provided by Flickr. Accounts found in violation of limits will need to either subscribe to Flickr Pro or remove the restricted content.For these purposes, moderate content is defined as images containing partial nudity, like bare breasts and bottoms.

Restricted content is defined as images containing full-frontal nudity or sexual acts.[1]

From May 17, 2022, Flickr has started removing non-public content, violating Flickr's new free account limit policies. This applies to Free accounts with more than 50 non-public photos (private, friends, family, or friends and family).[1]

1.5.3 Skype

Skype is an application developed by Skype Technologies, a division of Microsoft, which can be installed on a computer, laptop or a mobile device. This was developed by Niklas Zennström, Janus Friis and four other developers in the year 2003. Niklas Zennstrom is a Swedish entrepreneur and technology investor. Janus Friis is a Danish entrepreneur known for developing Kazaa, a file-sharing application. Later in the year 2005, Skype was taken over by eBay. In the year 2011, Microsoft bought Skype to replace its Windows Live Management. Before the year 2020, Skype occupied most of the market share regarding video and audio callings. During the pandemic period, Zoom has taken over most of the market space from Skype.

Skype provides a method of making phone calls using internet bandwidth instead of traditional fixed line telephone or mobile phone. Skype uses VoIP (Voice-over Internet Protocol) technology for making video calling and video conferencing.

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Skype can be used to send files (including photos, documents or presentations of any size) and share the screen with others. Skype may also be used as a form of Instant Messenger with no sound or vision and just text. Skype is also used to make audio calls using a simple headset with microphone and video calls using a webcam.

1.5.3.1 What does it cost?

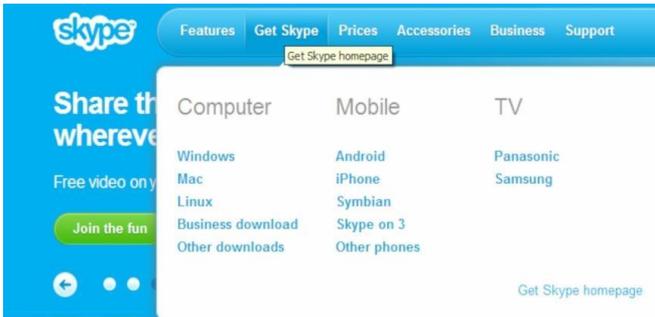
Skype is based on VoIP technology for making calls. For the users who wish to make basic audio calls between two computer users or a conference call spread across the world or one-to-one video calls or sharing files and/or screen with other skype users, skype provides all these basic features for free. The bandwidth consumed for utilizing these basic features is billed by their Internet Service Provider (ISP) while billing their monthly bill that is to be paid at once on a monthly basis.

If the user wants to make a video conference call comprising a group of 3 to 10 members or wants to make a call to mobile or landline then he has to purchase credits or subscription. The user can purchase those from the Skype website using his login credentials. This feature is not for free as it appears while using the basic features.

1.5.3.2 Installing Skype on your machine:

Go to <http://www.skype.com> and click on Get Skype at the top of the page. If you are using a Windows Desktop Computer Or Laptop,

click on Windows underneath the Computer.



Click on Download Skype under Skype Free section and you will be asked to save the Skype Setup.exe file. Click on Save File, this will save the file at the specified location you have chosen on your computer. It may be your desktop, documents or a specific downloads folder. If you are prompted for a downloads window appearing on your browser, double click on this file to begin installing on your desktop. Alternatively, you can browse to the file on your computer and double click on it (or right click and choose open from the context menu, if you prefer) to begin the installation process. Follow the setup wizard to complete the installation.

1.5.3.3 Starting Skype



To start Skype

If it's your first time opening Skype:

- 1** **Open Skype on your computer.**
That means double-clicking this icon on your desktop or choosing it from the Windows > Start menu.
- 2** **Click Don't have a Skype Name?**
This opens a Create account window.
- 3** **Type in your name, then create a Skype username (called a Skype Name) and a password.**
 - Pick ones you can remember so you can sign in next time.
 - Follow the directions from there and click Sign in.

If you've opened Skype before:

- 1** **Open Skype from your desktop or Windows > Start menu.**
- 2** **In the start-up screen, click in the box under Skype Name and type it in. Then do the same for your password.**
(If you forget your password, click the Forgot your password? link and follow the directions from there.)
- 3** **This will sign you in to Skype, ready for you to use.**

Get up and running

Download Skype

It's quick, easy and free.

Add contacts

Friends, family, colleagues – search for them or add them instantly if you know their Skype name.

Make a free Skype call

Choose a contact and click the call button



Adding a single contact

To add a contact:

1. Sign in to Skype.
2. In the menu bar, click **Contacts > Add a Contact**.



3. Enter the Email, Phone number, Full name or [Skype Name](#) of the person you want to add.

Email

Phone number +44

Full name ✕

Skype Name

+ Add

4. If the Skype account of the person you wish to add is displayed, click **Add** below the contact.

Email

Phone number +44

Full name ✕ 1 match found

Skype Name

Adding Contacts

Users can create their contact list by adding single user at a time or in bulk by importing contacts from existing mail account.

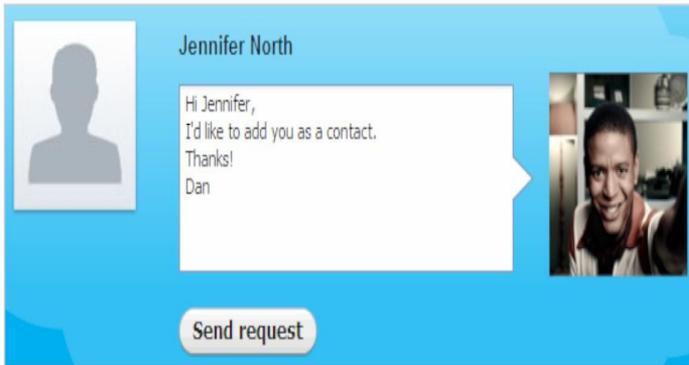
5. If more than one Skype account matches your search:
a. Click **View** for a list of matching Skype accounts.



- b. From the list of matching accounts, click **Add contact** next to the one you wish to add.



6. More information on the Skype account you have selected is displayed. Confirm that this is the account of the person you wish to add by clicking **Add**.
7. Before the contact can be added, you must send a contact request to that person. Enter some text to introduce yourself and click **Send request**.



8. The contact will be added to your contact list, but will appear offline until they accept your request. Once the person agrees to your request, they will be added to your Contact list. You can then make [free calls](#) and [video calls](#) to that person, and [send instant messages](#) and [files](#) to each other.

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Importing multiple contacts

To import contacts from the address book of your email account:

1. Sign in to Skype.
2. In the menu bar, click **Contacts > Import Contact**.

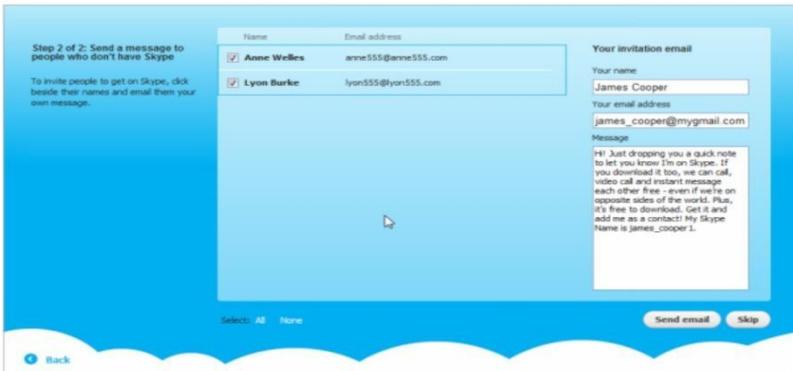


3. Select the type of email account you have. If you can't see your email account, click the dropdown arrow for more options.
4. Enter your username and password and click **Import**.



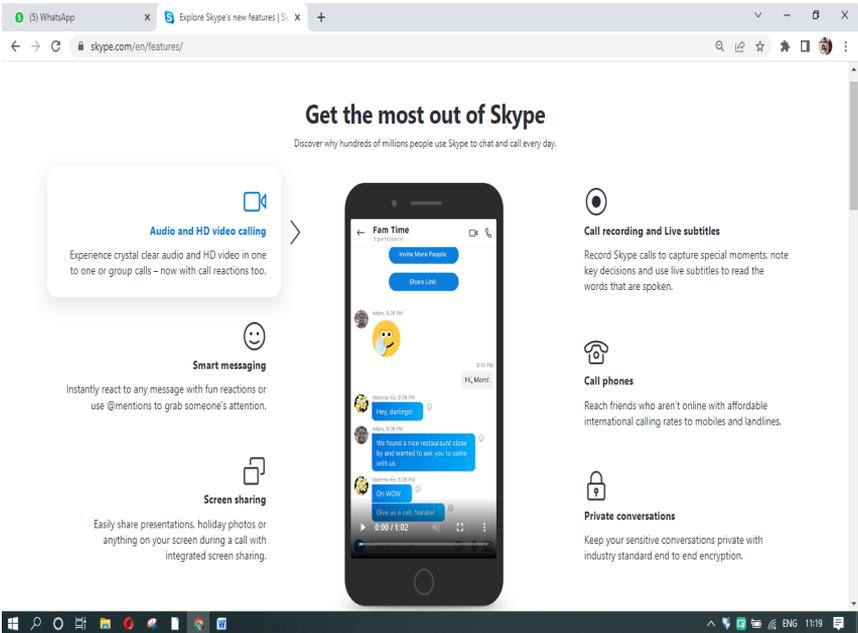
5. Step 1: Add people from your address book who already have Skype accounts or phone numbers associated with their email accounts.
 - o If any of the people you have selected already have Skype accounts or phone numbers associated with their email accounts, these will be listed in the **Connect via** column.
 - o Select the contacts you wish to add and click **Add contacts**.
6. Step 2: Send a message to people who don't have Skype.
 - a. Select the people you wish to send a message to.
 - b. Enter a message or use the message provided.
 - c. Click **Send email**. Sending an email will invite the selected friends to download and install Skype so you can call, video call and instant message each other.

If you don't want to send any messages, click **Skip**.



1.5.3.4 Features of Skype:

1. Audio and HD video calling.
2. Smart messaging.
3. Screen sharing.
4. Call recording and Live subtitles.
5. Call phones.
6. Private conversations.



Making a Call

In the picture shown below, click on Call(for audio only)orVideocall after selecting the name on your contact list and you will be connected.

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Calling someone who's on Skype

You can talk to anyone else on Skype, anywhere in the world, for free.

First you need to find your friends who are using Skype and add them to your contact list. When you've added your friends, it's really easy to call them.

To call someone in your contact list:

1 In Skype, click the **Contacts** tab.



2 Find the person you want to call. If you have lots of contacts, you can type a name into the search box to find the person you're looking for.

3 Click the contact. You will see their details in the main window.



Answering a Call:

How do I answer a call?

When someone calls you, the call alert window appears on your screen giving you four options.



Just click one of these options:

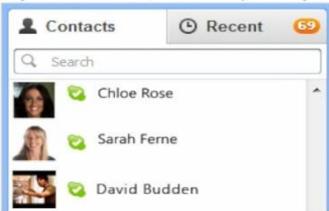
- o **Answer** - answers the call as a voice call.
- o **Answer with video** - answers the call and starts video, so the caller can see you.
- o **Decline** - hangs up on the caller.
- o - click and select a contact to [transfer the call](#) to

When any one makes a call using skype, the receiver's window will be like the one shown in the above picture. The receiver has to click on either "Answer or Answer with Vide" button if he wishes to attend the call. The receiver can also click on Decline button if he doesn't want to attend the call. The receiver can also transfer the call to a person on his contact list by clicking on "transfer the call" link.

Making a VideoCall

To make a video call:

1. Sign in to Skype.
2. In your contact list, select the person you want to call.

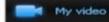


3. Check that the person you want to call is online. If they are,  will be displayed next to their name. [Learn more](#) about status settings.
4. In the calling area, click  **Video call**. Your video call will begin when the person you are calling answers.



Viewing the video from your own webcam

When your video is on, you can view the video from your own webcam by rolling your mouse over



Click  in the video to keep the view from your webcam displayed, and click and hold  in the top right corner of the video to resize the view from your webcam.

To reposition the video, click and hold your image, then drag it to where you want it to be displayed. You can place it in any of the four corners, or underneath the video of the person you are calling.

Click  to stop viewing the video from your webcam.



Changing the way your video call is displayed

It's easy to display your video call in the best way for you. The following table shows you how.

| To... | Click... | Notes |
|--|---|--|
| View the video call in full screen mode |  | Click again to exit full screen mode. |
| View the video call in a separate window |  | You can drag the new window to any location on your screen, and it will appear on top of other windows. Close the window to return to Skype. |
| Zoom in on the video |  | Click again to zoom out. This option is only available if the video you are receiving is high-quality or HD. |
| Hide the Contact list |  | Click again to show the Contact list. |

Turning your video off

You can turn your video off at any time during a video call. If you do, the person you are calling will not be able to see your video, although you will still be able to see theirs.

To turn off your video, click  and click it again to turn your video back on. When the button is blue, your video is on, and when it is white it is off.

Using other Skype features while on a video call

While on a video call, you can send instant messages, share your screen, and take video snapshots of the person you are calling. The following table shows you how.

| To... | Click... | Notes |
|---|--|---|
| Add more people to your video call |  Add people | From the list of contacts that is displayed, select a person to add to the video call and click  |
| Send an instant message to the person you are calling |  | Type your message and press Enter . Click the button again to hide your instant messages. |
| Share your screen |  Share | Click Show entire screen to share your entire screen, or Select window to choose which window to share. |
| Take a video snapshot of the person you are calling |  Snapshot | To send the video snapshot to the person you are calling or anyone else, click Share and select the person. To view your video snapshot files in Windows Explorer, click Locate . |

Sharing the Screen

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How to start screen sharing

Download Skype

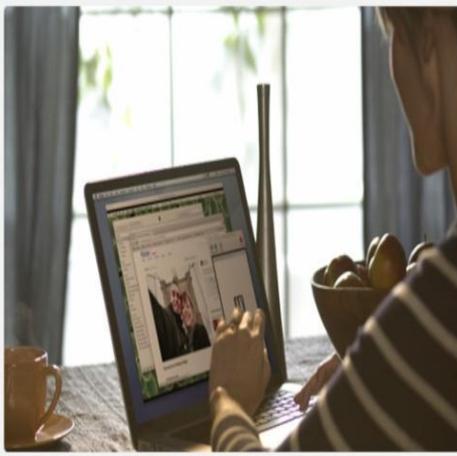
Download the latest version of Skype.

Make a video call

Call one of your contacts.

Share your screen

Click the Share button in the call window.



Show people exactly what you're talking about

Screen share a presentation over a call and stay in control, show friends and family photos without having to send them - even show gran how to use her email by doing it on your screen and having her watch.

Making a Conference Call

Download Skype

Download the latest version of Skype and add contacts.

Choose Skype contacts to call

Or add phone numbers you want to dial in too.

Make a conference call

And get more done, for free.



Make it face-to-face with group video calling

Getting everyone who matters on one call is even better when you can all see each other.

This requires a subscription



References:

1. <https://en.wikipedia.org/wiki/Flickr>

2. https://blog.flickr.net/en/2022/03/17/flickr-forever-2022/?utm_campaign=flickr-tos-2022&utm_source=Flickr&utm_medium=blue-banner&utm_content=text-link

e-resources:

1. <https://www.facebook.com/>
2. https://en.wikipedia.org/wiki/Meta_Platforms
3. https://en.wikipedia.org/wiki/List_of_Facebook_features
4. <https://en.wikipedia.org/wiki/Flickr>
5. <https://www.skype.com/en/>

Chapter 1.6

Yahoo Youtube and Whatsapp

1.6.1 Yahoo

In the year 1994 two budding engineers by name Jerry Yang and David Filo, from the department of Electrical Engineering of Stanford University developed a website and named it after their names called “Jerry and David’s guide to the world wide web”. Later in the year 1994 itself they renamed their website as “Yahoo!” and registered their website domain name as “yahoo.com.”

The word "yahoo" is a backronym for "Yet Another Hierarchically Organized Oracle" or "Yet Another Hierarchical Officious Oracle". The term "hierarchical" described how the Yahoo database was arranged in layers of subcategories. The term "oracle" was intended to mean "source of truth and wisdom", and the term "officious", rather than being related to the word's normal meaning, described the many office workers who would use the Yahoo database while surfing from work. However, Filo and Yang insist they mainly selected the name because they liked the slang definition of a "yahoo" (used by college students in David Filo's native Louisiana in the late 1980s and early 1990s to refer to an unsophisticated, rural Southerner): "rude, unsophisticated, uncouth." [1]

Yahoo! Offers a wide range of products. They are listed as:

1. Communication products

- a. **Address book:** Yahoo collects data from the mails sent or received by the users. The collected data is used for providing better experience to users. The collected data is used for the following purposes:
- i. To send and receive your mails.
 - ii. To provide filters to search your mail inbox, organize and customize your inbox.
 - iii. To provide filters to highlight certain emails you receive over others, that contain shipping information, travel information, documents or photos
 - iv. Filters to identify spam, malware or other phishing mails or other means of cyber problems.
 - v. To send promotional mails or messages to users that they are interested in, with the permission of the user.

Yahoo also analyses our commercial mails received from retailers or other organizations. These commercial mails are in a structured fashion. The mails received from any individuals will not analysed to ensure privacy. The mails received from commercial organizations will only be analysed. This analysis works based on the following:

- i. Whenever any commercial emails are received, yahoo tries to identify keywords, package tracking and product identification numbers, and prices. During this process anything that provides user identity like mail address or name will be automatically removed.
- ii. This analysed data is used for providing parcel tracking.
- iii. With the consent of the users, the analysed data is used to personalize and customize the commercial contents and promotional messages. To ensure user privacy:
 - a. Personal information of users will never be shared with advertisers.
 - b. No mails or any content of mails will be shared with anyone.

If access to user's Gmail data is provided to Yahoo, Yahoo will only access such data that provides ability to compose mails, send, read and process data including attachments and this data will never be shared with anyone unless it is required to improve the features, strictly complying

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with cyber laws. Yahoo will never use Gmail data for the purpose of advertising.

Users, at any time, can withdraw the consent given for analysing the data by setting the privacy controls.

b. Yahoo Calendar: Yahoo calendar is used to manage users' appointments or events. Users can set the privacy controls such that the event information can be viewed publicly by everyone or by a particular set of selected users or private (Not viewable to anyone). If the appointment or events are allowed to be viewed by others, the owner or the user who created the event can choose the appointment to be hidden or mark it busy or can be viewed with details.

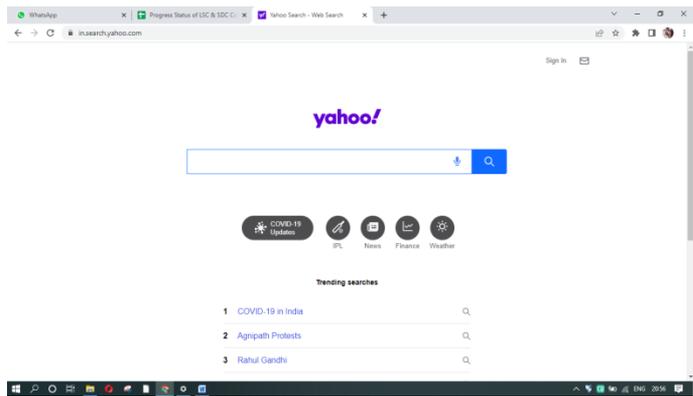
Setting the permissions: Click on the "Options" tab that appears on the calendar window. Then select the settings as per the requirements. Any appointments or events created thereafter will have these permissions by default. But the events created prior to setting the permissions will not be affected. Users can also choose to change the settings for a particular event individually by using the edit option available with that event.

c. **Yahoo Groups:** Whenever user sends a mail to another user of Yahoo, generally the information like Sender's name, Sender's mail id and sender's status will be displayed to the receiver along with the mail. If a user wants to send same information to many persons in his / her address book, then he / she have to do so by selecting the mail ids of each participant. This is a tedious task. This can be simplified by the concept of broadcasting to a group of persons rather than one-to-one communication. Users can create a group and name it as they wish. Once a group is created then invitation can be sent to other users to join the group. Mails or messages that are sent in the group are visible to all the members of the group. The members of the group will receive the message and can see the details of the sender. The user who created the group is designated as owner of the group and he/ she can designate some of the other members of the group as moderators. The owner and moderators of the group can see and control who has joined the group and when. The details of

the users like User name, user Yahoo id, email address are visible to the Owner and the moderators.

2. Search products: Yahoo search products include Yahoo Search, AOL(America Online) Search and OneSearch.

a. Yahoo Search and AOL Search:Users can search for a product using Yahoo Search. This collects the user information like device type, device identifiers, IP address, users agent information and user search query. This information collected will be used to improve the search experience of the users in future operations. This information helps in suggesting the relevant related information along with the contents user are searching for. Yahoo uses IP address to determine user location and provide users with information specific to user location, such as maps, local business listings and reviews, or local events. The ads displayed to the user are personalized based on the search history. Using Search Preferences, users can manage their search experiences, which include SafeSearch, number of results per page and alerts regarding harmful content.



- b. **OneSearch:** It is privacy oriented search that does not collect user information based on search history. It will not track users. It provides pure and unfiltered results. As search history is not maintained, it will not provide customised and personalised searches and will not prompt ads.
3. **Subscription products:** Yahoo provides certain products like Yahoo Mail Pro, only on subscription. These subscription products are not available throughout the globe. They are restricted to certain areas. While subscribing for a product, Yahoo collects the payment information from users to complete the transaction and enable to use the products subscribed for. This information is maintained very securely and will not be shared with anyone. Users can view, edit or cancel their subscriptions. If a user subscribes a product and

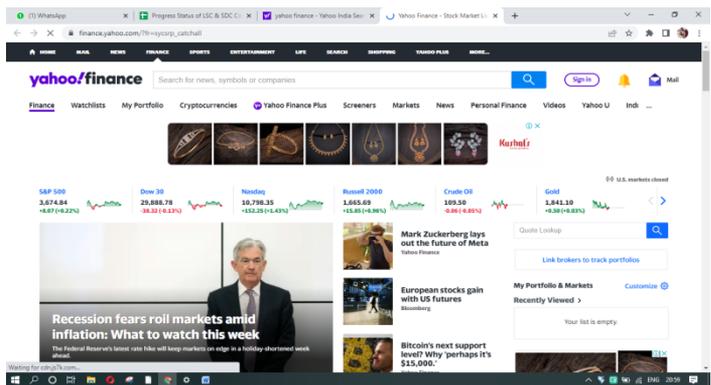
changes his location later, then that information like terms and privacy policy will be updated as per the new location. If subscription products are not available in the new location the user had moved to, then Yahoo can't serve the user as subscription products are not available in that area.

4. **Media products:** Yahoo media products include Yahoo News, HuffPost, Yahoo Finance, AOL Finance, Yahoo Weather and Yahoo Answers.[2] When users visit Media Products, Yahoo collects the information like browsing activity, location, items watched, products they like and follow, media they search and consume, and information provided by users directly. Yahoo collects this information to provide users with personalised ads, videos, and other products and services. Users can also make suggestions and provide feedback with regard to products, so that the products can be improved for better satisfaction of users.

- a. **Yahoo Answers:**Users can post their questions; answer to a question posted by some other users or can comment. Yahoo collects user information like email address or nickname. User activities will be linked to the name that they select and will appear by that name. All the questions, answers or comments posted by one user are visible to all other users of “Yahoo Answers Site” and the sites that share the contents of “Yahoo

Answers”. The users can also answer, ask or comment anonymously, then the identity of the users will not be revealed to public as they appear as anonymous. Since May 2021 this feature is removed from Yahoo products list.

