



GOVERNMENT OF TAMIL NADU

**DIPLOMA COURSE IN
ENGINEERING & TECHNOLOGY**

DIGITAL WORKPLACE SKILLS

FIRST SEMESTER

**A publication under Government of Tamilnadu
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**Untouchability is a sin
Untouchability is a crime
Untouchability is inhuman**

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GOVERNMENT OF TAMILNADU**

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THE NATIONAL ANTHEM FULL VERSION

Jana-gana-mana-adhinayaka jaya he
Bharata-bhagya-vidhata
Punjaba-Sindhu-Gujarata-Maratha-
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchhala-jaladhi-taranga
Tava Subha name jage, TavaSubhaasisa mage,
Gahe tava jaya-gatha.
Jana-gana-mangala-dayaka jaya he
Bharata-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya jaya he.

-Rabindranath Tagore

SHORT VERSION

Jana-gana-mana-adhinayaka jaya he
Bharata-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya jaya he.

AUTHENTIC ENGLISH TRANSLATION OF THE NATIONAL ANTHEM

Thou art the ruler of the minds of all people,
Thou dispenser of India's destiny.
Thy name rouses the hearts of the Punjab, Sind,
Gujarat and Maratha, of Dravida, Orissa and Bengal
It echoes in the hills of the Vindhyas and Himalayas,
mingles in the music of the Yamuna and Ganges
and is chanted by the waves of the Indian Sea.
They pray for Thy blessings and sing Thy praise
The saving of all people waits in Thy hand,
Thou dispenser of India's destiny.
Victory. Victory, Victory to Thee



THE NATIONAL INTEGRATION PLEDGE

“I solemnly pledge to work with dedication to preserve and strengthen the freedom and integrity of the nation.”

“I further affirm that I shall never resort to violence and that all differences and disputes relating to religion, language, region or other political or economic grievances should be settled by peaceful and constitutional means.”

INVOCATION TO GODDESS TAMIL

Bharat is like the face beauteous of Earth clad in wavy seas;
Deccan is her brow crescent-like on which the fragrant ‘Tilak’ is the blessed
Dravidian land.
Like the fragrance of that ‘Tilak’ plunging the world in joy supreme reigns
Goddess Tamil with
renown spread far and wide.
Praise unto You, Goddess Tamil, whose majestic youthfulness, inspires awe and
ecstasy





PREFACE

Digital Workplace Skills is a vital computing abilities and competencies needed to effectively navigate and utilize digital tools, platforms and technologies within a professional environment. These skills include proficiency in software applications, digital communication, collaboration tools, data analysis, cybersecurity awareness and adaptability to new technologies.

Digital Workplace skills for students encompass a range of abilities necessary to thrive in modern work environments. Students, also need to develop critical thinking, problem - solving, adaptability and digital literacy skills to succeed in today's digital workplaces.

The book entitled, “Digital Workplace Skills” is drafted for the First Year Diploma students of Polytechnic Colleges affiliated to State Board of Technical Education in Tamilnadu, as the state has started implementing the Regulation 2023 in diploma curriculum. It is meticulously crafted to meet the students’ academic needs, about the fundamentals of computer systems and operating systems that run on it. In addition, it outlines the browsers and the search engines as well.

Under basic productivity tool, the most useful application, Word Processing Software is described. The operational efficiency of any knowledge professional can expand their knowledge significantly with an upgradation of the skills of MS Excel / Google Sheets. Hence, in this version of the textbook, the materials have been structured with data handling, formatting, usage of functions, sorting, filtering and chart presentations.

Creating a good presentation is much more than just clicking a few dialog boxes and typing some texts, it requires knowledge and planning. Accordingly, this book illustrates the features of MS PowerPoint and Google Slides. It also covers the online graphic design tools, Canva and Figma, which are used, to create, share and test designs for websites, mobile apps and other digital products and experiences.