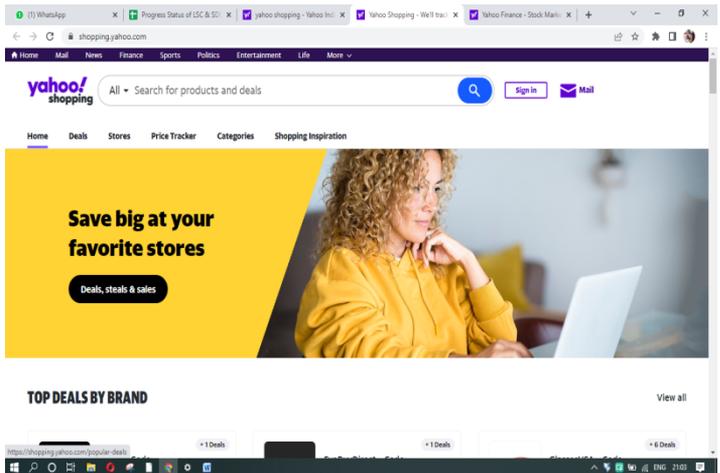
- b. **Yahoo Finance/ AOL Finance:** Yahoo Finance and AOL Finance have relationships with partners who provide tools that are linked to these products. When these tools are used by the users then the partners of Yahoo collect information from users directly. Yahoo is not responsible for the privacy policies of sites or tools that are linked from Yahoo Finance or AOL Finance.[2]



- c. **Yahoo Shopping:** Yahoo uses the queries and browsing history of users to provide them with customised and personalized ads and suggestions.

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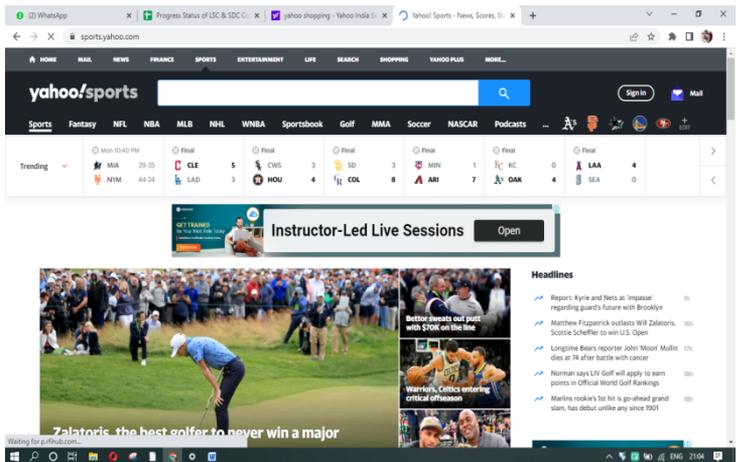
Whenever users make any transactions with the vendors listed on Yahoo Shopping, they are directly interacting with the vendors. The vendors are solely responsible for the use of users' personal information and order history, Yahoo is not responsible for any misuse. So, the users can manage data by making use of privacy control feature provided by Yahoo.



- d. **My Yahoo:** My Yahoo enables users to personalise the news feeds, articles and other web services that they are interested in. Users have to register themselves with Yahoo to make use of customised services of My Yahoo. Users can make use of web services provided by Yahoo and other third parties like YouTube. Yahoo will collect user information regarding how they interact, to personalize, customise and to improve user

interaction. The third parties may also collect user information based on their interaction and use it as per privacy policy. Users, at any-time can remove the modules used for interaction with third parties by selecting appropriate buttons available on the interface.

- e. **Yahoo Sports:** This provides a platform for sports information happening across the world at one place. This covers the information regarding major tournaments across the games and sports. It also collects the raw emotions of players for their followers. Users email address is visible to others in a league by default and can be modified to appear invisible for each league using privacy settings.



References:

1. <https://en.wikipedia.org/wiki/Yahoo!>
2. <https://legal.yahoo.com/ie/en/yahoo/privacy/topic/ourproducts/index.html>

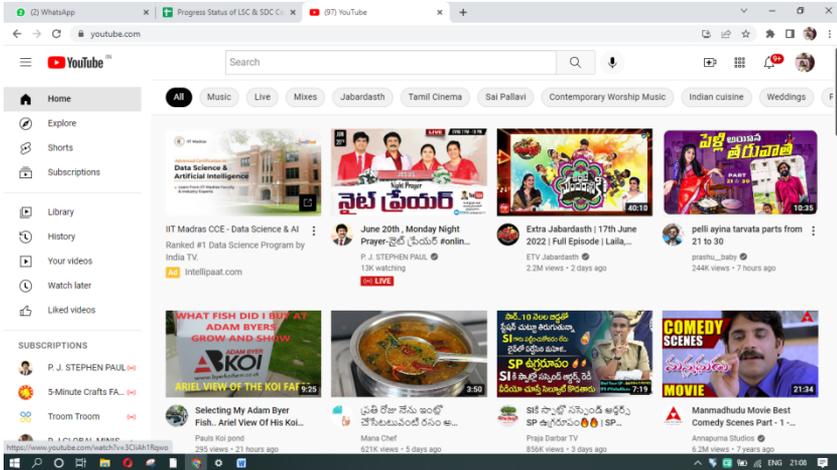
1.6.2 YouTube

Introduction

YouTube is an American based company started in the year 2005. It is mainly an online video sharing and social media networking site started by Jawed Karim, Steve Chen, Chad Hurley. They started their operations from San Bruno, California as headquarters. YouTube is now owned by Google. After the change in ownership, YouTube has expanded through mobile apps, network television and the ability to work across different platforms. It is one among the most visited sites by people across the globe.

Creating an Account: Existing users of Google can easily login into YouTube and access its contents for free. YouTube collects the information like email address, browsing history and location to provide personalised and customised search results to its users. Based on the browsing history and location, YouTube also sends notifications on the latest happenings in the areas of user interests. YouTube earn its revenue by playing ads while users are watching some content. YouTube won't charge anything from users for

watching the contents. If users don't want them to be interrupted by ads while watching anything, they can upgrade themselves to premium by paying subscription fees.



1.6.2.1 Features:

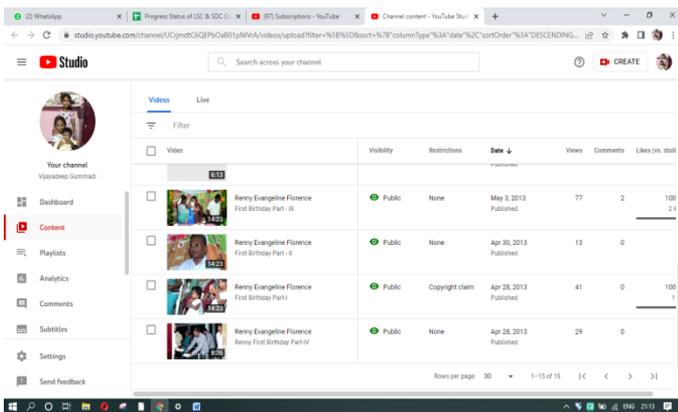
1. **Video technology:** YouTube primarily uses the VP9 and H.264/MPEG-4 AVC video codecs, and the Dynamic Adaptive Streaming over HTTP protocol. In 2021 it was reported that the company was considering requiring AV1 in streaming hardware in order to decrease bandwidth and increase quality. [1]

Initially when YouTube was launched, it required an Adobe Flash Player plugin to be installed on desktops to videos. Later in the year 2010 YouTube released a new version that has built-in multimedia capabilities as a pilot

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project. This was a success and users today don't require any additional plugins to be installed on their desktops to watch YouTube videos.

- 2. Uploading videos:** Existing users of YouTube can upload their videos of maximum duration of 15 minutes. Initially when YouTube was launched it allowed users to upload videos of longer duration but it was found that most of the longer videos are unauthorized videos i.e., recorded videos of television shows and films. As a result the duration was limited to 10 minutes in 2006 and was later enhanced to 15 minutes duration from July 2010. All the uploaded videos can amount upto 250GB or 12 hours duration. YouTube doesn't allow users to upload videos with full or partial nudity or adult content.

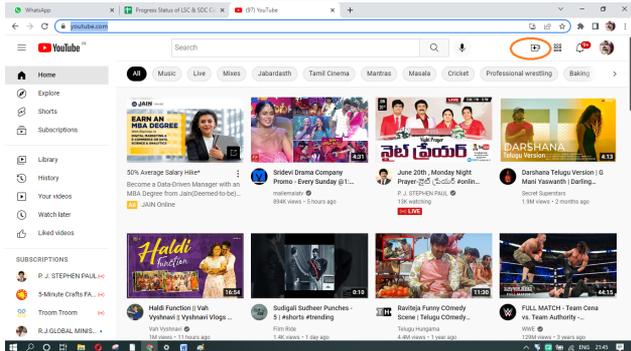


- 3. Live Streaming:** YouTube started live streaming in the year 2009 on experimental basis when it streamed the interview

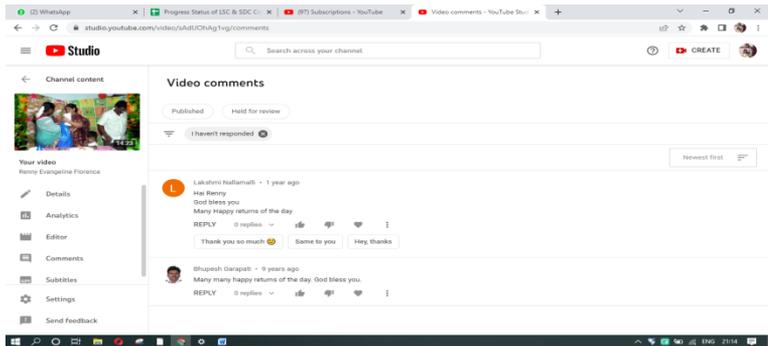
with Barack Obama, the then President of USA and a concert. Actually this telecasting was done in collaboration with third parties. Later YouTube has developed its own technology to support live streaming. Initially the creation of live streams was limited to some selected users and at present anyone can do live streaming.

Verified users with a minimum of 1000 subscribers are allowed to go live on YouTube in May 2013, later the number of subscribers was reduced to 1000 in August 2013 and in December 2013 the limit was removed. From February 2017 onwards, live streaming was made available on YouTube mobile app also, with a restriction of minimum 10,000 subscribers but from mid-2017 the restriction of subscribers was reduced to 100.

Now any user having a YouTube account can open his / her channel and start live streaming even without minimum subscribers.

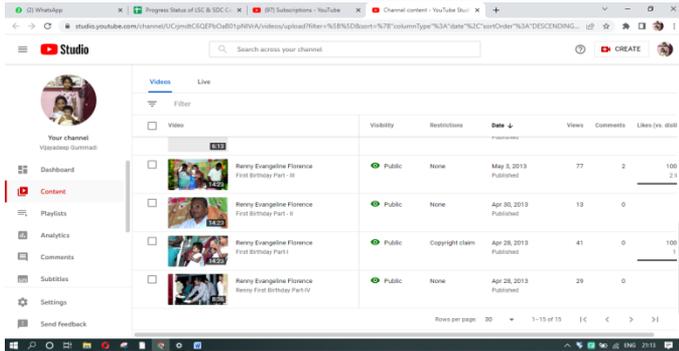


- 4. Content accessibility:** Each video uploaded into YouTube has an HTML code associated with it. This enables the video to be embedded on any social networking page or blog. This also allows the videos to be viewed outside the web page. YouTube provides a unique id for each of the video uploaded.
- 5. Comments:** For each of the video uploaded, the viewers can leave their response in the form comments. Initially viewers are allowed to leave video comments but later this feature is removed as it was not used many viewers. At present comments are in the form text and emojis provided. Users have to login with their credentials to comment on the videos.



- 6. Child Safety:** This feature when used will not allow adult content to be displayed to users below the age of 18 years. YouTube collects the information like age to confirm that the users are not below the age of 18 years when they are accessing adult contents. Age confirmation is done by making use of email address of the user.
- 7. Channels:** Users can create their channels to upload their personalised contents. These contents include video lectures regarding the subjects of user expertise. These days channels are used for education, entertainment and for sharing knowledge.

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Resources:

1. <https://en.wikipedia.org/wiki/YouTube#Features>
2. <https://www.youtube.com/>

1.6.3 WhatsApp

Introduction

WhatsApp Messenger or simply WhatsApp was developed by Jan Koum and Brian Acton, former employees at Yahoo in the year 2009. It was developed as an alternative to SMS (Short Message Service). Later in the year 2014 WhatsApp joined Facebook but continues to operate as a separate app with the focus on building a messaging app that works faster and reliably.

At present WhatsApp have around 2 billion users across the world. These days people find it a way to stay in touch with their friends and family members. WhatsApp offers a simple, reliable and secure means of sending and receiving messages and a variety of

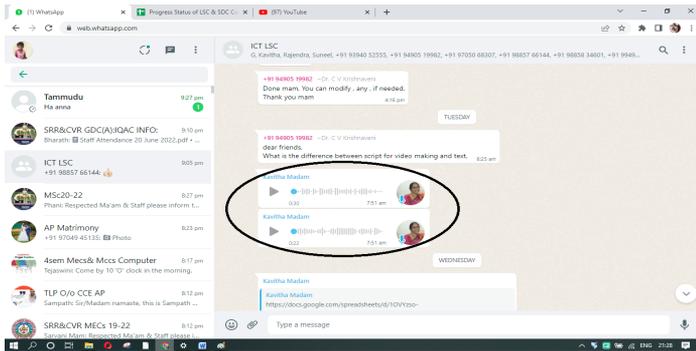
media like text, documents, photos and videos to friends and family members across the world. It also provides audio and video calling facilities.

WhatsApp is a cross platform messaging app that uses voice over Internet Protocol (VoIP) technology. It is owned by Meta Platforms, an America based company. It is available both as an app and desktop versions.

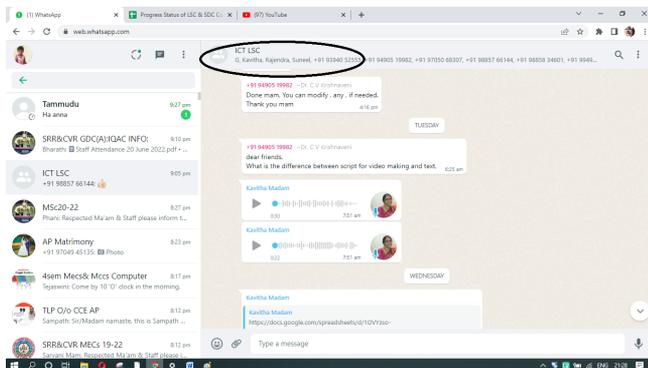
Creating an account: Mobile users with a valid phone number and active internet connectivity can create a WhatsApp account. The following steps help to create an account:

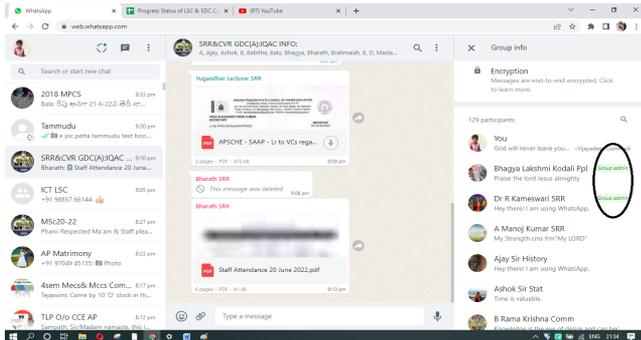
- Download WhatsApp app from playstore
- After downloading, click on open
- Agree to the terms and conditions
- Click on “ok” button to allow WhatsApp to access your contacts
- Click on “Allow” button to enable WhatsApp to send notifications
- Then enter your mobile number along with country code
- A activation code will be sent to the number provided, enter the code and complete verification process.

Now WhatsApp is ready to be used. Users can set their display picture, edit profile, and set a name. Picture can be either directly captured or uploaded from gallery. The name given



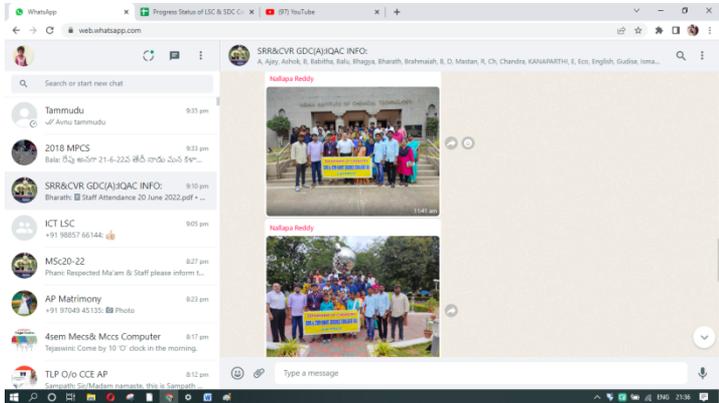
- Group Chats:** Users can create group with the existing contacts. He / she can also send invitation link to users of WhatsApp to join his / her group. Messages sent in the group are visible to all the members in the group. The one who created the group is called the “Admin” of the group. The admin can change the group settings to either restrict or allow the members to send messages in the group. The admin can also nominate some other members of the group as admins that means a group can have multiple admins.



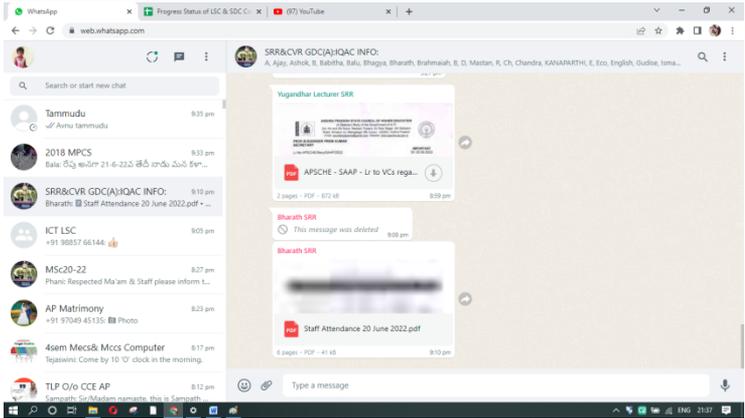


- 4. Speak Freely:** Using the feature of audio and video calling, users can make calls at free of cost. Audio calls involve only voice whereas in video calling users can see other and express their views. Users across the world can make use of this calling facility to maintain contacts with their near and dear. Users can make one to one calling or group calling. At present group calling option is limited to 8 persons at a time.
- 5. Keep the communication going:** WhatsApp is available both on the web and as App. This keeps the users to communicate even while travelling on the gadgets of their choice and convenience. WhatsApp chats on mobile and computer are synchronised from time-to-time to maintain consistent information.
- 6. Share moments:** These days people are fond of photography. Whatever may be the event either happy or sad occasions, they take photos and preserve memories. These memories collected can be shared with their near and dear

ones using WhatsApp. Not only photos but also videos can be shared using WhatsApp. The memories created and collected can be shared either with a single person or with a group of persons.



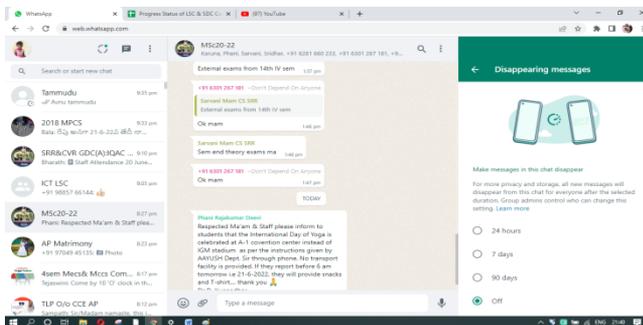
- 7. Security by default:** WhatsApp uses end-to-end encryption techniques to provide security to the messages, documents or photos shared among users. As most of the users share their personal information, WhatsApp takes utmost care in preserving users' data by upgrading security policies from time-to-time.
- 8. Documents:** Text files, word files, spreadsheets, slides, PDFs and many more types of documents can be shared very easily among WhatsApp users in the form attachments. Users can send upto 100MB files very easily. Even apks can also be sent.



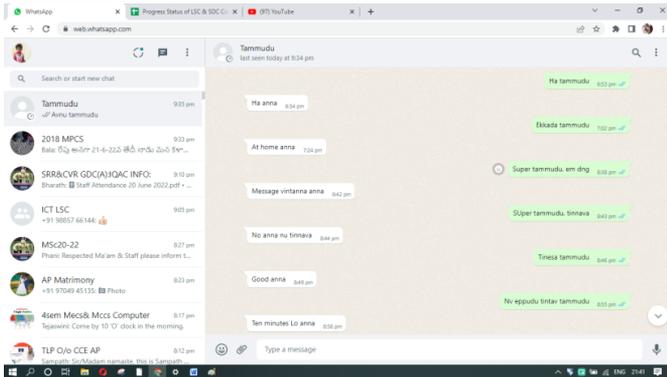
9. **Money transfer:** This feature is added very recently to provide users with the option to transfer money while texting messages. The users need to link their bank account with their WhatsApp and can start transferring money very easily. This feature enables users to make digital transactions and avoid standing in queues at banks and ATM machines.

10. **Disappearing Messages:** Generally the messages exchanged between sender and receiver include documents, images, audio and video messages. Generally these type of messages consume more memory space on mobile. This is a major concern for users these days. To overcome this problem, WhatsApp has come up with a feature called “disappearing messages”. When this feature is turned on, the messages that user receives or sends will be automatically erased after a period set using settings option. This will save users’ memory.

But users have to be careful while choosing this option because some important messages will also be erased.



11. Acknowledgements: WhatsApp ensures secure and reliable message transfers. Whenever any message is transmitted by sender to receiver, the sender will be acknowledged regarding the delivery of messages to receiver. When a message leaves sender mobile or system, a single tick appears on sender chat window and when it is delivered to the receiver, double ticks appear in ash colour. These double ticks change their colour to blue when receiver opens or reads the message, confirming that the receiver received and read the message. Users can disable this feature by selecting appropriate options in settings tab.



References:

1. <https://www.whatsapp.com/>
2. <https://web.whatsapp.com/> desktop version of WhatsApp

**Scan the QR Code to
Watch the Video Lesson**



**Scan the QR Code to
Watch the Video Lesson**



Chapter 2.1

E-mail

2.1.1 Introduction

Email has grown in importance as a means of communication, and while it may appear to be a relatively new medium of communication, it has been there for much longer than most people realise.

Email is a type of electronic communication that was established in the 1970s to make communication more efficient during the era of letters and telegrams and has altered the way people connect with one another. Ray Tomlinson is known as the "Father of Email" since he was the first to send an email message between two computer systems for ARPANET. Email is named by the fact that it is an electronic mail sent to a person or a system, and unlike regular mail, it does not require the use of a physical letter or paper. An email account and an internet connection are required instead of a postal service and an address.

2.1.2 Email History

In 1965, a computer programme at the Massachusetts Institute of Technology (MIT) referred to as "MAILBOX" contained the very

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first example of email. Users of computers at MIT were able to use this programme to leave messages for other users of computers at the university, and those users would be able to view the messages the next time they logged on to the computer. However, in order for the system to work well, all of the individuals who desired to connect with one another needed to make frequent use of the same computer.

ARPANET, which stands for the Advanced Research Projects Agency Network, was established by the United States Department of Defense in 1969. It is a network that links multiple computers located all throughout the department for the goal of facilitating communication inside the organisation.

On October 29, 1969, a computer was able to communicate with another computer for the first time via ARPANET. **Ray Tomlinson** is credited with inventing and developing electronic mail in its current form in 1971. He did this by designing the networked email system that was used by ARPANET.