The textbook, also contains the fundamentals of E-mail usage, video and web conferencing tools. Furthermore, it elucidates the Drive Sharing and Protection as Google Drive has become an integral part of our digital lives, offering a convenient and secure way to store and access files. Finally, the book concludes by providing a comprehensive understanding of various cybersecurity concepts.

Our primary goal in writing this textbook was to make complex concepts accessible and understandable for students, to be achieved through a clear and lucid style complemented by illustrative examples throughout the text. We extend our heartfelt gratitude to parents, staff and friends for their unwavering support and encouragement throughout the development of this textbook. Ultimately, this book aims to provide a comprehensive guide for students, contributing to their academic success in their Polytechnic Course.

- AUTHORS

SYLLABUS

1000231520	Digital Workplace Skills	L	T	P	C
Practical		0	0	4	2

Introduction

Being able to embrace new technology in the workplace helps to streamline working processes. Digital workplace skills provide knowledge for sharing and collaboration in many new and effective ways. It is used in a connected digital environment providing access to share, present, and report information effectively and efficiently to increase productivity in a safe & secure environment.

Course Objectives

The objective of this course is to enable the student to

1. Introduce the basics of computer hardware, operating systems, and Internet usage.
2. Explore various office productivity tools and text processing.
3. Apply various information analysis tools with the help of spreadsheets.
4. Understand the effective presentation of information.

5. Identify the communication and security tools for information protection.

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Demonstrate the ability to use various operating systems and internet utilities.

CO2: Experiment with various office productivity tools.

CO3: Analyze the information gathered with the help of spreadsheet

CO4: Explore the various communication tools available

CO5: Identify the appropriate tools for securing the information.

Pre-requisites:

Nil

CO/PO Mapping:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	1	2	3	2		1
CO2	3	1		3			2
CO3	3	3		3	1		1
CO4	3	2	1	3	1		2
CO5	3	1	1	2	1		3

Legend: 3-High Correlation, 2-Medium Correlation, 1-Low Correlation

Assessment Methodology

	Continuous Assessment (40 marks)			End Semester Examination (60 marks)
	CA1	CA2	CA3	
Mode	Practical Test (Ex. 1 to 5)	Practical Test (Ex. 6 to 10)	Practical Record Submission	Practical Examination
Duration	2 hours		-	3 hours
Exam Marks	40	40	20	100
Converted to	10	10	20	60
Marks	40			60

1000231520	Digital Workplace Skills	L	T	P	C
Practical		0	0	4	2

Unit I	INTRODUCTION TO DIGITAL WORKPLACE				
Basics of computer - understanding of various computer hardware components (CPU, Memory unit, Display, keyboard, mouse, hard disk and other peripheral devices) and operating systems (Windows, Linux)					2
Ex No 1 a) Basic Navigations in Operating Systems - Windows, Ubuntu etc b) Usage of Browsers (Edge, chrome etc) c) Usage of search engines (Google, Bing etc) (Students have to use any one tool in Board Examination for each of above exercise)					4
Unit II	BASIC PRODUCTIVITY TOOLS				
Exploring office tools- word document creation, basic editing, formatting, Tables, Page Break, Equations, Hyperlinks, and Pictures.					2
Ex No 2 Create a document with basic editing, formatting options, Tables, Equations, Hyperlinks, Pictures					4
Ex No 3 Create a standard covering letter and use mail merge to generate customized letters and generate labels by creating a database.					4
Unit III	INFORMATION ANALYSIS				
Sorting, Filtering, and creation of different charts. Print Preview, Printing, Shortcuts and Exercises. –using Excel /Google Sheets.					3