The "at" symbol, which is likely to be Ray Tomlinson most significant and long-lasting contribution to the internet. Since that time, addressing an email with "username@name of machine" has been the de facto standard for indicating the recipient of a message. This has made indicating the destination of a message as easy as addressing the message itself.



(Source: <https://phrasee.co/wp-content/uploads/2016/03/tomlinson-@.jpg>)

By 1976, electronic mail constituted seventy-five percent of all traffic on the ARPANET. Because the medium had shown to be so beneficial, ideas started to emerge regarding how one could be able to send an electronic mail message to a user who was using a computer that was not part of an internal network.

The idea that different organizations may communicate with one another through email served as the driving force for the development of the internet itself.

As the use of email to communicate between organizations became more widespread, there was a corresponding increase in the demand for software that could store and organize such emails. The forerunners of the contemporary email inbox were rapidly established as a result of this development.

By the 1980s, while the internet was still in its infancy, Internet Service Providers (ISPs) had begun linking people from all over the world, and email "hosting" sites began to sprout up, fighting

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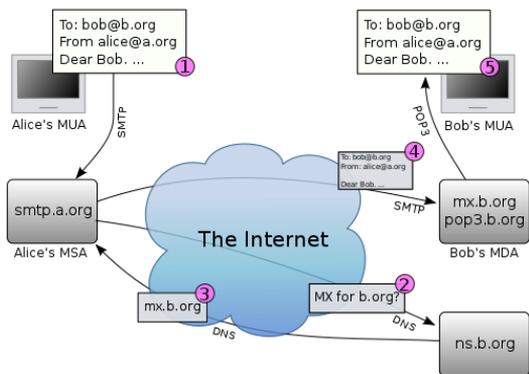
for their share of the market share. This was the beginning of the internet age. E-mail was the first practical application of this innovative new medium for many people who were just getting started with the internet.

By 1993, the term "electronic mail" had been supplanted in the general language by the term "email," and the use of the internet had become more ubiquitous.

America Online (AOL), Echomail, Hotmail, and Yahoo each played a significant role in reshaping the internet and email scene during the subsequent several years. They invested a lot of money in marketing in order to make the World Wide Web more accessible to a significantly larger number of people and to make them aware of its many advantages.

2.1.3 Conventional Method of Working of Email

This diagram provides an illustration of what takes place when one person sends email to another using the conventional manner.



(Source:

<https://upload.wikimedia.org/wikipedia/commons/thumb/7/72/Email.svg/527px-Email.svg.png>)

In this particular illustration, Alice is communicating with Bob by e-mail.

1. To begin, Alice uses her e-mail client to compose a message that she sends to Bob. Her e-mail application assembles the message for her together with a few other pieces of information, such as her email address, the email address of the person to whom she is writing, the time at which she is sending her message, and so on. Following a set of guidelines known as the Simple Mail Transfer Protocol, Alice's email application, when it is ready, will transmit the message to a centralised computer that is known as a mail server (or a Mail Transfer Agent).
2. The mail server that Alice is using to send her message (smtp.a.org) receives the message that Alice is sending and then examines the address to determine where the message is being sent. The mail server will next access the internet in an effort to identify the mail server that Bob is utilising. This is accomplished by having a conversation with a Domain Name System (DNS) server, which is a computer that maintains records about how to locate certain computers on the internet, such as mail servers.

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3. The DNS server provides the mail server that Alice is utilising with the correct address for the server that Bob is employing in order to get his email (mx.b.org).
4. The message is delivered to Bob's inbox after being sent from Alice's mail server to Bob's email server and then being deposited there by Bob's email server.
5. Bob opens his e-mail software and downloads his messages using either the Post Office Protocol (POP) or the Internet Message Access Protocol, depending on which set of rules he is using at the time (IMAP). The most recent communication from Alice is included in his messages.

2.1.4 E-Mail Definition

Electronic mail (or e-mail or email) is an Internet service that allows persons who have an e-mail address (accounts) to send and receive electronic letters. Those are somewhat like postal letters, except that they are sent much faster than mail when sending over great distances, and are generally free.

- An email is a technique of transmitting communications immediately from one system to another via the internet. Email usage was initially limited to users on the same computer, and it required users to be online in order to receive messages. Time has passed, and we now know how the mailbox seems. The mail can be sent to several recipients, and the recipient's name can be disguised from other recipients by including their names in the Bcc section. The process begins with the assistance of an email client, which connects to a server called Simple Mail Transfer Protocol over the internet. The server is given a dedicated port to aid the client in sending and receiving messages via email. The header information must be preserved in order for the recipient's email address to be correct. The information is converted by SMTP in order to transport the mail content across the ports. Because the @ symbol serves as a separator between the name and the mail server, SMTP looks for the mail server after the @ sign.
- Email service providers include Outlook, Gmail, Thunderbird, and others, and messages can be sent and received from any of them. When the domains differ, SMTP searches the Domain Name System for the domains, and an IP address is used to send a signal to the recipient's server informing them of the

email. The gateways are now open, and mail is being sent to the new server, and communication is taking place.

2.1.5 Advantages of E-mail

- **Easy to use:** Sending and receiving messages over e-mail is relatively simple. It aids with the management of contacts and enables for the speedy sending of emails. An e-mail can be sent from any computer with internet connectivity anywhere in the globe.
- **Environment Friendly:** Using the electronic mailing service also saves the fuel that is consumed in the process of transporting letters.
- **Speed:** It is possible to send an email throughout the world in a relatively short time. The service of e-mail allows for significant time savings.
- **Data Storage:** The providers of e-mail services make available to their customers sufficient capacity for the storage of data. The users' experience of storing and organising their mail is simplified by this approach.
- **Provision of Attachments:** Users are able to transmit a large number of files in a single email thanks to the function attachment. Furthermore, the addition of attachments to emails does not result in an increase in cost like it does with the postal service.

- **Reliable and Secure:** The use of an electronic mailing service, as it is known today, is widely regarded as being among the safest methods of online communication.
- **Use of Graphics:** E-mails enable users to communicate with one another by sending colourful greeting cards and fascinating photographs.
- **Advertising Tool:** In today's day and age, a great number of people and corporate organisations are making use of the e-mail service in order to advertise their goods, services, and so on. As a result, electronic mail can also be used as a promotional tool.
- **Easier for Reference:** In the event that a person needs to respond to an e-mail, he or she has the option of attaching earlier messages that were either sent or received. The communication process can benefit from the use of emails like these as a point of reference.
- **Automated E-mails:** It is possible to send automated emails with the assistance of specialist applications such as auto responders, which make this feature possible.

2.1.6 Disadvantages of Email

1. **Hacking:** Hacking refers to the process of penetrating computer systems in order to gain unauthorised access.

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E-mails are the target of this type of security attack, which is carried out by hackers.

2. **Viruses:** Viruses can spread to other parts of a computer system besides only the programmes themselves, such as data files or the boot sector of the hard drive.
3. **Crowded Inbox:** After a given amount of time has passed, the inbox of the e-mail box will begin to accumulate a lot of mail. Users will have a difficult time managing large quantities of data when using emails.
4. **Lengthy mails:** If a message is too lengthy, the recipient may become disinterested in reading it all the way through till the conclusion of the mission.
5. **Internet access is required:** It is necessary for the systems to have internet access in order to send and receive messages through e-mail; failing to do so results in the systems being unable to serve any mails.
6. **Checking the inbox regularly:** It is essential to check one's email account on a regular basis; otherwise, the user runs the risk of missing crucial and urgent communications.

2.1.7 User ID

A user ID is a one-of-a-kind identifier that is required in order to sign in to a certain website, application, or online service. It could be a user name, a number of an account, or an email address. User ID is how a computer system or network recognises a person. During the

logon procedure, a user is usually required to enter both a user ID and a password. The terms "user ID" and "username" are interchangeable in this context.

The user identification that you provide when you log in to your computer or internet account is what is contained within the user id. User ids have some mnemonic meaning. To clarify, Makarand is the name of one of our users. In order to access the internet, he must first enter his user id.

It is possible for him to use his own name as a mnemonic for his user id so that it is easier to remember. When compared to numeric ids such as 09t14586, the user in this scenario will have an easier time remembering their user id. If your name is SudharshiniTatrakallu, for instance, some sensible login names would be T Sudharshini, T. Sudha, T Sudha 14 etc., depending on the circumstances. In other words, the client may offer suggestions to help you create your user ids.

It is important to keep in mind that the case of the letters in e-mail names is typically irrelevant. That is to say that makarand and MAKARAND are considered to be the same. On the other hand, one is simpler to read and may demonstrate a slightly higher level of respect for the person who owns the account. If your name is Sudha, you shouldn't choose the name Sudha as your user name because there are several million people in the world with the same name. This user

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id would not be sufficient to uniquely identify you on its own. User ids can be any combination of alphabetic characters and numerical digits as well.

2.1.8 Password

One's identity on the computer is validated by entering a password, which is a special string of characters. This is used to determine whether or not you are the correct person to log in to the computer. You should be the only person who knows the password to your computer account, and no one else should be able to access your account on the computer. On most computers, there is a specific format, set of rules, or set of conditions that must be met in order to use it as a password. After the password has satisfied the requirements, the security measure will become effective.

If the password was taken from a dictionary, it is possible for another person to discover it by simply going through the dictionary and looking up each word. According to all of the online dictionaries, a strong password should have the following characteristics:

- Have a minimum of five characters
- Include a symbol that is not an alphabetical letter (such as &, %, etc.)
- Include a number
- The case of the characters in a password does not matter.
- Can use either upper or lower case.

If you are keen that your password is too easy to guess because it is too simple and too short, you should immediately change it in order to strengthen the protection of your computer account.

To keep email accounts and personal information safe, it's vital to create a strong password. a list of helpful tips so to ensure email accounts are secure.

Don'ts:

- Use your name, the names of your family members, significant dates such as anniversaries and birthdays, noteworthy locations, the term "password," or sequential lists of numbers or letters. These are all far too easy to crack and should be avoided at all costs.
- Look up words in a dictionary. When hackers try to break into your accounts, they use multiple dictionaries to try and crack your passwords. Both English and foreign words, as well as phonetic patterns, are included. So, while it may seem safe to open a dictionary and pick a word at random, it is not. Hackers can also search for common substitutions, so using '@' instead of 'a' or '!' instead of 'l' won't help. A random word with common replacements and numbers or symbols added to the end would take roughly 3 days to crack using a brute force attack.

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- Make a note of your password. It is easier for someone to access your accounts if you write down your passwords and keep them somewhere visible, especially near your computer. Instead, memorise and keep your passwords confidential.
- Use an unsecured Wi-Fi connection to enter a password. Everywhere you go, including cafés, book stores, restaurants, and shopping malls, you have the option of connecting to an insecure Wi-Fi connection. Connecting to these and entering your passwords for social media and email accounts may appear safe, but hackers can simply intercept your personal information.

2.2.1. Do's :

- Create unique passwords for each account. Take a moment to think over your present password predicament. Do you have a password that you use for Facebook, online banking, Amazon, and other sites? Is it possible for a hacker to gain access to several protected accounts by cracking a single password? To maintain optimal security, you should create a unique secure password for each of your accounts.
- Make your passwords as long as possible. The more secure a password is, the longer it is. Ideally, your password should be 12 characters or more, but if you must go shorter, make sure it is at least 6 characters.

- Use a combination of letters, numbers, and symbols. In order to build the most secure password possible, you should use a combination of lowercase and capital letters.
1. Make a phrase out of several words, such as 'allotment carrot human eats.' You may make it far more difficult for automated hacking software to guess your password by using four separate terms that are easy to remember. This method could take anywhere from a few days to over a hundred years to guess your password.
- Change passwords that are generated automatically. Some firms provide you with an automatically generated password when you sign up. As soon as feasible, you should replace this with your own.
 - Make use of the password analyzers that certain businesses employ. When you input your password, are you notified it's 'weak'? If this is the case, you should take note of it and make some adjustments.

Chapter 2.2

Email Addresses, Domain Names, Mailers

2.2.1 E-Mail Address

The initial concept of an email address emerged in 1970 at the Massachusetts Institute of Technology (MIT) in the form of an internal computer communications system. Email addresses at the time consisted of a username, an at symbol, and the name of the machine that was supposed to be the recipient of the message. This was because the computers that were talking with one another were all located in the same physical location.

Naming conventions evolved to take into account the plethora of new locations to which a message could be directed as the internet evolved into what it is today and the Domain Name System (DNS) came into prominence. This was necessary because of the proliferation of new locations to which a message could be sent.

After that, Internet Service Providers (ISPs) and websites that host email rose to the forefront of importance. The concept of electronic mail as we know it now emerged, and service providers like AOL, Hotmail, and Yahoo contributed to the development of the online environment.

There are three primary parts that make up an email address:

1. **The local part (i.e., the username).** Local-part usernames can be up to 64 characters long and can contain any combination of letters, numbers, and other 7-bit ASCII special characters (more on those later).

It is also permitted to use periods in the local-part, provided that they are not the first or last character and that they are not consecutive.

2. **The at sign (@).** The @ sign cannot be changed.
3. **The domain.** There are more stringent requirements to follow when it comes to the domain portion of the address. Its length cannot exceed 255 characters, and it must comply with the following criteria:
 - o The name must conform to the specifications for a hostname, which is the name given to a device that is linked to a computer network.
 - o Names must be shorter than 63 characters and may contain Latin letters, the numerals 0 through 9, and hyphens.

Example: sudharshini.mpc@gmail.com

The first part of the address in the preceding example is the User ID, which is written as sudharshini.mpc and refers to the recipient's mailbox. The following part, which comes after the @ symbol and is called the host name, is gmail. Domain Name is another

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name for the host name. This is the name of the company or organization that operates the mail server, and it also identifies the function of the server.

A "excellent" email address has a professional appearance and makes it simple to express the address verbally as well as in writing. It assists you in making a positive impression, gaining referrals, and eventually achieving success in a variety of professional contexts and settings. However, what exactly are the characteristics of a good email address?

The following are some of the most crucial characteristics of a decent email address for professional use:

1. **Memorable** Is there a good likelihood that a person will remember your email address if you give it to them and tell them it? Email addresses that are witty or funny can be effective here, but in most cases, it is best to stay with something straightforward.
2. **Simple.** Simple email addresses have the added benefit of being easier to remember, in addition to another significant benefit: they are less likely to be incorrectly entered. The less complicated it is, the less likely it is that someone will make a typing error when using it.
3. **Short.** The same method for avoiding typos should be utilised here. The best email addresses are typically succinct and to the

point. If everything else stays the same, the optimal number of characters is lower.

4. **Pronounceable.** Your email address should ideally be something that can be spoken easily. If you have to write down your address symbol by symbol or letter by letter, it is going to take more time for you to do so, and there is a greater chance that you will make a mistake. Make it simple and easy to articulate out loud.
5. **Trustworthy.** In addition to that, your email address needs to be reliable. You may demonstrate that you can be trusted by including a domain that is active and appears to be real, as well as by having the name section of your address sound as professional as possible. If you are going to have any kind of interaction with the clients, this is of the utmost importance.
6. **Unambiguous.** The typical format for an email might occasionally lead to some ambiguities that are uncomfortable to deal with. For instance, one popular format for the name of an email address is the first letter of the person's first name followed by their last name. But if your name is Darren Ying or Steven Hart, for example, your name might be rendered in this style in a way that sounds completely different when it is spoken aloud than it does when it is written down.

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7. **Familiar.** The majority of the time, using a traditional format for your email address is going to be the best option. People are accustomed to the formats and cadences of "normal" professional email addresses; hence, there is no reason to interfere with their preconceived notions by giving them something out of the ordinary.

2.2.2 Domain Names:

The portion of an email address that comes after the "@" symbol is referred to as the email domain. Yahoo.com, Gmail.com, and Outlook.com are the websites most commonly used for personal email accounts. On the other hand, when it comes to matters pertaining to commerce, businesses nearly always have their very own email domain.

A network or computer that is connected to the internet is referred to as having an internet domain. In an email address, the domain name is the part that comes after the symbol for "at," which is an at sign.

For instance, if you look at the email address sudharshini.mpc@ap.gov, you'll notice that "ap.gov" is the domain.

The final word in a domain, which is also referred to as the top level domain, provides a hint as to your affiliation. According to the table below, the meanings of the three-letter Top-Level Domains are as follows:

| Top level Domains | Meaning |
|--------------------------|---|
| .com | U.S.commercialbusiness,a company |
| .net | Network provider, internet service provider |
| .gov | U.S governmental agency |
| .edu | U.S educational institution |
| .org | Non-profit institution |
| .mil | U.S. military |
| .int | International |
| .biz | Business |

If there is a two-letter top-level domain, that is a country code. Here are some examples

| Top level Domains | Country |
|--------------------------|-----------------------|
| us | United states |
| uk | United kingdom |
| my | Malaysia |
| de | Germany(Deutschland) |

2.2.3 Mailers:

Yahoo mail, gmail, rediff mail etc., are examples of some mailers.

The majority of mailers include features that allow you to manipulate the contents of your mail box, compose new messages, and save existing messages to disc. A standard email client will have a series of buttons that have names like "compose," "copy," "delete," "edit," "forward," "move," and "reply," among others.

Buttons labelled "Compose," "File," and "Reply"

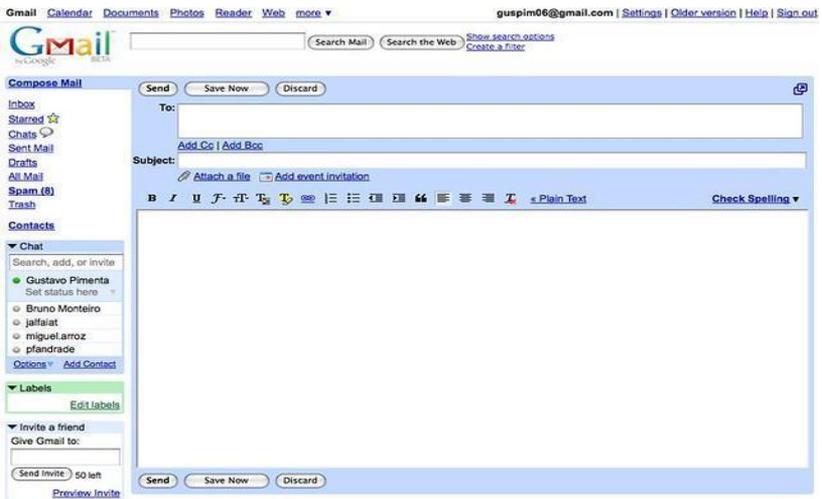
The following capabilities are offered by a Compose button:

- o Create a new message. This is brand new.
- o To respond to the current message, click the "Reply" button.
- o Forward – Convey the message to the next recipient.
- o The following are the capabilities of a button labelled "File":
 - o Save will store the currently displayed message in a file on your local disc.
 - o Insert means to incorporate a file into the main body of the message that is currently being crafted.
 - o Leave the mailer and exit the room.
 - o Open – Open a file from the disc.

- o The term "attach" refers to the addition of a file to a message.

The following elements make up a button labelled "Reply":

- o To sender
- o To all
- o Forward



(Source: https://farm4.staticflickr.com/3191/2904311626_085b6c1c84_z.jpg?zz=1)

Chapter 2.4

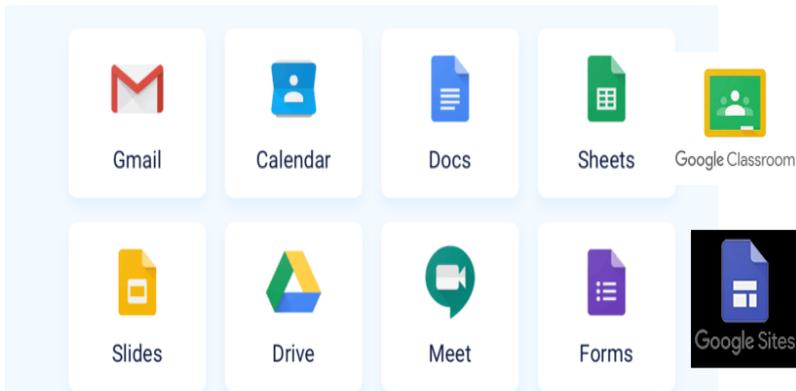
G-suite, Google drive, Google documents

2.4.1 G-suite

1. G-Suite is a collection of cloud-based productivity applications developed by Google that offers a wide array of web-based applications and services designed to help organizations communicate, collaborate and store data.

2. It provides Drive for storage, Gmail, Contacts, Calendar, Meet and Chat for communication, Google docs, sheets, slides for content creation.

3. The following diagram shows some of the G-suite applications



Note: Here we will discuss briefly about G-mail, calendar, Google Classroom, Meet and Google site applications and elaborately about Google Drive and Docs.

2.4.1.1 G-Mail: It is the most widely-used web email clients in the world. It is located on the cloud, so can download messages to multiple locations and sync our inbox across multiple devices. We can access our Gmail inbox from anywhere as long as we have Internet Connection

The following are the features of G-Mail:

- **Compose:** We can compose and send an email.
- **Attachments:** We can add an attachment to an email.
- **Search:** Google's powerful search engine is built right into Gmail.
- **Inbox:** A repository which accepts incoming messages
- **Priority Inbox:** Gmail automatically sorts our mails by moving the important messages to the top and separates them from everything else in your inbox.
- **Conversation View:** Gmail automatically groups together multiple emails in the same thread into one line in the inbox.

2.4.1.2 Google Calendar: It is a web-based calendar which we can use for keeping track of important events and coordinated meetings. It is a time-management tool which can be accessed from any computer,

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tab or mobile device from anywhere as long as internet is available. Integration with Gmail, Contacts, Drive, etc. makes it special.

Features that can help us better manage our Calendar are.

- **Suggested Times:** Find times when all invited guests can attend our event.
- **Gmail to Calendar Event Add** - When we receive an email with event details (time and/or date) we can add it instantly to our Calendar.
- **Add A Video Call to An Event:** We can turn an event into a video call.
- **Appointment Slots:** Allows users to set aside blocks of time on their calendar where others can reserve specific portions.
- **All Day Event Notifier:** Warn others when they try to schedule an event when we are not actually in the office that day

2.4.1.3 Google Classroom: It is a Free blended learning platform developed by Google for educational institutions

By using this app teachers can:

- Start a video meeting.
- Create and manage classes, assignments, and grades online without paper.

- Add materials to our assignments, such as YouTube videos, a Google Form survey, and other items from Google Drive.
- Give direct, real-time feedback.
- Use the class stream to post announcements and engage students in question-driven discussions.

By using this app students can:

- Track classwork and submit assignments.
- Check originality, feedback, and grades.
- Share resources and interact in the class stream or by email.

Parents can get an e-mail summary of their children's work

2.4.1.4 Google Meet: It is a video conferencing App that is available to schools for free through Google Workspace for Education

Features of Google Meet include:

- Two-way and multi-way audio and video calls
- Noise-canceling audio filter
- Low-light mode for video
- Ability to join meetings through a web browser or through Android or iOS apps
- Integration with Google Calendar and Google Contacts for one-click meeting calls

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- Screen-sharing to present documents, Spreadsheets, presentations, or other browser tabs
- Hosts being able to deny entry and remove users during a call.
- Ability to raise and lower hand

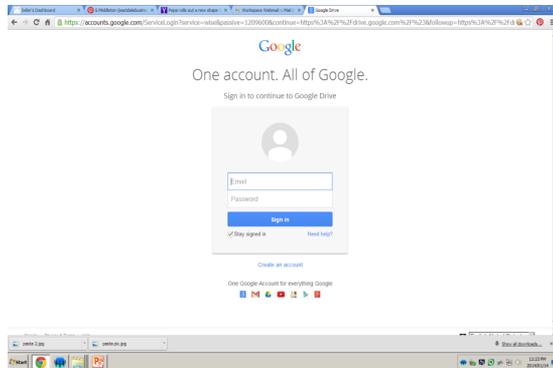
2.4.1.5 Google Sites: Google Sites is a free website builder from Google. We can create websites with collaborators by giving another Google user edit access. Google Sites are compatible with other Google services like Docs, Sheets, and Slides. Don't need any background in web development or coding to make a website. Every function is intuitive and user friendly. We can add images, links, YouTube videos and more to our website using simple templates.

Deleting and rearranging any of them takes only a few clicks.

2.4.2 Google Drive

1. Google drive provides on-line back-up of our data which is very useful in situations like hard-drive crash and data corruption.
2. It provides 15GB of free space.
3. Files in drive can be accessed by using any computer, tablet or smartphone from any location as long as internet is available.
4. We can easily share files or folders, so other people can view, edit, or comment on them.
5. Google drive has advanced search facility

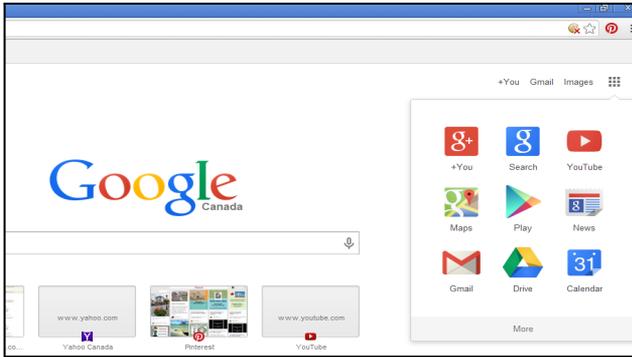
6. Google Drive is the home for Google Docs, Sheets, Forms and Slides.
7. We can Create and share our work online and access our documents from anywhere
8. We can manage documents, spreadsheets, presentations, surveys, and more all in one location which is google drive
9. Three options to access your files, folders, and Google Docs which are on google drive:
 1. Sign into Google Drive on the web at drive.google.com.
by using your g-mail credentials



2. Open the Google Drive folder on your computer (created when we install Google Drive on our system).
3. Go to the Google Drive mobile app on your Android or iOS device.

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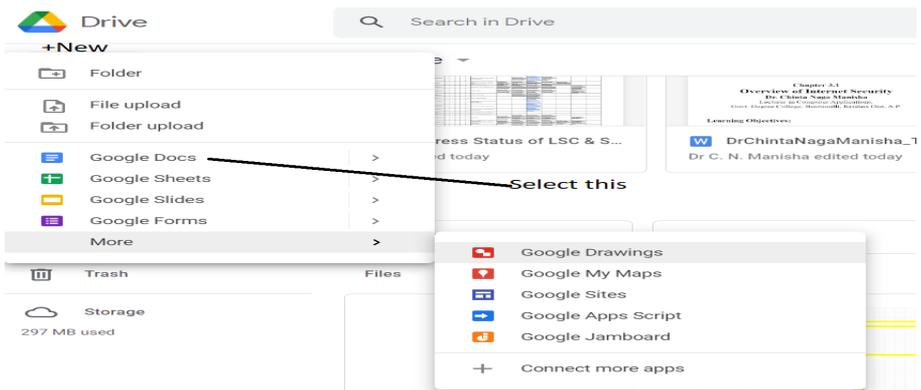
10. We can also access our Google drive from Google home page by clicking the Nine dots appear at the top-right corner.



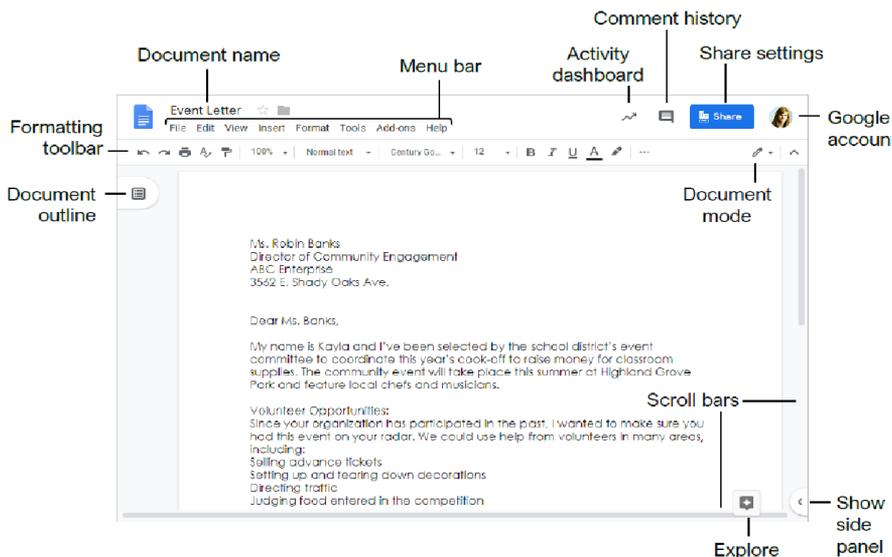
2.4.3 Google Docs:

2.4.3.1 To create a new doc:

1. Click the **New** button at the top-left of Drive.
2. Select a document type: Google Docs.

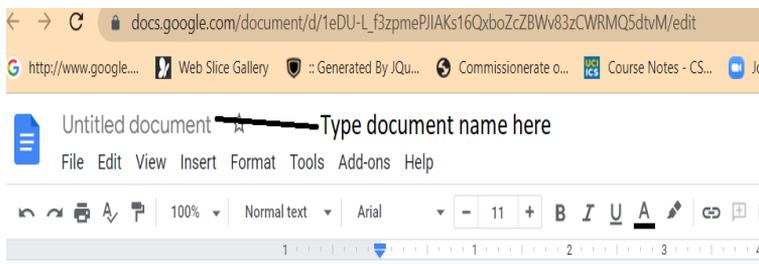


The above option will open the following screen

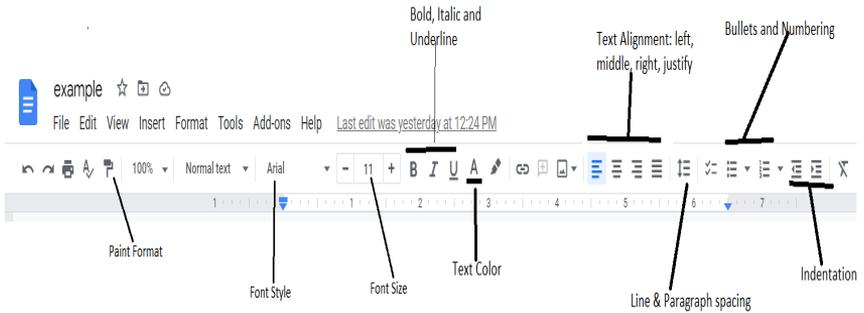


2.4.3.2 Rename Document:

The document name will be “Untitled” by default. To rename a file, either select **File** from the document toolbar and choose **Rename** or Click in the document name field at the top of an open document. Type a name and press **Enter**.



2.4.4 Google Docs ToolBar:



2.4.5 Format Text and Paragraphs:

Change the Font style: Select the text you want to format, click the **Font Style** list arrow on the formatting toolbar, and select a new font.

Change the Font Size: Select the text you want to format, click the **Font size** list arrow on the formatting toolbar, and select a new font size.

Change the Text Color: Select the text you want to format, click the **Text color**  button on the formatting toolbar, and select a new color.

Apply Bold, Italic, or an Underline: Select the text you want to format, click the **Bold** , **Italic** , or **Underline**  button on the formatting toolbar.

Create a Bulleted or Numbered List: Select the text you want to make into a list, and click the **Bulleted list**  or **Numbered list**  button on the formatting toolbar.

Change List Levels: Click in a list item, then click the **Increase indent**  or **Decrease indent**  button on the formatting toolbar.

Change Line Spacing: Select the paragraph you want to adjust, click the **Line spacing**  button on the formatting toolbar, and select a spacing option.

Change Paragraph Spacing: Select the paragraph you want to adjust, click **Format** on the menu bar, and select **Line spacing**. Select **Add space before paragraph** or **Add space after paragraph**.

Align a Paragraph: Click anywhere in the paragraph you want to align and click an alignment option on the formatting toolbar.

 Left align

 Center align

 Right align

Use Paragraph Styles: Select the text you want to apply a style to, click the **Styles** list arrow on the formatting toolbar, and select a style.

Copy Formatting: Select the formatted text you want to copy, click the **Paint format** button on the formatting toolbar, then select the text you want to apply the formatting to.

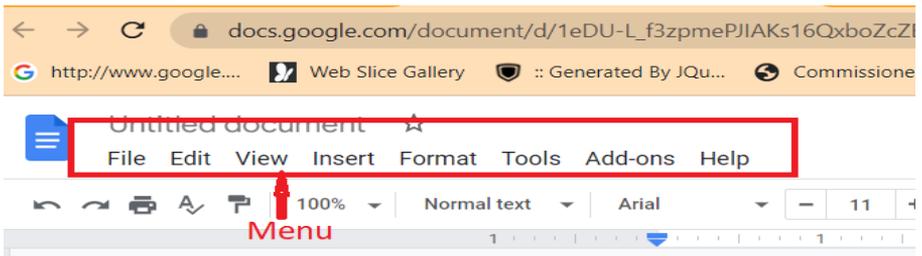
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Set a Tab-Stop: Select the text you want to align with a tab-stop, click on the ruler where you want to place the tab-stop, and select the type of tab-stop you want to use.

- **Left tab-stop** will align the left side of the text with the tab-stop.
- **Centre tab-stop** will align the text so that it's centered under the tab-stop.
- **Right tab-stop** will align the right side of the text with the tab-stop.

Apply a Column Layout: Click **Format** on the menu bar, select **Columns**, and select a column layout.

2.4.6 Google Docs Menu:



Menu allows us to adjust the settings and formats of our document. In menu File, Edit, View, Insert, Format, Tools, Add-ons, and Help are options that allows us to customize the document as needed.

2.4.7. Docs Fundamentals:

Open a Google Doc: Click **File** on the menu bar, select **Open**, then navigate to the file you want to open. Select the document and click **Open**.

Star a Document: Click the **Star** button next to the document name. The file appears in the **Starred** section of Google Drive.

Copy a Document: Click **File** on the menu bar and select **Make a copy**. Enter a name for the copied document and specify the folder where you want to save it. Click **OK**.

Move a Document: Click **File** on the menu bar and select **Move to**. Navigate to the folder where we want to move the document and click **Move here**.

Delete a Document: Click **File** on the menu bar and select **Move to trash**.

Print: Click **File** on the menu bar, select **Print**, specify the print settings, and click **Print**

Search Help Topics: Click **Help** on the menu bar and select **Docs Help**. Type a keyword or phrase in the **Search Help** field and press **Enter**. Select the desired help topic.

2.4.8 Edit a Document:

Select a Word: Double-click a word to select it.

Select a Block of Text: Click and drag across the text you want to select; or, click at the beginning of a text block, hold down the **Shift** key, and click at the end of a text block.

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Select a Paragraph: Triple-click in the left margin next to the paragraph you want to select.

Select Everything: Click **Edit** on the menu bar and click **Select all**, or press **Ctrl + A**.

Edit Text: Select the text you want to replace and type a new word or phrase to replace it.

Correct a Spelling or Grammar Error: Manually make the correction; or, right-click the error and select a suggestion from the menu.

Ignore a Spelling or Grammar Error: Right-click the error and select **Ignore** or **Ignore All**.

Copy and Paste: Select the text you want to copy, click **Edit** on the menu bar, and select **Copy**. Click where you want to paste the text, then click **Edit** on the menu bar, and select **Paste**.

Cut and Paste: Select the text you want to cut, click **Edit** on the menu bar, and select **Cut**. Click where you want to paste the text, then click **Edit** on the menu bar, and select **Paste**.

Insert a Page Break: Place the text cursor where you want the page break, click **Insert** on the menu bar, select **Break**, then select **Page break**.

View Word Count: Click **Tools** on the menu bar and select **Word count**.

Find Text: Click **Edit** on the menu bar and select **Find and replace**. Enter a word or phrase in the **Find** field and click **Next** to jump to the first occurrence in the document.

Replace Text: Click **Edit** on the menu bar and select **Find and replace**. Enter a word or phrase in the **Find** field, then enter the text that will replace it in the **Replace with** field. Click **Replace** or **Replace all**.

2.4.9 Format the Page

Adjust Margins: Click **File** on the menu bar, select **Page setup**, and update the values in the **Margins** text fields. Click **OK**.

Change Page Orientation: Click **File** on the menu bar, select **Page setup**, and select an orientation option. Click **OK**.

Change Page Size: Click **File** on the menu bar, select **Page setup**, click the **Paper size** list arrow, and select a paper size. Click **OK**.

Add a Header or Footer: Click **Insert** on the menu bar, select **Header & page number**, and select **Header** or **Footer**. Add the desired header or footer text.

Add Page Numbers: Click **Insert** on the menu bar, select **Header & page number**, and select **Page number**. Select a page numbering option.

2.4.10 Insert Objects

Insert a Picture: Place the text cursor where you want to insert a picture, click **Insert** on the menu bar, select **Image**, and select the location from which you want to add an image.

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Insert a Link: Select the text or object you want to link, click **Insert** on the menu bar, and select **Link**. Enter or select a web address or select a heading, then click **Apply**.

Insert a Special Character: Place the cursor where you want to insert a special character,click **Insert** on the menu bar, and select **Special characters**. Select a special character,then click **Close**.

Insert a Table of Contents: Click where you want to add the table of contents, click **Insert** on the menu bar, and select **Table of contents**. Select a table of contents formatting option.

2.4.11 Tables

Insert a Table: Click where you want to add a table, click **Insert** on the menu bar, select **Table**, and select a table size.

Insert or Delete a Row or Column: Click in a cell next to where you want to add or remove a row or column. Click **Format** on the menu bar, select **Table**, and select an option to insert or delete a row or column.

Format a Table: Click inside the table you want to format, click **Format** on the menu bar, select **Table**, and select **Table properties**. Use the options in the dialog box to modify the table properties, then click **OK**.

Resize Rows and Columns: Click and drag a table border to make it larger or smaller.

Move a Table: Select a table, then click and drag the table to a new location.

2.4.12 Share, Collaborate, and Convert

Download a Document: Click **File** on the menu bar, select **Download as**, and select a file format.

Email a Document: Click **File** on the menu bar and select **Email as attachment**. Select an attachment type, add your email recipient(s), and type a personalized message, then click **Send**.

Share a Document: Click the **Share** button, enter the email address(es) for the people you want to share the document with, set a permissions level, and click **Send**.

Add a Comment: Click in or select the text you want to comment on, click **Insert** on the menu bar, and select **Comment**. Type a comment into the text field and click **Comment**.

Edit with Suggesting Mode: Click the **Editing mode** button in the upper-right, and select **Suggesting mode**. Suggest edits by making changes in the document.

Accept or Reject Suggested Edits: Review suggested edits by clicking the **Accept** or **Reject** button.

View Version History: Click **File** on the menu bar, select **Version history**, and select **See version history**.

References:

- <https://support.google.com/a/answer/6047848?hl=en>
- <https://support.google.com/docs/?hl=en#topic=1382883>
- <https://support.google.com/drive/?hl=en#topic=14940>
- <https://support.google.com/edu/classroom/answer/6020260?hl=en>
- <https://files.gabbart.com/546/gooru-ultimate-google-apps-training-guide-1.pdf>
- <https://www.customguide.com/cheat-sheet/google-docs-quick-reference.pdf>

Chapter 2.5

Google Spreadsheets and Google Slides

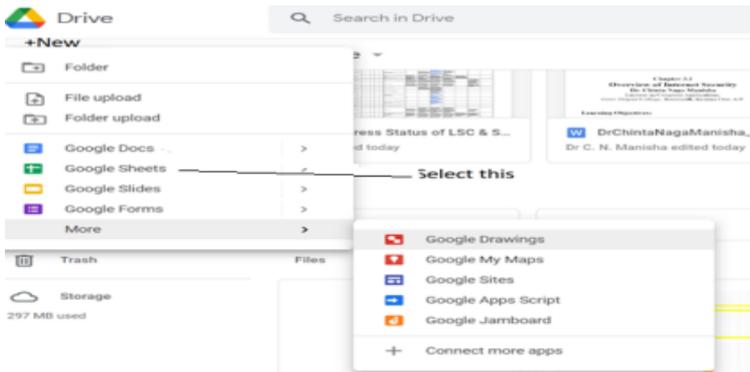
2.5.1 Google Spreadsheets

Google spreadsheets is an online spreadsheet application to create and format spreadsheets and charts

2.5.1.1 Creating Google Sheet:

To create a new sheet:

1. Click the **New** button at the top-left of Drive.
2. Select option: Google Sheets.



The above option will open the following screen

2.5.1.2 Sheets Fundamentals:

Open a Spreadsheet: Click **File** on the menu bar, select **Open**, then navigate to the file you want to open. Select the spreadsheet and click **Open**. This will open the selected file

Rename a Spreadsheet: Click in the spreadsheet name field at the top of an open spreadsheet. Type a name and press **Enter**.

Star a Spreadsheet: Click the **Star** button next to the spreadsheet name. The file appears in the **Starred** section of Google Drive.

Copy a Spreadsheet: Click **File** on the menu bar and select **Make a copy**. Enter a name for the copied sheet and specify the folder where you want to save it. Click **OK**.

Move a Spreadsheet: Click **File** on the menu bar and select **Move to**. Navigate to the folder where you want to move the spreadsheet and click **Move here**.

Delete a Spreadsheet: Click **File** on the menu bar and select **Move to trash**.

Print: Click **File** on the menu bar, select **Print**, specify the print settings, and click **Print**

Search Help Topics: Click **Help** on the menu bar and select **Sheets Help**. Type a keyword or phrase in the Search Help field and press **Enter**. Select the desired help topic you want.

2.5.1.3 Edit Spreadsheets:

Select Cells: Click a cell to select it. Click a row or column heading to select the entire row or column.

Edit Cell Data: Click the cell where you want to modify data, type the data, and press **Enter**.

Copy and Paste: Select the cell(s) you want to copy, click **Edit** on the menu bar, and select **Copy**. Click where you want to paste the data, click **Edit** on the menu bar, and select **Paste**.

Cut and Paste: Select the cell(s) you want to cut, click **Edit** on the menu bar, and select **Cut**. Click the cell(s) where you want to paste the data, then click **Edit** on the menu bar, and select **Paste**.

Insert Rows or Columns: Select the column or row where you want to insert new cells. Click **Insert** on the menu bar and select either **Column left / Row above** or **Column right / Row below**.

Move Cells: Select the cell(s) you want to move. Hover over the outline of the selected cells, then click and drag the cells to a new location.

Delete Cells: Select the cell or cell range you want to delete, click **Edit** on the menu bar, and select a delete option.

Hide a Row or Column: Right-click a row or column header and select **Hide Row** or **Hide Column**.

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Find Text: Click **Edit** on the menu bar and select **Find and replace**.

Enter a word or phrase in the **Find** field and click **Find** to jump to the first occurrence in the sheet.

Replace Text: Click **Edit** on the menu bar and select **Find and replace**. Enter a word or phrase in the **Find** field, then enter the text that will replace it in the **Replace with** field. Click **Replace** or **Replace all**.

Check Spelling: Click **Tools** on the menu bar, select **Spelling**, and select **Spell check**. Click **Ignore** to ignore instances of the misspelled word, or click **Change** to replace the misspelling with the selected word.

2.5.1.4 Format Spreadsheets

Change the Font: Select the cell(s) you want to format, click the **Font** list arrow on the formatting toolbar, and select a new font.

Change the Font Size: Select the cell(s) you want to format, click the **Font size** list arrow on the formatting toolbar, and select a new font size.

Change the Text Color: Select the cell(s) you want to format, click the **Text color** button on the formatting toolbar, and select a new color.

Change Cell Alignment: Select a cell or cell range, click the **Horizontal align** or **Vertical align** button on the formatting toolbar, then select an alignment option.

Merge Cells: Select a cell range and click the **Merge cells** button on the formatting toolbar.

Wrap Text: Select a cell or cell range, click the **Text wrapping** button on the formatting toolbar, and select a text wrapping option.

Add a Cell Border: Select a cell or cell range, click the **Borders** button on the formatting toolbar, and select a border option.

Apply Number Formatting: Select a cell or cell range, click **Format** on the menu bar, select **Number**, and select a number format.

Freeze a Row or Column: Click **View** on the menu bar, select **Freeze**, and select a freeze option.

Copy Formatting: Select a cell or cell range with formatting that you want to copy. Click the **Paint format** button on the formatting toolbar, then select the cell or cell range you want to apply the formatting to.

Create a Conditional Formatting Rule: Select a cell range, click **Format** on the menu bar, and select **Conditional formatting**. Select the conditions for the formatting to appear, customize the formatting that will appear when the conditions are met, and click **Done**.

2.5.1.5 Formulas and Functions:

Create a Formula: Select the cell where you want to enter a formula. Press =, then enter the formula using numbers, cell references, and/or mathematical operators. Press **Enter**.

Insert a Function: Click in the cell where you want to add a function. Click Insert on the menu bar, select **Function**, select a category, then select a function. Enter the function's arguments and press **Enter**.

The Sum Function: Click the cell where you want to add the SUM function. Click **Insert** on the menu bar, select **Function**, and select **SUM**. Select the cells you want to find the sum for and press **Enter**.

The Min and Max Functions: Click the cell where you want to place a minimum or maximum value for a given range. Click **Insert** on the menu bar, select **Function**, and select **MIN** or **MAX**. Select the range of cells you want to analyse and press **Enter**.

The Count Function: Click the cell where you want to place a count of the number of cells in a range that contain numbers. Click **Insert** on the menu bar, select **Function**, and select **COUNT**. Select the range of cells you want to analyse and press **Enter**.

Complete a Series Using AutoFill: Select the cells that define the pattern, i.e. a series of months or years. Click and drag the fill handle to adjacent blank cells to complete the series.

Name a Cell Range: Select a cell range you want to name, click **Data** on the menu bar, and select **Named ranges**. Click **Add a range**, enter a name for the cell range, and click **Done**.

2.5.1.6 Manage Sheets and Data

Insert a Sheet: Click + to the left of the sheet tabs.

Rename a Sheet: Click the sheet tab you want to rename and click the sheet tab's arrow. Select **Rename** in the menu, then enter a new name and press **Enter**.

Delete a Sheet: Click the sheet tab you want to delete. Click the sheet tab's arrow, select **Delete**, and click **OK**.

Hide a Sheet: Click the sheet tab you want to hide. Click the sheet tab's arrow and select **Hide sheet**

Move a Sheet: Click and drag the sheet tab to the desired location.

Sort a Column: Select a cell in the column you want to sort, click **Data** on the menu bar, and select a sort order.

Filter Data: Select a cell in a data range. Click **Data** on the menu bar and select **Create a filter**. Click the filter arrow for a column, specify the items you want to filter, and click **OK**.

2.5.1.7 Insert Objects

Insert a Chart: Select a cell range containing data for a chart. Click **Insert** on the menu bar and select **Chart**. Click the **Chart type** list arrow in the Chart editor pane and select a chart type.

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Modify a Chart: Select a chart, click the **More** icon, and select **Edit** chart. Modify the options in the Chart editor pane.

Insert an Image: Click the cell where you want to insert the picture, click **Insert** on the menu bar, select **Image**, and select where you want to insert the image. Select the location from which you want to add an image, then Double-Click an image to insert it.

Insert a Link: Select the cell or object you want to use to create the link. Click **Insert** on the menu bar and select **Link**. Specify what you want to Link to, then click **Apply**.