Ex No 4 Spreadsheet creation, data handling, formatting, calculations using formulae and functions using Excel / Google Sheets. (Students have to use any one tool in Board Examination)	4
Ex No 5 Sorting, Filtering, and creation of different charts. Print Preview, Printing-Using Excel / Google Sheets. (Students have to use any one tool in Board Examination)	4
Unit IV INFORMATION PRESENTATION	
Creation of presentation, formatting, video and sound, slide animation, shortcuts – MS Power point, Google slides. Canva, Figma –designing.	4
Ex No 6 Creation of Presentation, editing, saving, Slide creation, Charts, Tables, Pictures, Smart Art, Slide Number, Header, Footer, Date, Shapes, Video and Sound. Slide Animation, Running a slide show, Print Preview. –PowerPoint, Google slides etc (Students have to use any one tool in Board Examination)	4
Ex No 7 Designing with Canva, Figma	
Unit V COMMUNICATION TOOLS AND INTRODUCTION TO INFORMATION SECURITY	
Introduction to email and usage, overview of video and web conferencing tools, texting tools. Productivity tools in the browser-extension, Introduction to cyber security. Information management-Create a repository using Google Drive.	3
Ex No 8 a. Scheduling–meetings–Google Calendar. b. Mail–Gmail c. Information management- Collection of student Bio data using google forms	4
Ex No 9 Hands-on Video Conferencing Experience with Webex, zoom ,Google Meet etc (Any one tool for board practical examination).	4
Ex No 10 Password protection for sheets, Google drive sharing–permission.	4

Text Books

- NCERT, Chapter 1-3: Computer System, Encoding Scheme and Number Systems, Emerging Trends, Class XI, 2023.
- Carey, P., Des Jardins, C., Shaffer, A., Shellman, M. and Vodnik, S., New Perspectives Microsoft Office 365 & Office 2019: Introductory. Cengage Learning. ISBN:978-0357025741



Reference Book

- Lawrence Miller, Kevin Strohmeyer and Mark Margevicius, Digital Workspace, 2019 by John Wiley & Sons Inc., Hoboken, New Jersey
- AnandShinde, Introduction to Cyber Security : Guide to the World of Cyber Security, Notion Press, 1st edition, 2021, ISBN:978-1637816424.

Web-based/Online Resources

<https://www.futurelearn.com/info/blog/the-complete-guide-t>

<https://applieddigitalskills.withgoogle.com/>

<https://resources.owllabs.com/blog/video-conferencing-tools>

<https://www.canva.com/>

<https://www.figma.com/>

Allocation of Marks for End Semester Examinations

Part	Description	Marks
A	Aim	10
B	Procedure	40
C	Execution	35
D	Result/Printout	10
E	Viva-voce	5
TOTAL MARKS		100

Note: For Practical Record Submission, the printout of the work done by the students should be submitted for every exercise. It should be evaluated for 20 marks. The same have to be submitted for examination, on the first attempt. All the exercises should be completed. One exercise should be given by lot or question paper received from DOTE should be followed for the end semester examination

CONTENTS

DIGITAL WORKPLACE SKILLS

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II	Basic Productivity Tools	20
III	Information Analysis	43
IV	Information Presentation	61
V	Communication Tools and Introduction to Information Security	100



UNIT I

INTRODUCTION TO DIGITAL WORKPLACE

Basics of computer - understanding of various computer hardware components (CPU, memory unit, Display, keyboard, mouse, hard disk and other peripheral devices) and operating systems (Windows, Linux)

Basics of Computers

A computer is an electronic device that can perform a variety of operations based on instructions fed into it. Computers come in

different sizes, shapes, and functionalities, but the basic components that make up a computer remain the same. The following figure depicts the various types of computers.



Microcomputer



Minicomputer



Personal computer



Supercomputer



Laptop



Main Frame

Types of Computers

A **microcomputer** is a type of computer that is designed for individual use. It is a small, self-contained system that includes a microprocessor, memory, storage, input/output devices, and an operating system. Microcomputers are commonly used in homes, offices, and schools for various tasks such as word processing, web browsing, multimedia, and gaming.

A **minicomputer** is a type of computer that falls between mainframe computers and microcomputers in terms of size, processing power, and capabilities. Mini computers were popular in the 1960s and 1970s but have evolved over time.

Personal Computers (PCs) are the most common type of computers used by individuals.

PCs are versatile and can be used for various tasks such as word processing, web browsing, multimedia consumption, and gaming. They come in desktop and laptop form factors.