2.5.1.8 Share, Collaborate, and Convert:

Download a Spreadsheet: Click **File** on the menu bar, select **Download as**, and select a file format.

Email a Spreadsheet: Click **File** on the menu bar and select **Email as attachment**. Select an attachment type, add your email recipient(s), and type a personalized message, then click **Send**.

Share a Spreadsheet: Click the **Share** button and enter the email address(es) for the people you want to share the spreadsheet with. Set a permissions level, then click **Send**.

Add a Comment: Click the cell where you want to add the comment, click **Insert** on the menu bar, and select **Comment**. Type a comment into the text field and click **Comment**.

Reply to a Comment: Select a comment. Click in the **Reply** field, type a reply, and click **reply**.

View Version History: Click **File** on the menu bar, select **Version history**, and select **See version history**.

Restore a Version: In the version history pane, select the version you want to restore. Click the **Restore this version** button, then click **Restore** to confirm.

2.5.2 Google Slides

Google Slides is an online presentations editor to create visual presentations.

2.5.2.1 Creation and Setup:

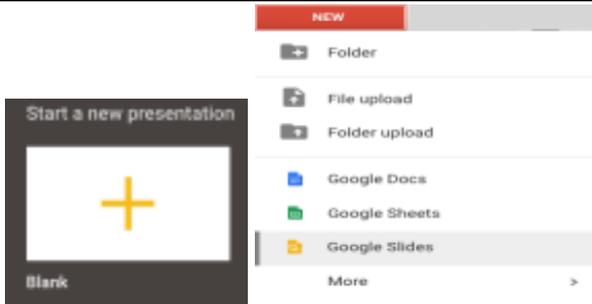
There are three ways to get started in Slides:

1. create from scratch (Blank)
2. use a template
3. open/import an existing presentation (Slides, PowerPoint, or other).

2.5.2.1.1 Start from Scratch

- In Google Drive, **click** the + **New** button and in the right menu **select Google Slides**
- In Slides, **click Blank**

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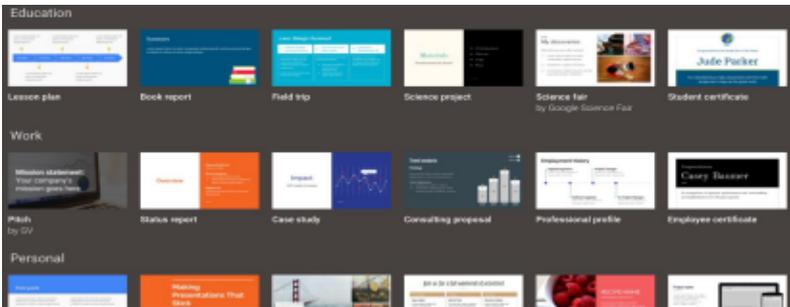


The above option will open the following screen:

2.5.2.1.2 Use Templates and Themes

The theme is the look of backgrounds, colors, fonts and styles and a template is a collection of slides and layouts created for a particular type of presentation.

To create a new presentation from a template, select **File** → **New** → **from template**. The following figure is the view from the General template category

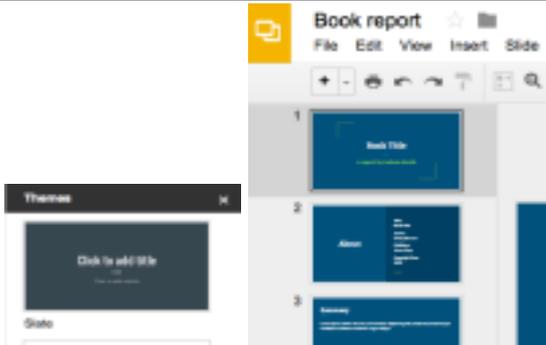


Select appropriate template for your work and click on it.

Themes:

We can always apply or change the theme (look) of a presentation.

- Click **Theme** in the menu 
- The **Themes menu** appears to the right
- **Click a theme** to apply it to your presentation



Applying a theme will change any custom fonts, colors, or styles you have already created.

Open a Presentation:

Click **File** on the menu bar, select **Open**, then navigate to the file you want to open. Select the presentation and click **Open**.

2.5.2.2 Slides Fundamentals:

Rename a Presentation: Click in the presentation name field at the top of an open presentation. Type a name and press **Enter**.

Star a Presentation: Click the **Star** button next to the presentation name. The file appears in the **Starred** section of Google Drive.

Copy a Presentation: Click **File** on the menu bar and select **Make a copy**. Enter a name for the copied presentation and specify the folder where you want to save it. Click **OK**.

Move a Presentation: Click **File** on the menu bar and select **Move to**. Navigate to the folder where you want to move the presentation and click **Move here**.

Delete a Presentation: Click **File** on the menu bar and select **Move to trash**.

Print: Click **File** on the menu bar, select **Print**, specify the print settings, and click **Print**.

Search Help Topics: Click **Help** on the menu bar and select **Slides Help**. Type a keyword or phrase in the Search Help field and press **Enter**. Select the desired help topic.

2.5.2.3 Edit and Organize a Presentation

Insert a New Slide: Click the **New slide** button on the formatting toolbar. Or, click the **New slidelist** arrow and select a specific slide layout.

Change the Slide Layout: Click the **Layout** button on the formatting toolbar and select a slide layout.

Copy and Paste: Select the slide, text, or object you want to copy, click **Edit** on the menu bar, and select **Copy**. Click where you want to paste the element, then click **Edit** on the menu bar, and select **Paste**.

Cut and Paste: Select the slide, text, or object you want to cut, click **Edit** on the menu bar, and select **Cut**. Click where you want to paste the element, then click **Edit** on the menu bar, and select **Paste**.

View and Edit Speaker Notes: Click **View** on the menu bar and select **Show speaker notes**. Add or edit the notes in the pane at the bottom of the window.

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Find Text: Click **Edit** on the menu bar and select **Find and replace**.

Enter a word or phrase in the **Find** field and click **Next** to jump to the first occurrence in the presentation.

Replace Text: Click **Edit** on the menu bar and select **Find and replace**. Enter a word or phrase in the **Find** field, then enter the text that will replace it in the **Replace with** field. Click **Replace** or **Replace all**.

Add Slide Numbers: Click **Insert** on the menu bar and select **Slide numbers**. Click the **On** radio button and click **Apply** or **Apply to selected**.

Move a Slide: Click and drag a slide to a new location in the thumbnail pane.

Skip a Slide: Select a slide, click **Slide** on the menu bar, and select **Skip slide**.

Duplicate a Slide: Select the slide you want to duplicate, click **Slide** on the menu bar, and select **Duplicate slide**.

2.5.2.4 Formatting and Themes:

Change the Font: Select the text you want to format, click the **Font** list arrow on the formatting toolbar, and select a new font.

Change the Font Size: Select the text you want to format, click the **Font size** list arrow on the formatting toolbar, and then select a new font size.

Change the Text Color: Select the text you want to format, click the **Text color** button on the formatting toolbar, and select a new color.

Create a Bulleted or Numbered List: Select the text you want to make into a list, and then click the **Bulleted list** or **Numbered list** button on the formatting toolbar.

Change the List Style: Select a list, click the **Bulleted list** or **Numbered list** button list arrow, and select a different list style.

Insert a Link: Select the text or object you want to link and click the **Insert link** button on the formatting toolbar. Enter a web address or select a slide in the presentation, then click **Apply**.

Copy Formatting: Select the formatted text you want to copy, click the **Paint format** button on the formatting toolbar, then select the text you want to apply the formatting to.

Apply a Theme: Select a slide, click the **Theme** button on the formatting toolbar, and select a theme in the pane at the right.

Edit a Master Layout: Click **View** on the menu bar and select **Master**. Select a slide layout, modify the formatting for the selected layout, and close the Master view.

2.5.2.5 Graphics and Animations:

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Insert a Shape: Click the **Shape** button on the formatting toolbar, select a shape category, and select a shape. Click and drag to place the shape on the slide.

Insert a Picture: Click the **Image** button on the formatting toolbar and select the location from which you want to add an image. Select an image and click **Insert** or **Open**.

Adjust Size and Position: Select an object and click **Format options** on the formatting toolbar. Expand the **Size & Position** heading and customize the size and position options.

Group Objects: Select two or more objects, click **Arrange** on the menu bar, and then select **Group**.

Apply a Slide Transition: Select a slide and click **Transition** on the formatting toolbar. Click the **Transition type** list arrow and select a transition.

Modify a Slide Transition: Select a slide with a transition and click **Transition** on the formatting toolbar. Change the transition type or adjust its duration in the Transitions pane.

Add an Animation: Select an object, click **Insert** on the menu bar, and select **Animation**. Select an animation type and animation start condition in the Transitions pane.

Remove an Animation: Click **Slide** on the menu bar and select **Change transition**. Click an animation's header in the Transitions pane, then click the **Delete** button next to the animation's header.

2.5.2.6 Insert Objects:

Insert a Text Box: Click the **Text box** button on the formatting toolbar. Click and drag to draw the text box, then type to enter text.

Insert a Chart: Select the slide you want to add a chart to. Click **Insert** on the menu bar, select **Chart**, and select a chart type.

Insert a Table: Select the slide you want to add a table to. Click **Insert** on the menu bar, select **Table**, and click to specify the number of columns and rows.

Insert a Diagram: Select the slide you want to add a diagram to. Click **Insert** on the menu bar and select **Diagram**. In the Diagrams pane, select a category, how many steps to include, a color scheme, and a diagram style. Replace the text in the diagram placeholder text boxes.

Insert Word Art: Select the slide you want to add word art to. Click **Insert** on the menu bar and select **Word art**. Then enter the text and press **Enter**.

Insert a Video: Select the slide you want to add a video to. Click **Insert** on the menu bar and select **Video**. Specify the video's web or Google Drive location, then click **Select**.

2.5.2.7 Deliver a Presentation:

Present a Slideshow: Click the **Present** button list arrow and select **Present from beginning**.

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Navigate a Slideshow:

- Click anywhere on a slide to advance one slide (or step).
- Click the **Next** button to advance one slide.
- Click the **Previous** button to go back one slide.
- Click the **Play** button to automatically, advance through the presentation.
- Click the slide number list arrow and select a slide to jump to.
- Click the **Full screen** button to toggle full screen mode.

Use the Pointer Tool: While presenting, click the **Pointer** button on the toolbar. Use the pointer to point to parts of the slide. Click the **Pointer** button again to turn it off.

Open Presenter View: Click the **Present** button list arrow and select **Presenter view**.

Use the Timer: Click the **Pause** button to stop the timer or click the **Reset** button to set it back to zero.

Run Q&A: Click the **Audience Tools** tab and click the **Start New** button. A Q&A session starts, and a sharable link is created. Click the **On/Off** button to toggle the Q&A session.

2.5.2.7 Share, Collaborate and Convert

Download a Presentation: Click **File** on the menu bar, select **Download as**, and select a file format.

Email a Presentation: Click **File** on the menu bar and select **Email as attachment**. Select an attachment type, add your email recipient(s), and type a personalized message, then click **Send**.

Share a Presentation: Click the **Share** button, enter the email address(es) for the people you want to share the presentation with, set a permissions level, and click **Send**.

Add a Comment: Select the item you want to comment on, click **Insert** on the menu bar, and select **Comment**. Type a comment into the text field and click **Comment**.

Reply to a Comment: Select a comment. Click in the **Reply** field, type a reply, and click **Reply**.

View Version History: Click **File** on the menu bar, select **Version history**, and select **See version history**.

Restore a Version: In the version history pane, select the version you want to restore. Click the **Restore this version** button, then click **Restore** to confirm.

References:

1. <https://support.google.com/a/users/answer/9282488?hl=en>
2. https://support.google.com/a/users/answer/9282959?usp=sheets_web&visit_id=1655806573570-5200355626570157848&p=sheets_training&rd=1
3. https://www.customguide.com/quickreference?utm_source=qr&utm_medium=pdf&utm_campaign=qr-ref

Chapter 2.6

Google Forms

2.6.1 What is a Google form?

- Google form is a free online tool which allows us to create surveys, quizzes and questionnaires.
- It is a part of the free, web-based Google Docs Editors suite (G-Suite) offered by Google. G-Suite also includes Google Docs, Google Sheets, Google Slides, Google Drawings, Google Sites, and Google Keep
- The app allows users to create and edit surveys online while collaborating with other users in real-time.
- A gmail account is needed to create a Google form, but not necessary to fill a Google form.
- Google form automatically does some analysis on the data collected through Google forms.
- The collected information can be automatically entered into a spreadsheet so that further analysis could be done.

2.6.2 Features of Google forms

The Google Forms service has undergone several updates over the years. Features include,

- Shuffling of questions for randomized order

- Limiting responses to one per person
- Shorter URLs
- Custom themes
- Automatically generating answer suggestions when creating forms
- "Upload file" option for users answering questions that require them to share content or files from their computer or Google Drive.
- Analyze responses in real time.
- Collaboration and sharing

2.6.3 Few examples of Google forms:

- Session Sign up or Application for an event.
- Feedback forms
- Online quiz for a classroom activity.
- Survey to develop Professional Development opportunities.
- Brainstorm for prior knowledge of a staff meeting or gather data before and after training.

2.6.4 Creating a Google form:

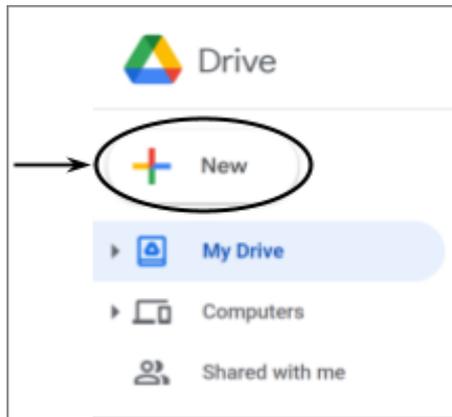
The following are Ten simple steps to create a Google form.

1. Open a Google form

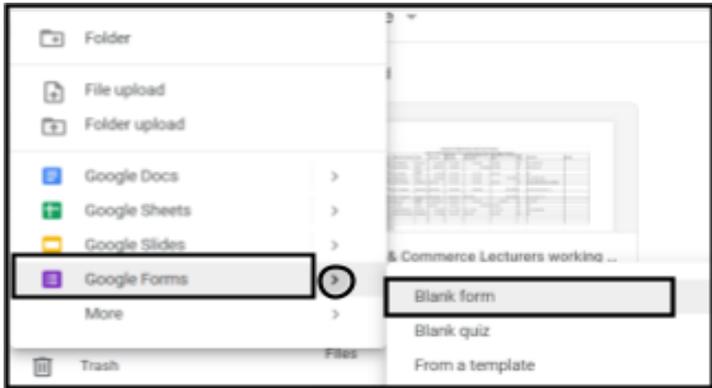
This could be done in two ways.

(i). From Google Drive:

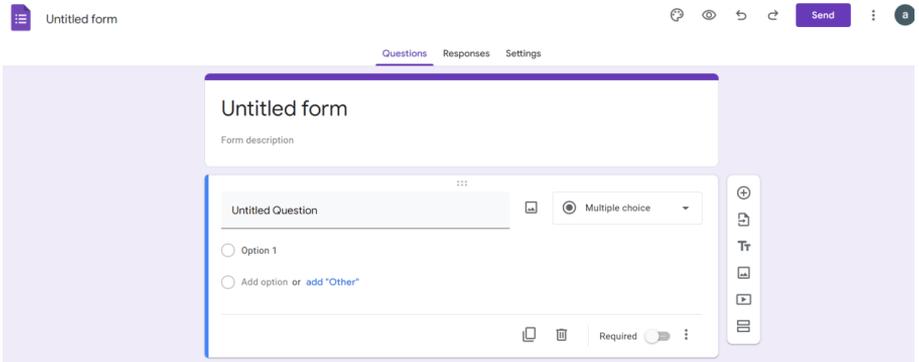
- Sign in to your gmail account.
- Click on nine dots symbol  on the top right hand side.
- Select the “Google drive” icon  and open the Google drive.
- Click on the “+ New ” Symbol on the top left hand side.



- Select “Google Form” and then “Blank form”.



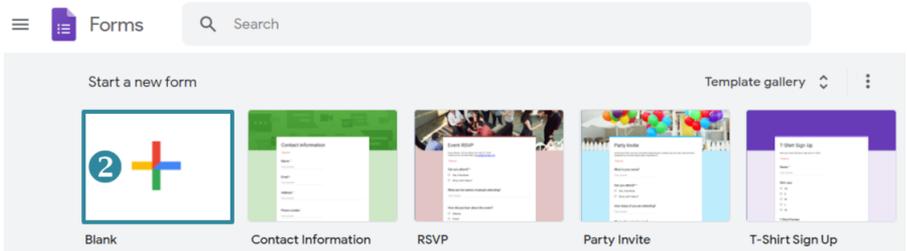
- A new untitled form will be opened as follows.



(ii). Visit “<https://forms.google.com>”.

a). Sign in to your gmail account.

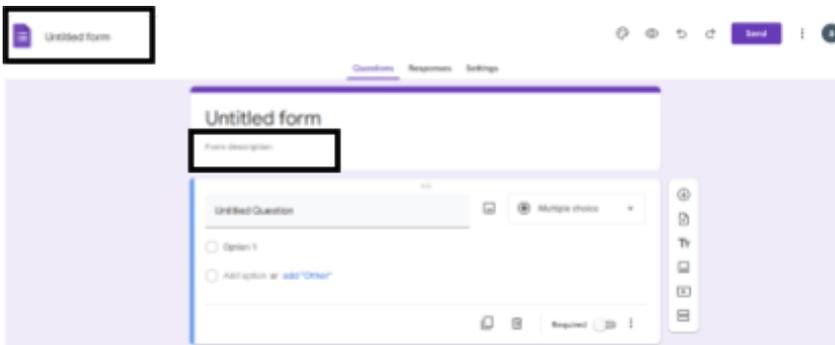
b). Select the Blank “+” symbol as shown in the following figure to open a blank Google form for you.



c) New Untitled Google form will be opened.

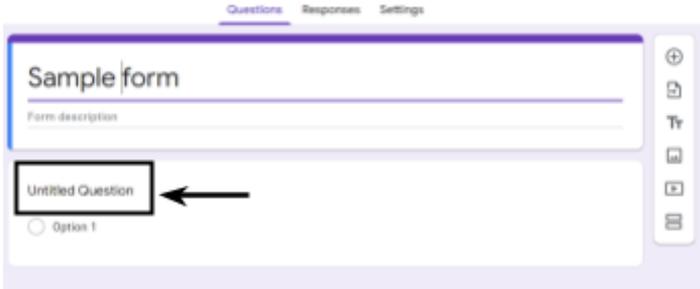
2. Name your Google form

On the top left most corner, you can see a text box called “Untitled form”. It is here you can give your relevant name to your survey and can start creating your form. You can add description to the form if needed.

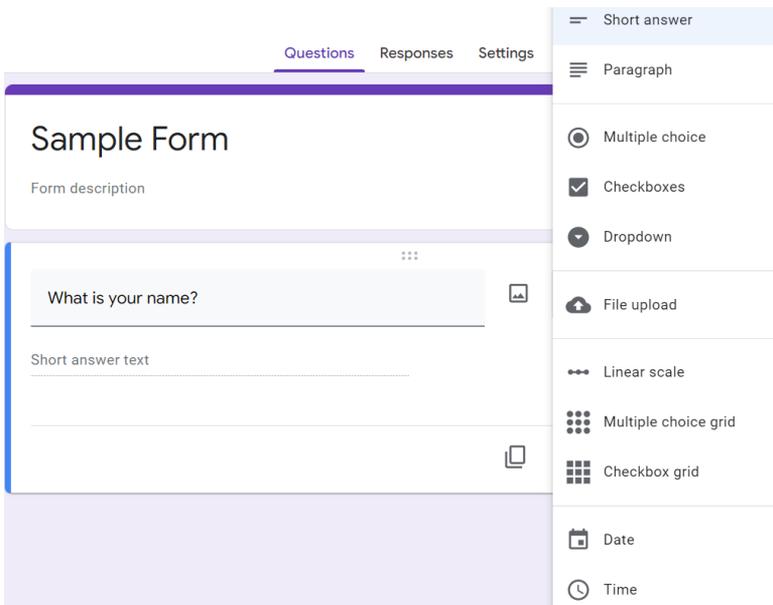


3. Add questions to your form:

Click the “Untitled question” and start typing your question.



You can choose the appropriate type of question you want to add. From the drop down box available next to the question you have typed, you can select the type of question you want.



Few available options are:

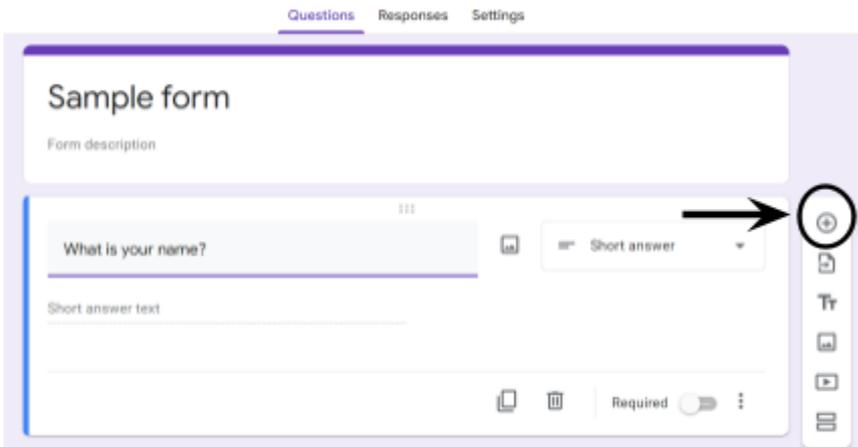
- **Multiple choice question** - The Google Forms multiple choice type of question provides a list of answers, and the user can select only one.
- **Short answer question** - This question type requests very short text input from the user, such as their name or email address.
- **Paragraph** - This type of question requests a longer response, such as for general comments or feedback.
- **Check boxes** - This is another multiple-choice list, only this time the user can select more than one answer.
- **Dropdown** - This is a multiple-choice style question presented in the form of a drop-down list. The user can only choose one answer
- **Linear Scale** - **Linear Scale** asks the respondent to rank things on a scale of, by default, one to five. You can expand the scale up to ten
- **Date** – A calendar will be displayed and the respondent can enter the date.
- **Time** – Respondent can enter the time.
- **Multiple Choice grid** - A multiple-choice grid allows the user to select pre-defined options for more than one choice.

- **Check boxes grid** - A check boxes grid allows the user to select more number of pre-defined options for more than one choice.
- **File Upload** – This allows the respondent to upload any file like his photo, certificate, etc.

After selecting the required question type, you can give the options for responses if it is available for your question type.

4. Add more number of Questions.

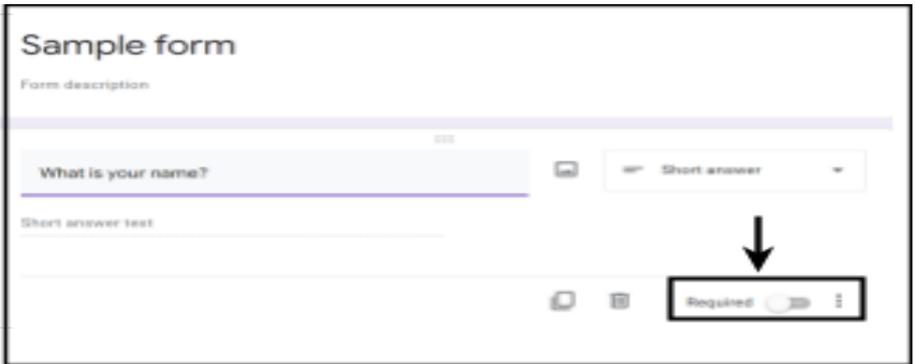
To add one more question to your Google form, Click on the + icon available on the right hand side of the question box.



The screenshot displays the Google Forms editor interface. At the top, there are tabs for 'Questions', 'Responses', and 'Settings'. The main area shows a 'Sample form' with a 'Form description' field. Below this, a question box is visible with the text 'What is your name?' and a 'Short answer' dropdown menu. On the right side of the question box, there is a vertical toolbar containing several icons. The top icon, a plus sign (+), is circled in red, and a black arrow points to it from the right. Below the question box, there are additional controls including a 'Required' toggle switch and a three-dot menu icon.

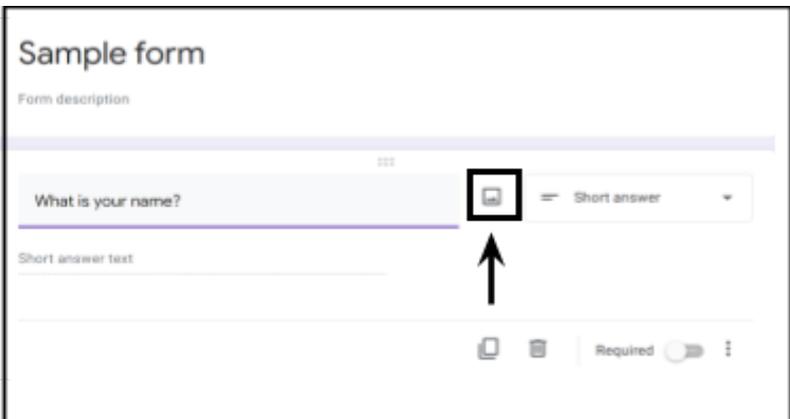
5. Setting your question to be a mandatory question

If you want people to compulsorily answer your question, you can make it a mandatory question by clicking on the “Required” button.



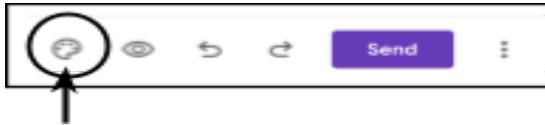
6. Adding images to the question or to the responses

By clicking on the icon  you can add an image or a video either by uploading from the device or from you tube, etc.

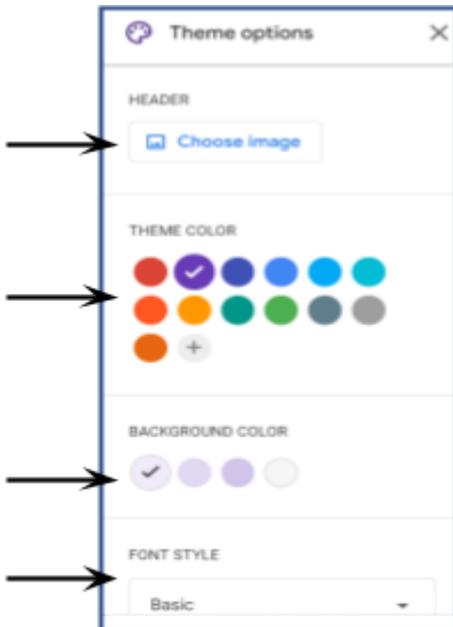


7. Customizing the look of your Google form

Click on  icon which is available on top right hand side to customize your Google form.

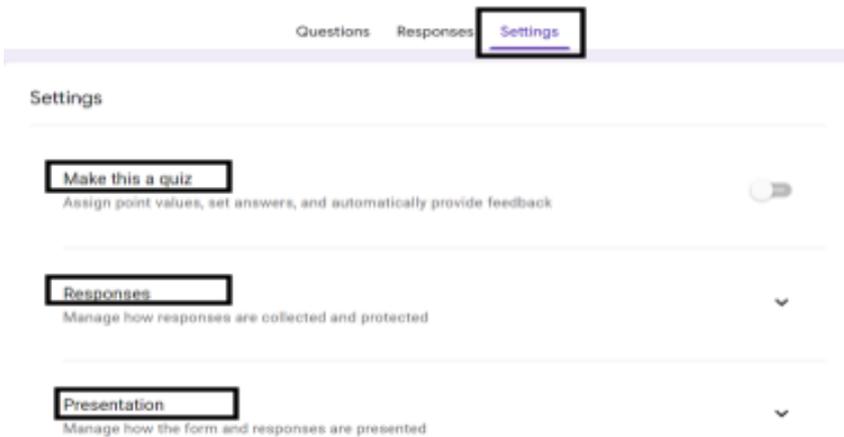


You can change the theme colour, background colour, Header image, etc by clicking  icon and selecting necessary items. The following figure shows the dialogue box which appears after selecting the said icon.



8. Adjusting some settings

You can give some settings to your form like who can access your form, whether to collect mail ids of the recipients or not, etc. For this, you need to click on “Settings” option available on the top of the form. If you click on “settings” you can see three options “Make this a quiz”, “Responses” and “Presentation”.



- 1) By clicking on the button against “Make this a quiz”, you can make this form as a quiz.
- 2) By clicking a down arrow next to “Responses”, you can select the following options:

- **Collect email addresses**—Whether to collect recipient’s email addresses or not.
- **Send responders a copy of their response**—Whether to send copies of responses to recipients or not.
- **Allow response editing**: Whether to allow people to modify their answers after submitting them.
- **Limit to 1 response**— Whether to allow one or more responses from every individual.

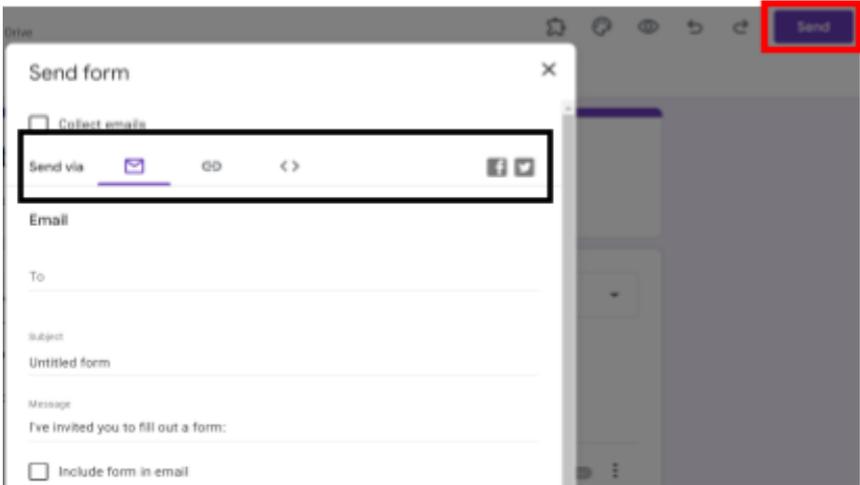
3) By clicking a down arrow next to “**Presentation**”, you can select the following options:

- **Confirmation message**—You can customize the message people get after they submit the form.
- **Show link to submit another response**—Whether to allow people to submit as many form responses as they like.

9. Previewing your Google Form

By clicking on this preview icon  , which looks like Eye symbol, you can see how your form is visible to the recipients. If everything is fine, you can proceed to “Send” your form.

10. Send your form



- 1) When the form is ready to be sent to the recipients, click on the “Send” button available on the top right hand side.
- 2) Select the method you want to post this form. This can be done in any of these three ways.
 - Email: Click  icon and give the email address, subject and the message.
 - b. Link: Click Link  icon. If you want, you can shorten the URL, copy it and paste it in whatsapp groups, or chat, mail, etc.

- Website: Click on icon < > to get the Embed code. You can copy this code and paste it in your website or blog, etc.
- Social media: Click on any of the social media icons available and can post the form there.

3) Send it to your target audience using any of the above mentioned methods.

2.6.5 View and download the responses

As responses come in real time, automatic summaries of responses with colourful charts are presented by Google forms.

- 1) Click on Responses to view the information collected.
- 2) View the responses on Google Spreadsheets. You can then download the information in Excel, CSV and other formats;
OR
- 3) Download the responses in CSV format.

The screenshot shows the Google Forms interface. At the top, there are tabs for 'Questions' and 'Responses' (with a '5' next to it). A circled '1' is placed over the 'Responses' tab. To the right, there are two more circled numbers, '2' and '3', above icons for a plus sign and a vertical ellipsis. Below these is a toggle switch for 'Accepting responses' which is currently turned off. The main content area shows a question: '1. Have you purchased a digital camera in recent 5 years or planning to purchase a digital camera in the coming 6 months?' with '5 responses' below it. A pie chart displays the results: 80% for 'Yes' (blue) and 20% for 'No' (red). A legend on the right identifies the colors: a blue dot for 'Yes' and a red dot for 'No'. At the bottom of the interface, there are three tabs: 'Summary' (underlined), 'Question', and 'Individual'.

Source: <https://libguides.lb.polyu.edu.hk/online-tools-for-assignment/googleforms>

2.6.6 Turn off Responses

1. Open a form in Google Forms.
2. At the top, click **Responses**.
3. Turn "Accepting responses" from **On** to **Off**.

2.6.7 Creating a quiz from Google forms

2.6.7.1 Create a quiz from Forms or convert a form to a quiz:

1. Open Google forms.

2. Open a blank form or an existing Google form. On the top of it, click **Settings**.
3. Turn on “**Make this a quiz**”.

2.6.7.2 Create a quiz from Google Drive:

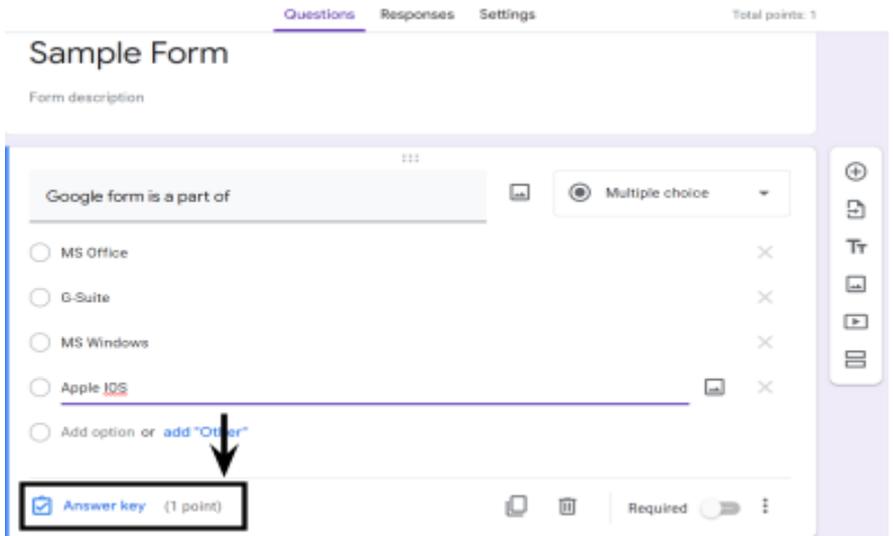
1. Open Drive.
2. Click **New -> Google Forms -> Blank quiz**.

2.6.7.3 Customize your quiz:

1. Name your quiz: Above the questions and the form description, click **Untitled form**, then enter a name.
2. Can add description to the quiz.
3. Can add header, customize the background colour, theme and font style too. Add questions
4. Add questions to your quiz. Select the appropriate type of question from the drop down arrow.
5. Add responses (answers) to the question (if applicable for your question type).
6. Click the button next to “Required” if you want to make your question mandatory.
7. Specify the correct answer to your question and allot marks to your question. This can be done as follows.

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- Click on “Answer Key” available at the bottom left of the question.



The screenshot shows the Google Forms editor interface. At the top, there are tabs for 'Questions', 'Responses', and 'Settings', along with a 'Total points: 1' indicator. The main area displays a question titled 'Sample Form' with the description 'Form description'. The question text is 'Google form is a part of' and the type is 'Multiple choice'. The options listed are 'MS Office', 'G-Suite', 'MS Windows', and 'Apple IOS'. Below the options, there is a link to 'Add option or add "Other"'. At the bottom of the question editor, the 'Answer key' option is highlighted with a black box, and a black arrow points to it. The 'Answer key' option is accompanied by a checkmark icon and the text '(1 point)'. To the right of the 'Answer key' option, there are icons for a document, a trash can, and a 'Required' toggle switch.

- Select the correct answer if it is multiple choice or check box type of question. Type the answer if it is short answer type of question.
- Specify how many marks to be awarded if your question is correct. This can be done by clicking the drop down arrow, next to your question.

The screenshot shows the Google Forms editor interface. At the top, there are tabs for 'Questions', 'Responses', and 'Settings', and a 'Total points: 1' indicator. The main heading is 'Sample Form' with a 'Form description' field. Below this, there is a checkbox for 'Choose correct answers:'. The question text is 'Google form is a part of'. To the right of the question, the value '1 points' is displayed and highlighted with a black rectangular box, with a black arrow pointing to it from the left. Below the question, there are four radio button options: 'MS Office', 'G-Suite', 'MS Windows', and 'Apple iOS'. The 'G-Suite' option is selected, indicated by a green circle and a green checkmark to its right. At the bottom left of the question area, there is a blue button with a plus icon and the text 'Add answer feedback'. At the bottom right, there is a 'Done' button. On the right side of the form, there is a vertical toolbar with icons for adding questions, deleting, undo, redo, and other editing functions.

- Click “Done” to finish.

8. Feedback can be added to your quiz as follows.

- Click on the question in your quiz.
- Click on “Answer Key” and add the correct answer.
- Click on “Add answer feedback” at the bottom of the question.

This screenshot is similar to the one above, showing the same Google Forms editor interface. The question 'Google form is a part of' is still present, with 'G-Suite' selected as the correct answer. In this view, the '1 points' value is no longer highlighted. Instead, the 'Add answer feedback' button at the bottom left of the question area is highlighted with a black rectangular box. A black arrow points down to this button from above. The rest of the interface, including the 'Done' button and the right-side toolbar, remains the same.

- Feedback can be added to “Incorrect answers” and “Correct answers”, for automatically graded questions and click on “Save”.

Add feedback

Incorrect answers Correct answers

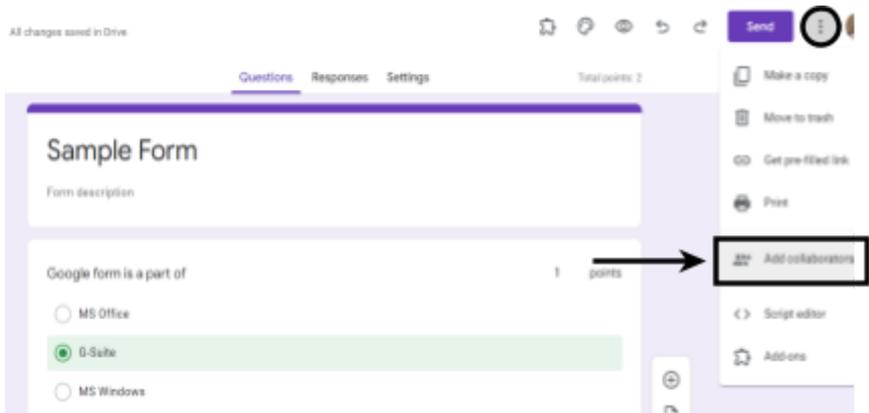
Enter feedback

Cancel Save

- Add general feedback to questions graded manually. It can be seen by all the respondents.
 - Click on “Done”.
9. Add as many questions as you want in the same manner.
 10. Preview your quiz and send it to your recipients.

2.6.8 Collaborating with others to work on the form:

1. At the top right, click on  icon and then click on “Add collaborators”.



2. Under **Add editors**, enter the email addresses of the people you want to share with.
3. Click **Send**.

Whoever you invite can edit any part of your form, including responses and where they are saved.

2.6.9 Print a form and Responses:

- 1) Open a form and go to the content you want to print.
- 2) If you're printing questions or individual responses, at the top, click More and then click on **Print**.
- 3) If you're printing a summary of responses, from your browser, click **File and then Print**.
- 4) Choose your settings and then click **Print**.

2.6.10 References:

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Test Your Knowledge



Activity

- Create a registration form for your college campus placement through Google forms.
- Create a quiz of your interest, share it among your friends and analyze the results.

Chapter 3.1

Overview of Internet Security

3.1.1 Overview of Internet Security

Internet Security is the set of procedures used to protect data and activities through the Internet. The term Internet Security is related to Cyber Security. Sometimes alternatively uses the Cyber Security term for the Internet Security term.

The data transmission sent over the internet is easy and fast. This data may include confidential data. While the computer user, sending the data a lot of cybercriminals are hacking the data from the victim's computer for their criminal activities. Hacking is the process of modifying the security mechanism of the computers [6].

The person who implements hacking methods is known as a "Hacker". Hackers are two types i.e., white hat hackers and black hat hackers.

1. White hats are hackers who work to keep data safe from other hackers by finding system vulnerabilities that can be mitigated. Their work is not illegal because it is done with the system owner's consent[6]. These hackers are also called Ethical hackers.
2. Black hats or crackers are hackers with malicious intentions. They often steal, exploit, and sell data, and are usually

motivated by personal gain. Their work is usually illegal[6].

These hackers are also called Cybercriminals.

To protect the user's data and their internet activities from cybercriminals the users should implement Internet Security mechanisms. Therefore, Internet security concepts become more priority in the digital world.

3.1.1.1 Types of Internet Security Threats

An Internet security threat is any harmful attack that attempts to gain unauthorized access to the data, steal the information, corrupt the data, or interrupt the digital activities. Some of the common Internet security threats are as follows.

i. Malware: Malware is dangerous software that is automatically installed and runs on the victim's computer. Malware's full form is Malicious Software. The Types of Malware software include viruses, worms, spyware, Trojan Horse, and Ransomware.

- a. **Viruses:** A computer virus is a malware program that can damage the victim's computer and infect the data on the victim's computer and render them useless. It spreads to other computers.
- b. **Worms:** A worm is a type of malware software that replicates itself to infect the victim's computer and spread to other computers.

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- c. **Spyware:** Spyware is a type of malware that is installed without the victim's permission and runs in hidden mode to steal the information of the victim.
- d. **Trojan Horse:** The Trojan Horse is a malware program that contains legitimate software. After installation, it steals the information and sends it to the cybercriminals.
- e. **Ransomware:** Ransomware is a type of malware attack in which the attacker encrypts or locks the victim's data and warns to will publish the data or block the access to the victim's data if they do not pay the ransom

ii. Phishing: Phishing is a cyber criminal sends fake emails and fake links to the victim. With this the cybercriminal targets to steal the victim's login information or credit/debit card information or install the malware software into the victim's computer.

iii. Botnet: The goal of botnets is to force the victim to pay a ransom. The cybercriminals use it to gain control of the networks of computers disrupted by the cybercriminals and they can remotely control the network.

iv. Man-in-Middle Attack: When the sender sends the data to the receiver then the cybercriminal steals that data before receiving it from the receiver and the cybercriminal may modify the data. After that the cybercriminal routes that data to the receiver.

v.Browser Hijack: A browser hijack is a type of unwanted software that changes the settings of a web browser without the user's permission and hijacks the user's data from that web browser.

3.1.1.2 Internet Security Techniques

1. Install the Antivirus software on the computer and update it regularly.
2. Use strong passwords that are the passwords should be alphanumeric with the symbols.
3. Always enable the spam filters.
4. Don't click the links from unknown sources.
5. Always enable the Firewalls.

3.1.2 E-Mail Threats and Secure E-Mail

E-Mail full form is electronic mail. With e-mail service users exchanges various types of data. The cybercriminals target the victim's e-mails and their email accounts to run their cybercriminal activities.

3.1.2.1 E-Mail Threats

The E-Mail is prone to various threats. Some of the E-Mail threats are as follows.

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- i. **SpamE-Mails:** Spam-Mails refer to unwanted e-mails. The cybercriminals send bulk e-mails to the victims. The spam emails may contain fake information or encourage the victims to send their personal information to the cybercriminals.
- ii. **PhishingE-Mails:** Phishing is a cyber criminal sends fake emails and fake links to the victim. With this the cybercriminal targets to steal the victim's login information or credit/debit card information or install the malware software into the victim's computer.
- iii. **E-Mail Spoofing:** To steal sensitive information from the victim, the attackers forged the email headers as the trusted email addresses and send those emails to the victims. It illusion the victim's that the emails came from trusted email addresses.
- iv. **Man-in-Middle Attack:** When the sender sends the data to the receiver then the cybercriminal steals that data before receiving it from the receiver and the cybercriminal may modify that data. After that the cybercriminal routes that data to the receiver.
- v. **Malware E-Mails:** Cybercriminals send e-mails attached with malware programs. When the victim clicks those attachments, it will automatically install and run the program. This Malware steals the data and may destroy the data on the victim's computer.

3.1.2.2 Secure E-Mail

Cybercriminals attack e-mail accounts with various threats. Therefore, it is very essential to secure our e-mails from cybercriminal attacks.

The following methods are useful to secure the E-Mail.

- i. ***Always enable the Spam Filters:*** To filter the spam e-mails from the regular e-mails, always enable the spam filters. Therefore, the users don't overlook the important e-mails because of spam e-mails.
- ii. ***Don't click the attachments from unknown E-Mail Addresses:*** Don't click the attachments from unknown e-mail addresses. Because it may contain malware code. If it is compulsory to download, then first it should be scanned with anti-virus or anti-spyware software.
- iii. ***System security software should be up to date regularly:*** To protect the user's computer from the latest threats the system security software each time releases its updated versions. Therefore, it is necessary to update this software each time.
- iv. ***Always use strong Passwords:*** To protect your e-mail accounts you always should use strong passwords. The passwords should contain alphanumeric and symbols. That means the passwords should contain capital letters, small letters, numbers, and symbols. Don't use generic words as passwords.

- v. ***E-Mail account should be Logout properly:*** After finishing your work with your e-mail account, then should log out of the e-mail account properly. This process prevents unauthorized access of your e-mail account.

3.1.3 Viruses and Antivirus Software

3.1.3.1 Computer Viruses

A Computer virus is a type of malware program that damage or delete the data in the victim's computer. It is capable to spread to other computers from the victim's computer.

Symptoms of Computers infected by Computer Viruses:

With the help of some of the symptoms, we can easily identify that the computer is infected with computer viruses. The following are some of the symptoms to identify the computers infected by computer viruses.

1. **Pop-up Windows:** When the computer is infected by viruses then the automatically opens too many Pop-up windows.
2. **Speed of the computer:** If the computer is infected with viruses, then the change of speed drastically changed. The viruses decrease the speed of the computer and finally may crash the computer.
3. **Logout of the accounts automatically:** With the effect of the viruses the computer automatically logs out of the accounts.

4. **Automatically execution of the software:** various software of the virus-infected computer will execute automatically.
5. **Automatically update the computer settings:** The viruses will automatically modify the settings of the computer. For example, it is modifying the theme of the computer.

3.1.3.2 Types of Computer viruses

The different type of computer viruses is as follows.

1. **File Infector Virus:** This virus generally enters the victim's computer either from games software or word processor software. This virus first infects a single file, then it spreads to other files.
2. **Web Scripting Virus:** A web scripting virus is a type of malicious scripting code. It injects into the website pages to destruct the security of the web browsers.
3. **Boot Sector Virus:** The boot sector contains the files, which are required to start the operating system. This boot sector virus infects the master boot record of the hard disk. It will damage the data of master boot records.
4. **Direct Action Virus:** This virus is installed or hidden in the computer memory. Therefore, it is also known as a non-resident virus. It has no effect on system performance, but it binds directly to the specific files that it infects.

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5. **Multipartite Virus:** This virus spreads in multiple ways. It infects both the boot sector and executable files at the same time [3].
6. **Polymorphic Virus:** Polymorphic means having various forms. When this virus replicates, it automatically changes its form.
7. **Rootkit Virus:** Cybercriminals secretly install this virus on the target computer. With this, the cybercriminals remotely access that computer.

3.1.3.3 Antivirus Software

Antivirus software protects computers from viruses. This software prevents and deletes viruses from the computer. There are different types of antivirus software available in free versions and paid versions.

It scans the computer data and user activities regularly. If any suspicious activities or data are found, then this software either blocks or delete that data.

Some of the Antivirus software are AVAST Antivirus, Norton Antivirus, Comodo Antivirus, McAfee Antivirus, Kaspersky Antivirus, etc.

Advantages of Antivirus Software:

1. It protects the computer from malware attacks.

2. It blocks the activities of the victim's computer remote access by cybercriminals.
3. It warns of the suspicious software activities, web links, and attachments of the e-mails to the users.
4. It protects the user's saved usernames and passwords.
5. It identifies and prevents to execution of malware programs from removable devices to the computer.

Points to be cautious:

- Regularly update the antivirus software [2].
- Caution should be taken while installing the freeware Antivirus software. It may be trapped of cyber criminals [2].

3.1.4 Firewalls

3.1.4.1 Basic Terminologies of Firewalls

- **Packets:** In the computer network the small chunks of the message.
- **Protocols:** Protocols are the set of rules for the process of transmitting the data between the computers.
- **Network Traffic:** The amount of data transmission through the network at any given time.
- **Gateway:** A gateway is a network infrastructure node that connects two networks that use different transmission protocols.

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Firewalls can protect a single computer or network of computers from network-based security threats. It regularly monitors the data transmission from the network of computers. It prevents the malware programs to attack the user's computer. Firewalls are both in hardware and software format.

3.1.4.2 Firewalls Characteristics

1. It protects the computer from malware programs.
2. It allows only valid data transmission.
3. It blocks the unauthorized data that tries to enter into the computer.
4. It supports flexible security policies.
5. Firewalls can be configured in a variety of ways.

3.1.4.3 Types of Firewalls

Different types of firewalls are described as follows.

1. **Packet Filtering Firewalls:** Based on the user-defined protocols it has monitored the incoming and outgoing packets. If any suspicious packets are found, then firewalls block those packets.
2. **Stateful Inspection Firewalls:** This firewall monitors the connection status of the packets. If any suspicious connections occur, then the firewalls block those packets.

3. **Proxy Firewalls:** Proxy firewalls acts as a gateway between networks. It has the features of stateful firewalls, and it also monitors the application layer protocols that are the communication protocols between the computers.
4. **Circuit level Firewalls:** These Firewalls verify the security mechanism of the connection at the time of connection establishment. After connection establishment, the packets will transmit between the computers without verification of the packets.
5. **Next-Generation Firewalls:** The network before sending the packets from the source computer these firewalls thoroughly checks the security mechanism. If the packets are valid, then it allows the transmission to the destination computer. This firewall implements the latest security mechanisms to verify the packets.

3.1.5 Cryptography

The word cryptography was coined by combining two Greek words Krypto meaning hidden and Graphene meaning writing [4]. The main advantage of Cryptography is to transmit secure data through an insecure or secure medium.

3.1.5.1 Basic Terminologies of Cryptography

- **Plaintext:** The original data.
- **Ciphertext:** The unreadable format of the original data.
- **Cryptographic Key:** It is the combination of the alphanumeric characters used for cryptography algorithms.

3.1.5.2 Encryption

The Plaintext will encrypt with a Cryptographic key to generate the Ciphertext. For Example, The Plaintext “HELLO” can be converted to the Ciphertext that is “P#VH1”. See Figure 3.1.1.

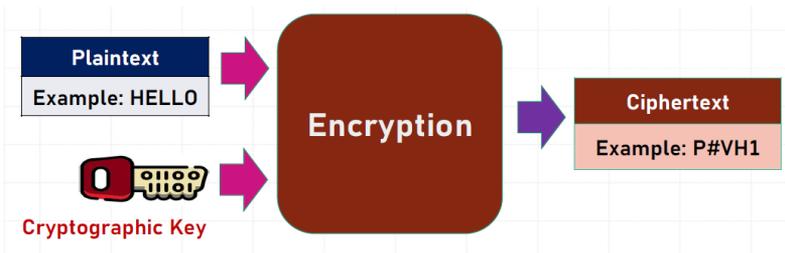


Figure 3.1.1: Encryption

3.1.5.3 Decryption

The Ciphertext will decrypt with a Cryptographic key to generate the Plaintext. For example, The Ciphertext “P#VH1” can be converted to Plaintext “HELLO”. See Figure 3.1.2.



Figure 3.1.2: Decryption

3.1.5.4 Types of Cryptography Algorithms

The cryptographic algorithms will be broadly divided into three categories.

1. **Symmetric Key Algorithms:** The source and destination use the same secret key to encrypt and decrypt the message. Example: AES Algorithm.
2. **Asymmetric Key Algorithms:** These algorithms use two types of keys, i.e., a Public Key and a Private key. The Plaintext can be encrypted with the public key and the ciphertext can be decrypted with the Private Key. Example: RSA Algorithm.
3. **Hash Function Algorithms:** The plaintext will be encrypted, but it's impossible to decrypt. Therefore, these algorithms are also called Message-Digest Algorithms or One-way Encryption Algorithms. Example: SHA Algorithm.

3.1.5.5 Advantages of Cryptography

1. **Secure Communication:**The cryptography provides Secure Communication during the data transmission. The secure communication of the website addresses contains Hyper Text Transfer Protocol Secure. It is used to secure communication over a computer network[5].
2. **End-to-End Encryption:**The cryptography provides “end-to-end encryption”. This mechanism protects the data from cybercriminal attacks such as Man-in-Middle Attacks, etc.
3. **Securely Store the Passwords:**It is useful to securely store the passwords in databases of user accounts. When the cybercriminals try to hack the database, then the cybercriminals fail to retrieve the original passwords from hashing passwords.
4. **Data Confidentiality:** Cryptography provides data encryption and decryption mechanism. Therefore, original data doesn't steal.
5. **Authentication:** The cryptography mechanism provides a highly secure authentication system. Therefore, it avoids spoofing threats.

3.1.5.6 Disadvantages of Cryptography

1. This mechanism consumes more time to implement.

2. It is prone to brute force attacks, i.e., a trial-and-error mechanism to guess the passwords.
3. Cryptography does not protect against the cyberthreats of weak security design of the system.

3.1.6 Digital Signatures

A **digital signature** is a mathematical scheme for verifying the authenticity of digital messages or documents[7]. In this mechanism the data do not maintain confidentiality it is only verified whether the data is sent from an authorized user or not.

The Digital signature is based on the public key infrastructure (PKI) model. That is for this mechanism, it is using Asymmetric key algorithms. And using a hash function algorithm to generate a hash value also called the checksum. The checksum of the file can be calculated by the hash function. The purpose of the checksum is to detect the errors and alterations of the file while transmission.

3.1.6.1 Digital Signatures Process

For the digital signature process, there are different processes implemented at both the sender's side and receiver's side. The detailed processes of sender and receiver are as follows.

3.1.6.1.1 Sender's Process:

Step-1:The sender implements the Hash function algorithm to the sender's document to generate a hash value. See Figure 3.1.3.

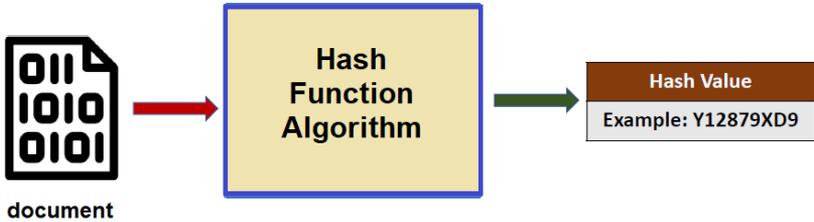


Figure 3.1.3: Hash value generation

Step-2:To generate the digital signature, the sender encrypts the hash value with the sender's private key. See Figure 3.1.4.

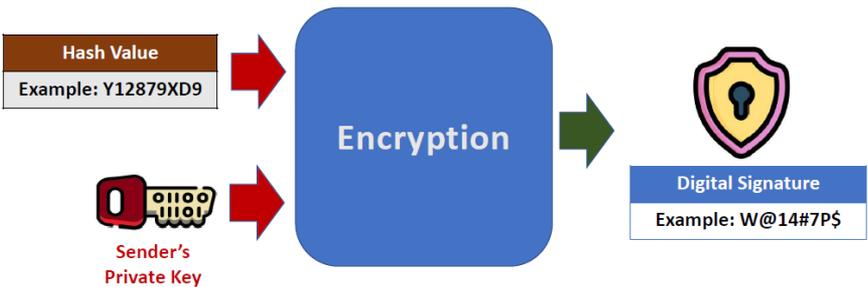


Figure 3.1.4: Digital Signature generation

Step-3: Sender attached the digital signature to the document.

Step-4: The digital signature document sends to the receiver.

3.1.6.1.2 Receiver's Process:

Step-1: The receiver will detach the document and digital signature from the digital signature document.

Step-2: The receiver generates the hash value of the sender's document using a hash function algorithm. Like, see Figure 3.1.3.

Step-3: The receiver decrypts the digital signature with Sender's public key then the receiver gets a decrypted value. See Figure 3.1.5.

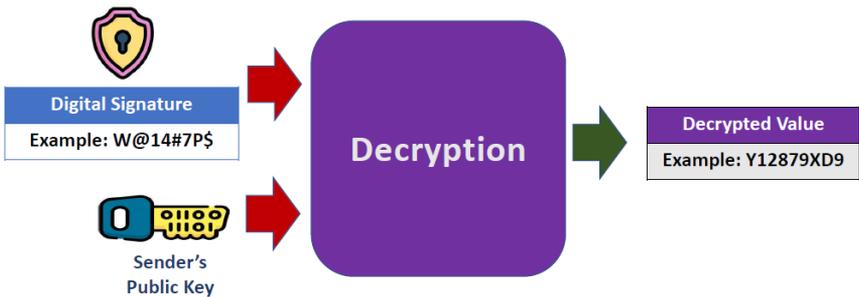


Figure 3.1.5: Decrypting value from Digital Signature

Step-4: The receiver will compare the hash value of the sender's document and decrypted value of the digital signature.

Step-5: If both hash value and decrypted text are matched, then the receiver confirms that the document was digital signed by the sender.

3.1.6.2 Advantages of Digital Signature

1. Protect the data from unauthorized access.
2. Easily track the status of digital signed data.

3. Digital signed data automatically stamped by Date and Time.
4. Digital signature mechanism avoids digital frauds.
5. Forged of digital signature not possible.

3.1.6.3 Disadvantages of Digital Signature

1. To access the digital signature both sender and receiver should have digital certificates.
2. Sometimes the users may fail to protect the security keys from strangers.
3. To verify digital signed certificates both sender and receiver should buy the verification software.
4. If the sender and the receiver have different digital signature standards, then it is incompatible to exchange digital signed documents.
5. Hardware malfunctions make the access of digital signed data becomes difficult.

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Test Your Knowledge

Chapter 3.2

Copyright Issues

3.2.1 Introduction:

One of the branches or features of Intellectual Property Rights is copyright (IPR). "Intellectual Property, very roughly, encompasses the legal rights that come from intellectual effort in the economic, scientific, literary, and creative domains," according to the World Intellectual Property Organization (WIPO). For two key reasons, countries have laws to protect intellectual property. One is to provide formal voice to creators' moral and economic rights to their inventions, as well as the public's rights to access those creations. The second is to stimulate creativity and the dissemination and use of its results as a purposeful act of government policy, as well as to support fair commerce, which would contribute to economic and social progress. Violations of copyright laws could result in a variety of legal penalties. On the other hand, the law allows libraries to utilise copyrighted material for research and scholarly purposes without the copyright holder's permission. Furthermore, the copyright statute of 1957 makes any breach or infringement of fair use of library resources unlawful.

3.2.2 Copyright law:

Copyright is an exclusive legal right granted to a creator or a group of individuals to protect their work or creativity from unauthorised reproduction, adaptation, translation, distribution, or public performance by others without the creator's or person responsible for the work's existence's prior permission. The copyright's goal is to protect and compensate the general public's advantages, i.e. the writers' effort on the final product. It motivates authors to continue producing and completing new works on a regular basis.

To be protected by copyright law, a work must have the following characteristics.

a) The work must be original (original meaning that it was generated from inspiration rather than being duplicated from other sources). The job has to be made for the first time.)

b) It has to be rectified in some way.

The work must be presented in an expressible and physical form that can be identified in a fixed form/identified in its existence or tangible form, such as paper, recordings on optical media, paintings, documents, web servers, and so on.

c) Must be First publication

An original work, should not be published before.

d) Work published after the author's death must have the author's citizenship in India at the time of death.

The following works are protected under Section 13 of Chapter III of the Indian Copyright Act:

- Literary works
- Musical works
- Dramatic works
- Artistic works
- Cinematograph films
- Architectural works
- Sound recordings
- Computer program/software

3.2.2.1 Copyright protection is not provided for:

1. Work that isn't in a concrete form
2. Titles, names, short phrases, slogans, procedures, factual information, symbols, or designs — these works may be protected under trademark law.
3. Concepts, techniques, processes, plans, principles, discoveries, and guidelines — these works may be protected under patent or trade secret legislation in some situations.
4. Copyright law does not apply to works that are already in the public domain and whose original authorship cannot be traced.

5. Copyrighted works that have already passed their expiration date

3.2.2.2 Rights of Author/creator:

Copyright is a set of legal rights granted to an author by a court. According to Section 14 of Chapter III and Section 57 of Chapter XI of the Indian Copyright Act, the author has been granted various unique and special rights, which can be split into three categories:

1. Negative Rights vs. Statutory Rights

The original author has an exclusive legal or statutory right to his work under copyright law. It puts a 'negative duty' on others, prohibiting them from utilising or profiting from the work without the author's permission.

Economic Rights No. 2

The economic right allows the author to profit financially. The inventor can earn royalties by wholly or partially assigning rights to others. According to international conventions, every country copyright statute generally grants the copyright holder the following exclusive rights.

- Adaption rights
- Distribution rights

- Public performance rights
- Public display of works rights
- Rental rights
- Reproduction rights
- Translation rights

3. Moral Rights.

Even after the assignment of copyright work to others, whether entirely or partially, copyright law always protects the creator. Moral rights give an author the right to have his name on a work for the rest of his life, and they protect him against any distortion or modification of the work, as well as any other offensive conduct in respect to the work, that would harm his reputation.

3.2.2.3 Term of Copyright protection:

Normally, copyright protection does not necessitate any type of registration. An author immediately owns the copyright to his work once it is created in tangible form. Section 22-29 of Chapter V of the Indian Copyright Act describes the duration of copyright protection for certain works. The copyright protection lasts for the period shown below.

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1. The copyright term for published literary, dramatic, musical, and artistic works is the author's lifetime plus 60 years after his or her death. The term begins 60 years after the death of the final author in the case of numerous writers.
2. The copyright term for anonymous and pseudonymous works is 60 years from the date of publication.
3. Photographs, cinematograph films, and sound recordings have a 60-year copyright protection period from the date of publication.

3.2.2.4 Infringement of Copyright:

Infringement of copyright occurs when someone violates a copyright law without first obtaining a licence or permission from the creator of the work. Copyright law gives an author unique legal rights to receive all kinds of advantages from his work.

Using any copyrighted work without the permission of a copyright owner is an infringement of copyright law, according to section 51 of Chapter XI of the Indian copyright act, and the following situations could be considered infringements of copyright. Any person who infringes on a copyright is fully liable for his or her actions.

- i. Performing copyrighted material in public without the owner's permission;

- ii. Using copyrighted work for any kind of commercial gain.
- iii. Distributing for the purpose of commerce or importation
- iv. Reproduction of a substantial portion of a copyrighted work in any material form
- v. Circulating among unauthorised individuals
- vi. Unauthorized adoption or translation of copyrighted work
- vii. Resale or rental of intellectual goods to others

Fair dealing or fair use:

The notion of fair use is a broad concept with a wide range of application. The courts have established fair use dealings in a variety of contexts throughout their rulings. The following are the four doctrines outlined in the United States Code:

- i. Damage to the copyright work's market worth
- ii. Nature of the copyright work - public access, unpublished, copyright expired
- iii. Purpose of usage, i.e. commercial, educational, scientific, or any other social cause
- iv. Use of work in a significant way

Fair use is an important component of copyright law because it allows you to reproduce a copyrighted work in a way that is only used for the

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purposes listed below and is not considered infringement. Fair usage is a vital feature that promotes knowledge progress and pushes people to act in a fair and utilitarian manner.

1. For personal use only, including study
2. To criticise or review other people's work
3. In any type of legal process
4. Copyrighted material could be archived to safeguard it against damage or loss.
5. Current events and news reporting in periodicals and magazines
6. Public libraries, under the discretion of the person in charge, make no more than three copies of a book that is not available for sale in India.
7. A teacher's use of class directions to his students
8. Work can be utilised for composing replies for examination purposes and as part of questions.
9. Can be done or used by personnel and students in educational institution course activities. In this case, the audience must be limited to the institution's staff and students.
10. Unpublished works in libraries and other institutions may be reproduced for research or private study.
11. Non-profit reproduction of copyrighted material for disabled people, but the institute should make sure that only they have access to the copies.

Material with copyright and a librarian:

Librarians are the managers who provide different sorts of information resources through various channels. Libraries are the important intermediates in giving information to users. Published, unpublished, print, and non-print works are all types of information. The librarian has established connections with authors, publishers, aggregators, distributors, vendors, and users, among others. The most difficult responsibility for a librarian is to strike a balance between copyright and legal usage of copyrighted content.

By raising understanding about copyright regulations, the librarian can protect the organization's reputation and prevent its stakeholders from misusing copyrighted information. According to the law, the person who has infringed on the material is fully liable for his actions. Violations of copyright laws could result in legal battles between the copyright owners, publisher, distributor, vendor, aggregator, and the institution's user or stakeholder. With regard to any form of electronic resource procurement, extreme caution should be exercised during subscription and its agreements, and it is preferable to consult a legal expert during the process. While allowing public access to the library, librarians must assure copyright protection.

3.2.2.5 Copyright Symbols and its combinations

| | |
|---|--|
|  | Attribution – you must acknowledge the author of this work if you use it, and comply with any conditions they require (such as, for example, a link back to their website) |
|  | No derivative works – you can only use this work as it is. You are not allowed to adapt or modify it. |
|  | Share alike – if you create anything that is based on this work, you must share it with other people under the same licence as the original work. |
|  | Non-commercial – you must not use this work, or anything based on this work, for commercial purposes. |



Attribution

Others can copy, distribute, display, perform and remix your work if they credit your name as requested by you



No Derivative Works

Others can only copy, distribute, display or perform verbatim copies of your work



Share Alike

Others can distribute your work only under a license identical to the one you have chosen for your work



Non-Commercial

Others can copy, distribute, display, perform or remix your work but for non-commercial purposes only.



1. <https://copyright.gov.in/>
2. <https://copyright.gov.in/frmfaq.aspx>
3. <https://www.copyright.gov/what-is-copyright/>
4. <https://www.wipo.int/copyright/en/>
5. <https://fairuse.stanford.edu/>
6. https://www.alt-codes.net/copyright_alt_code.php

Chapter 3.3

Government of India Digital Initiatives in Higher Education

3.3.1 Introduction

Digital Education is an evolving area which is primarily concerned with the teaching learning-process using digital medium. The continuous advancement in the field of Information and Communication Technology (ICT) and the internet (with virtually unlimited supply of digital resources) has made multiple modes of digital education possible. Under the 'Digital India' movement, the Government of India is sponsoring and establishing several digital initiatives in higher education, in addition to educational institutions. Department of Higher Education, Ministry of Human Resource Development oversees the extension of access and qualitative technology development in higher education through world-class digital projects such as massive open online course (MOOC) platforms, digital libraries, etc. as part of this planned process. The MHRD, GoI administering a program called “National Mission on Education through Information and Communication Technology (NMEICT)” to leverage the potential of ICT to make the best quality content accessible to all learners in the country, free of cost.

3.3.2 What is NMEICT?

NMEICT is a mission approved by the Government of India on the 2nd January, 2009. It was launched on 3rd February, 2009. It is a centrally sponsored scheme which entails 75% contribution from the Centre and 25% from States/Institutions for connectivity. The main objective is to provide opportunities for all the teachers and experts to pool their collective wisdom for the benefit of every Indian learner.

3.3.2.1 Objectives of NMEICT:

- Building connectivity and knowledge network among and within institutions of higher learning in the country.
- Spreading digital literacy for teacher empowerment.
- Development of knowledge modules having the right content to take care of the aspirations of academic community and to address to the personalized needs of the learners
- Standardization and quality assurance of e- contents to make them world class.
- Making available of e-knowledge contents, free of cost to Indians.
- Optimization of low cost access devices for use of ICT in education.
- Providing support for the creation of Virtual Technological University.

The various prominent digital initiatives under this programme are:

- SWAYAM
- NPTEL
- SWAYAM PRABHA
- National Academic Depository
- National Digital Library of India
- E-Sodh-Sindhu
- Virtual Labs
- e-acharya
- e-Yantra
- e-Vidwaan
- e-Kalpa

3.3.3 SWAYAM

SWAYAM, which means “self” in Sanskrit, is the acronym for “Study Webs of Active Learning for Young Aspiring Minds” is an indigenous (Made in India) IT Massive Open Online Courses (MOOCs) Platform for providing the best quality education that can be accessed by anyone, anytime and anywhere using the IT system.

It was launched on 15 August 2016 and dedicated to the nation by former President of India Sri PranabMukharjee on July 9, 2017 on the eve of ‘*Gurupoornima*’.

3.3.3.1 What is MOOCs?

MOOCs are online courses that give interactive learning content to numerous people at the same time. They permit the best quality education to be shared with everyone, bringing about parity in terms of educational quality.

- **Massive** - potential of extremely large enrolments
- **Open** - both enrolment and resources point of view.
 - o Courses are open to anyone without any restrictions or any prior learning requirements.
 - o Open courses that are free for anyone interested in registering with open courseware that can be downloaded, saved, and reused.
- **Online** - content delivery mode.
- **Course** - how a course operates requiring enrolment, a definite timeline, instruction delivery and assessment.



Figure 3.3.1: Some MOOCs Platforms

3.3.3.2 Need of MOOCs in India:

- In India, where there is shortage of qualified faculty and resource crunch in setting up physical infrastructure to reach

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out the learners at mass scale, MOOCs seems to be a viable solution.

- However, instead of emulating the western world we need to design a solution that suits best with the country's pressing need to impart quality mass education.

3.3.3.3 Objectives of SWAYAM

- To provide *access* to free education to all.
- To generate a sense of *equality* among students.
- *Quality* of classroom teaching shouldn't be compromised.

3.3.3.4 SWAYAM Logo



3.3.3.5 SWAYAM URL

<https://swayam.gov.in/>

3.3.3.6 Features of SWAYAM:

- SWAYAM platform is developed by Ministry of Human Resource Development (MHRD) and All India Council for Technical Education (AICTE) with the help of Microsoft.
- Its ultimately capable of hosting 2000 courses and 80000 hours of learning: covering school, under-graduate, postgraduate, engineering, law and other professional courses.
- It has support from network/Cloud that can support 10 Lakh concurrent users and up to 3 Crores Learners.
- All the courses on this platform are interactive, prepared by the best teachers in the country and are available, free of cost to the students in India.
- More than 1,000 specially chosen faculty and teachers from across the Country have participated in preparing these courses.
- It was designed to achieve the three cardinal principles of Education Policy viz., *access, equity, and quality*.
- The courses hosted on SWAYAM are in 4 quadrants – Video lecture, specially prepared reading material that can be downloaded/printed Self-assessment tests through tests and quizzes, and An online discussion forum for clearing the doubts.

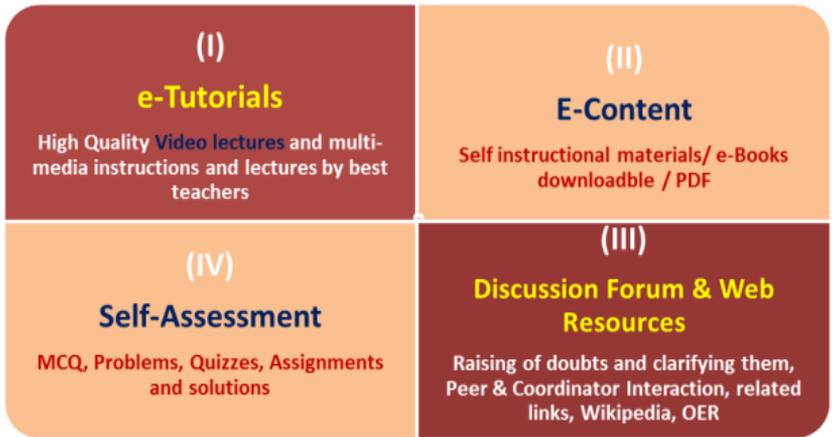


Figure 3.3.2: Some MOOCs Platforms

- Various steps have been taken to enrich the learning experience by using audio-video and multimedia and state of the art pedagogy/technology.
- SWAYAM, an instrument for self-actualization, provides opportunities for life-long learning.
- The e-Content is being translated into eight regional Indian languages, These eight languages are Bengali, Gujarati, Hindi, Kannada, Malayalam, Marathi, Tamil, and Telugu.
- For any Indian learner, SWAYAM is absolutely free of cost for learning but some fees are applied in case of certificate.
- Students who wish to obtain certificates for their courses need to get themselves registered on the SWAYAM portal. Also, certificates are awarded to students only after successful

completion and clearing the proctored examination of the course at designated Test centers.

- The SWAYAM is a new platform to Indian learner that is complementary to formal education in India
- SWAYAM is a platform by which any of the learners can get easily attached with the best teachers like the teachers of IITs, IIMs etc.
- Curricula and courses that can meet the needs of life-long learners.
- There are two types of courses offered through SWAYAM – Credit and Non-Credit.
 - *Credit course* is a course taught for at least *one semester* as part of a subject.
 - *Non-credit courses* include courses such as awareness programme and specific skill-set training, which are not part of any set curriculum. Such courses can be of shorter duration, usually ranging from *two to four months*.
- It is the very good platform because anyone can register and can study through SWAYAM that means opportunity is being given to everyone.

3.3.3.7 National Coordinators for SWAYAM

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In order to ensure delivery of quality content, Nine National Coordinators have been appointed by the government and assigned a specific sector for preparation of online courses for SWAYAM.

The Nine National Coordinators along with their designated sectors are as mentioned below:

| National Coordinator | Responsible Sector for Content Generation |
|--|--|
| AICTE (All India Council for Technical Education) | For self-paced and international courses |
| NPTEL (National Program on Technology Enhanced Learning) | Engineering |
| UGC (University Grants Commission) | Non-technical post-graduation education |
| CEC (Consortium for Educational Communication) | For undergraduate education |
| NCERT (National Council for Educational Research Training) | For school education |
| NIOS (National Institute of Open Schooling) | For school education |
| IGNOU (Indira Gandhi National Open University) | Out of school students |
| IIM B (Indian Institute of Management, Bangalore) | Management studies |

| | |
|---|--------------------------|
| NITTTR (National Institute of Technical Teachers Training & Research) | Teacher Training Program |
|---|--------------------------|

All India Council for Technical Education (AICTE)

- AICTE was appointed as the 9th National MOOC Coordinator for SWAYAM in 2017.
- AICTE will handle all the courses that do not fall under the purview of any other National Coordinator.

National Program on Technology Enhanced Learning (NPTEL)

NPTEL is a project of the Ministry of Human Resource Development (MHRD) under the umbrella of 7 Indian Institutes of Technology (IIT's) [*IIT Bombay, IIT Delhi, IIT Kanpur, IIT Kharagpur, IIT Madras, IIT Guwahati, IIT Roorkee*] and Indian Institute of Science (IISc) [Bengaluru].

NPTEL Features:

- It is a project funded by Ministry of Human Resource Development (MHRD) was first conceived in 1999 to pave the way for introducing multimedia and web technology to enhance learning of basic science and engineering concepts.
- NPTEL has been offering self study courses across engineering, humanities and science streams for more than a decade.

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- NPTEL Journey started a way back to SWAYAM by offering online certification for its courses from March 2014.
- NPTEL youtube channel is the most subscribed educational channel in the world.
- NPTEL has more than 54000 + hours of video content, transcribed with subtitles.
- Now NPTEL became the National Coordinator for SWAYAM to coordinate the Engineering Courses.

NPTEL Website:

<http://nptel.ac.in>

University Grants Commission (UGC)

- It was established in 1956, through an Act of Parliament.
- The objective was to maintain the standards of university education in India.
- It is Coordinating Courses related to Non-technical post-graduation education in SWAYAM.

Consortium for Educational Communication (CEC)

- CEC is the National Coordinator for Undergraduate MOOC and 11 SWAYAM Prabha DTH channels.

National Council for Educational Research Training (NCERT)

1. The main objective is to improve school education in India.

National Institute of Open Schooling (NIOS)

- Trained more than 13 lakhs, untrained in-service elementary teachers, through SWAYAM platform
- Operates through a network of 5 departments, 22 regional centres.
- NIOS offers 42 courses on SWAYAM platform.

Indira Gandhi National Open University (IGNOU)

- Established by an Act of Parliament in 1985.
- Tried to increase the Gross Enrollment Ratio (GER) by offering high-quality teaching through Open and Distance Learning (ODL) mode.
- It has a network of 67 regional centres.

Indian Institute of Management, Bangalore (IIM Bangalore)

- 1st Management College in India to offer Massive Open Online Courses (MOOC's) on the edX platform.
- It is the coordinating institute for management education for SWAYAM.

National Institute of Technical Teachers Training and Research (NITTTR)

1. NITTTR was established in Chennai in 1964.

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2. The objective is to improve the quality of Engineering Education system in India
3. NITTTR Chennai also serves as one of the National Coordinator (NC) for SWAYAM for the teacher training program

3.3.3.8 SWAYAM Registration Process

For registration in SWAYAM for different programs students should register in the portal. The detailed registration process steps explained below.

1. In the initial step, students must visit the official website of SWAYAM on any suitable and safe web browser.
2. Then, Click on the “**SIGN IN/ REGISTER**” button given on the top right corner of the homepage.

About Swayam | All Courses | National Coordinators | Local Chapters

COURSE CATALOG ▾

Search Catalog...



SIGN-IN / REGISTER



3. Click the “**Sign up now**” link if you don’t have an account.

OR

Username

Password

Sign in

Forgot your password?

OR

Don't have an account? [Sign up now](#)

4. The registration form will be displayed.

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Username

New Password

Confirm New Password

Email Address

Send verification code

CREATE

CANCEL

5. Enter all the required information on the form.
6. Tap the button “**Send Verification Code**” and enter the OTP when you receive it.
7. Hit the “**Create**” button, and your account will be created.
8. Next, log in with user name and Password to enroll for the courses in the portal.

3.3.4 SWAYAM Prabha

- SWAYAM PRABHA is an initiative to provide 34 (Out of which 02 channels added recently to the initial 32 channels) high quality educational channels through DTH (Direct to Home) across the length and breadth of the country on 24X7 basis via GSAT-15 satellite.

- It was launched on 15 August 2016 and dedicated to the nation by former President of India Sri PranabMukharjee on July 9, 2017 on the eve of ‘Gurupoornima’ along with SWAYAM.
- The contents are prepared by different MHRDAgencies like CEC, IGNOU, IITs, NIOS and NCERT.
- Every day, there will be new content for at least 04 hours which would be repeated 5 more times in a day, allowing the students to choose the time of their convenience.
- The channels are uplinked from BISAG (Bhaskaracharya National Institute for Space Applications and Geo-informatics), Gandhinagar.
- The INFLIBNET (Information and Library Network) Centre maintains the web portal.
- INFLIBNET center has also developed an app of SWAYAMPBHA. Students can download it from the UMANG App (Unified Mobile Application for New-age Governance) which can be downloaded from play store. All the current and the upcoming programmeslists and time table can be viewed on the app.

3.3.4.1 SWAYAM PRABHA Channels Categories

| Channel Nos | Subjects related to | Maintained By |
|--------------------|----------------------------|----------------------|
|--------------------|----------------------------|----------------------|

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| | | |
|---------------------------------|--|--|
| Channel 1 to 10, Channel 21 | Non Professional UG Courses | CEC/UGC |
| Channel 11 to 16 | Engineering Courses | NPTEL |
| Channel 17 to 18, Channel 20 | Basic, Applied and Social Sciences | IGNOU |
| Channel 19 | Professional and Vocational Education | NPTEL |
| Channel 22 | Class XI and Class XII- IIT Preparations | IIT – PAL (Professor Assisted Learning) |
| Channel 23-Channel 34 | School Education Class 1 to Class12 : PMeVidya | NCERT |

SWAYAM PRABHA URL:

<https://www.swayamprabha.gov.in/>

3.3.5 References

1. <https://swayam.gov.in/about#:~:text=SWAYAM%20is%20a%20programme%20initiated,all%2C%20including%20the%20most%20disadvantaged.>

2. <https://en.wikipedia.org/wiki/SWAYAM>
3. <https://vikaspedia.in/education/interactive-resources/swayam-learning-portal>
4. <https://www.swayamprabha.gov.in/index.php/about>

Scan the QR Code to Watch the Video Lesson



Test Your Knowledge



Activity

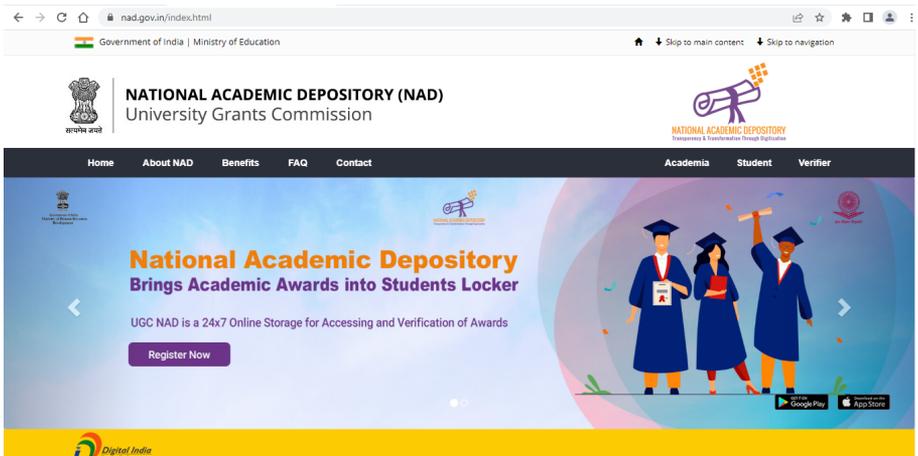
- Register and enrol for One Online Course through any of the Online Learning Platforms like SWAYAM, NPTEL, Coursera etc.
- Install SWAYAM Prabha App and Check for your Semester Course Content in respective channels and List out its Broadcasting and Scheduling Times.

Chapter 3.4

National Academic Depository, National Digital Library of India, E-Sodh-Sindhu, e-acharya, e-Yantra

3.4.1 National Academic Depository:

The National Academic Depository (NAD) is an initiative to provide an online store house of all academic awards. It is a 24X7 online store house of all academic awards viz. certificates, diplomas, degrees, mark-sheets etc. duly digitised and lodged by academic institutions / boards / eligibility assessment bodies. NAD ensures easy access to and retrieval of an academic award and validates and guarantees its authenticity and safe storage. The services of NAD are provided with the collaboration from Digi Locker.



The objectives in NAD are to:

- Operate fully in online mode
- Allow lodging of Academic awards in a digital format, maintaining their integrity
- Allow students to retrieve their lodged academic awards at any time.
- Allow employers and people with prior approval of the concerned student to verify the authenticity of any academic award.
- Maintain the authenticity, integrity, and confidentiality of the database.

The activities of NAD include:

- Make Academic Institutions/Boards/Eligibility Assessment bodies register themselves
- Allow students based on Aadhaar / Mobile Number to register themselves
- Allow Academic Institutions/Boards/Eligibility Assessment bodies to upload the academic awards issued by them.
- Allow Academic Institutions/Boards/Eligibility Assessment bodies to map/link the academic award to the NAD Accounts of Students concerned.

- Allow students to view the academic awards linked to their respective account.
- Allow students to download/print an authenticated copy of the academic award.
- Allow verifying entities to verify the authenticity of the academic award (subject to prior student consent)

3.4.2 Digi Locker

Digi Locker is a flagship initiative of Ministry of Electronics & IT (MeitY) under Digital India programme that aims at ‘Digital Empowerment’ of citizen by providing access to authentic digital documents stored in citizen’s digital document wallet. The issued documents in Digi Locker system are deemed to be at par with original physical documents as per Rule 9A of the Information Technology (Preservation and Retention of Information by Intermediaries providing Digital Locker facilities) Rules, 2016 notified on February 8, 2017 vide G.S.R. 711(E). Users should select Digilocker as the preferred depository for their registration into NAD. Users can go to <https://nad.digitallocker.gov.in> to register themselves for getting access to NAD services.

3.4.3 National Digital Library of India (NDLI)

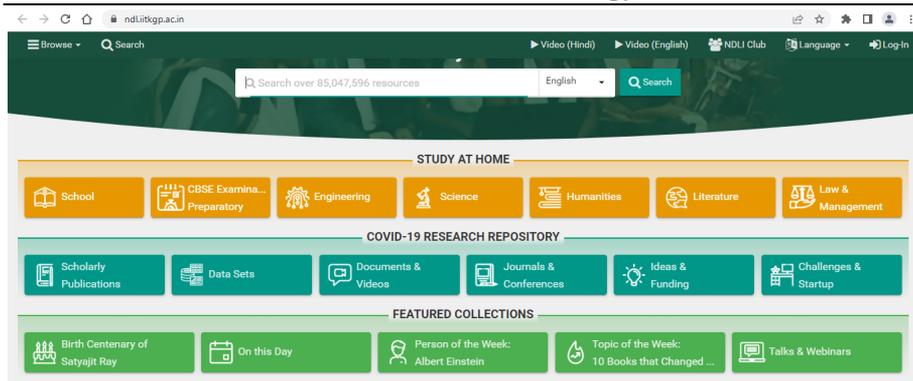
National Digital Library of India (NDLI) is a virtual repository of learning resources with search/browse facilities. It provides a host

of services containing textbooks, articles, videos, audio books, lectures, simulations, fiction, and all other kinds of learning media for the learners'/users' community. It is sponsored and mentored by Ministry of Education, Government of India, through its National Mission on Education through Information and Communication Technology (NMEICT).

It employs a filtered and federated searching for focussed searching to find the right resource with least effort and in minimum time. It also provides user group-specific services for School kids, College students, Job aspirants, Researchers and General Learners. It is designed to hold content of any language and provides interface support for 10 most widely used Indian languages. It provides support for all academic levels including researchers and life-long learners, all disciplines, all popular forms of access devices and differently abled learners. While providing Open Access to users from around the world, contents from some popular sources are only accessible to registered users.

It is developed, operated, and maintained from Indian Institute of Technology Kharagpur. This facility is also accessible via mobile app, available for Android at Google Play. Users can access this facility at <https://ndl.iitkgp.ac.in/>.

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3.4.4 e-ShodhSindhu:

The Ministry of HRD (now renamed as Ministry of Education) has formed e-ShodhSindhu merging three consortia initiatives, namely UGC-INFONET Digital Library Consortium, NLIST and INDEST-AICTE Consortium. The e-ShodhSindhu will continue to provide current as well as archival access to more than 10,000 core and peer-reviewed journals and several bibliographic, citation and factual databases in different disciplines from a large number of publishers and aggregators to its member institutions including centrally funded technical institutions, universities and colleges that are covered under 12(B) and 2(f) Sections of the UGC Act. E-ShodhSindhu can be accessed at <https://ess.inflibnet.ac.in/>.

ess.inflibnet.ac.in

Search-an-article

ICT Initiatives by Ministry of Education

Home About Members E-Resources Search INFED Shodh Shuddhi

Welcome to e-ShodhSindhu: Consortium for Higher Education Electronic Resources

Provides access to e-resources to Universities, Colleges and Centrally Funded Technical Institutions in INDIA.

An Initiative by Ministry of Education, Govt of India

Being Executed by INFLIBNET Centre

Read More Online e-Resources Requisition System

Off-Campus (Remote) access to online resources

More Details

| | | | | | | | | |
|-------|--------------|-------------|----------|------------|---------|---------------------|-----------|-----------|
| 98 | 217 | 75 | 3400+ | 10000+ | 199500+ | 600000 | 21 | 4 |
| CFTIs | Universities | Tech. Inst. | Colleges | e-Journals | e-Books | e-Books through NDL | Resources | Databases |

The main objective of the e-ShodhSindhu is to provide access to qualitative electronic resources including full-text, bibliographic and factual databases to academic institutions at minimal subscription rates.

The other important objectives include:

- Developing a formidable collection of e-journals, e-journal archives, and e-books on perpetual access basis
- Promoting usage of e-resources in member universities, colleges, and technical institutions in India through awareness and training programmes
- Providing access to subscription-based scholarly information (e-books and e-journals) to all educational institutions
- Providing access to scholarly content available in open access through subject portals and subject gateways

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- Moving towards an information-rich society by bridging the digital divide
- Providing access to selected e-resources to additional institutions including open universities and MHRD-funded institutions that are not covered under existing consortia
- Taking-up additional activities and services that require collaborative platform and are not being performed by existing Consortia
- Moving towards developing a National Electronic Library with electronic journals and electronic books as its major building blocks.

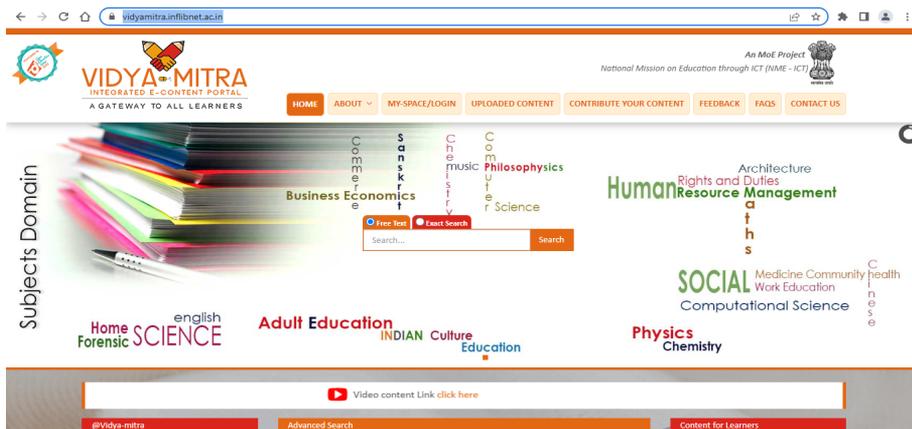
3.4.5 e-Acharya:

e-Acharya, also known as, Vidya Mitra is an online learning portal for all the e-content projects developed under the NME-ICT (National Mission on Education through Information and Communication Technology), Ministry of Education. It provides user friendly facilities to search and browse all hosted content. The content hosted on this platform includes audio/video learning material, textual material, multimedia-enriched materials etc. that can be accessed through a single interface.

It also offers features of faceted search, usage statistics, project-wise access, and user space to keep contributions made by individuals. It covers quality learning resources from top institutions in the country

in eight subject categories that include Agriculture Science, Biological Science, Chemical Science, Physical Science, Medical and Health Sciences, Engineering and Technology, Social Sciences, and Arts and Humanities.

Users can go to <https://vidyamidra.inflibnet.ac.in/> for getting access to the hosted content. Users can contribute open content using "My Space" in the portal after registering themselves for free of cost.

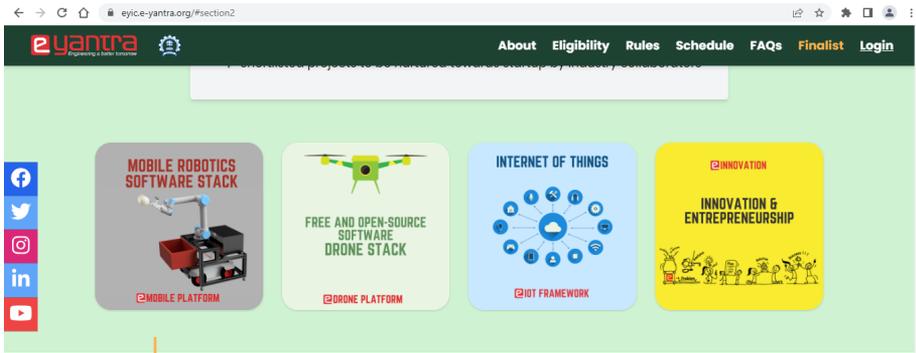


3.4.6 e-Yantra:

e-Yantra is a robotics outreach project implemented by the Department of Computer Science and Engineering at the Indian Institute of Technology, Bombay (IIT Bombay). This platform is funded by the Ministry of Education, GoI, under NMEICT. The main objective of this project is to complement existing Higher Education systems worldwide to innovate and solve local problems across a variety of domains such as: Agriculture, Disaster, Manufacturing

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Defense, Home, Smart Cities and Service Industries through technology. The mission of this project is to create the next generation of engineers with a practical outlook to help in providing pragmatic solutions to real-world problems. The initiative seeks to provide hands-on learning-infrastructure to engineering students who have limited access to labs and mentors.



This project organizes innovative competitions across different levels:

- e-Yantra Robotics Competition (eYRC) - The e-Yantra Robotics Competition (eYRC) is the flagship initiative of the e-Yantra project which is open to students from an engineering or polytechnic background and comprises 2 stages spanning over 6-7 months.
- e-Yantra Innovation Challenge (eYIC) - The e-Yantra Innovation Challenge (eYIC) encourages participants to come up with innovative solutions to real-world problems through a

common technology stack in the competition and is open to different categories of participants.

- e-Yantra School Robotics Competition (eYSRC) - The e-Yantra School Robotics Competition (eYSRC) is a unique competition for young robotics enthusiasts to think, ideate and innovate out-of-the box solutions to real-world problems. e-Yantra introduces a wide variety of skills - Embedded Systems and Robotics, Programming, Computational thinking and many more to children of Grade 8th - 12th.
- e-Yantra Farm Setup Initiative (eFSI) - The e-Yantra Farm Setup Initiative (eFSI) also known as k-Yantra project develops know-how for setting up an automated agriculture project. It comprises a test bed for hands-on learning for students to apply what they learnt in theory. The project prepares a "growing medium: through recycling waste and kitchen waste which is in line with municipal solid waste management and is consistent with "Swachh Bharat". It also plans executes the creation of beds for growing plants. Eventually, it facilitates participants to make gadgets and tools for monitoring the growth of plants.

3.4.7 Conclusion

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In this session, we have discussed about the following digital initiatives from Government of India through NME ICT:

- National Academic Depository – to store and validate academic awards
- National Digital Library of India – to browse through a large pool of academic resources – books, journals, texts, etc.,
- e-Sodh Sindhu – to search research articles in bibliographic databases
- e-Acharya – to find various learning resources including audio/video content
- e-Yantra – to encourage different groups to innovate and solve local problems

3.4.8 References:

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