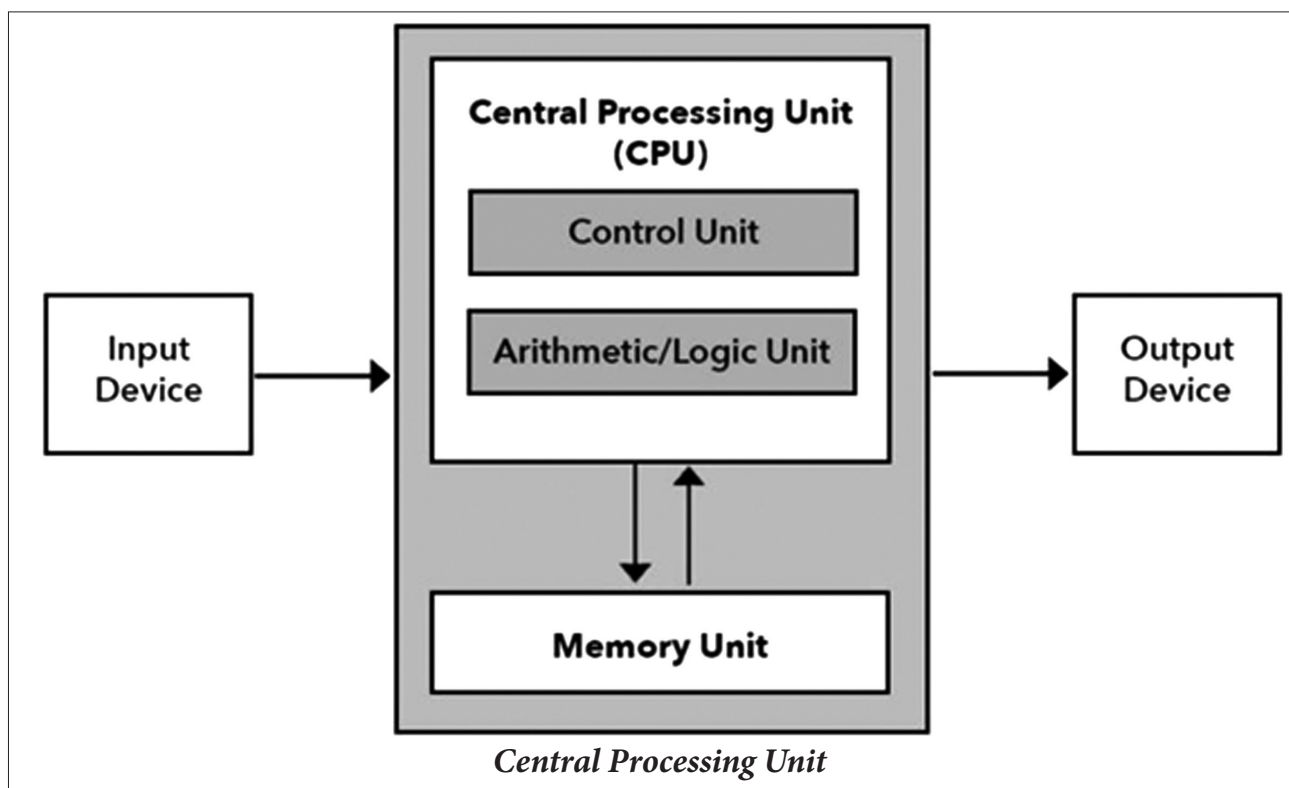
A **mainframe computer** is a large, high-performance computer system that is capable of handling extensive processing and data storage. Mainframes are designed to support critical applications that require high reliability, availability, and security. They have been used by large organizations and government entities for decades.

Supercomputers are the most powerful and fastest computers available. They are used

for complex scientific simulations, weather forecasting, cryptography, and research projects that require massive computational power. Supercomputers are typically built using thousands of processors and can perform trillions of calculations per second.

Computers have become fundamental in modern society and have revolutionized the way we perform tasks. Understanding the basic components of a computer is essential to properly operate it and utilize it to its full capabilities.

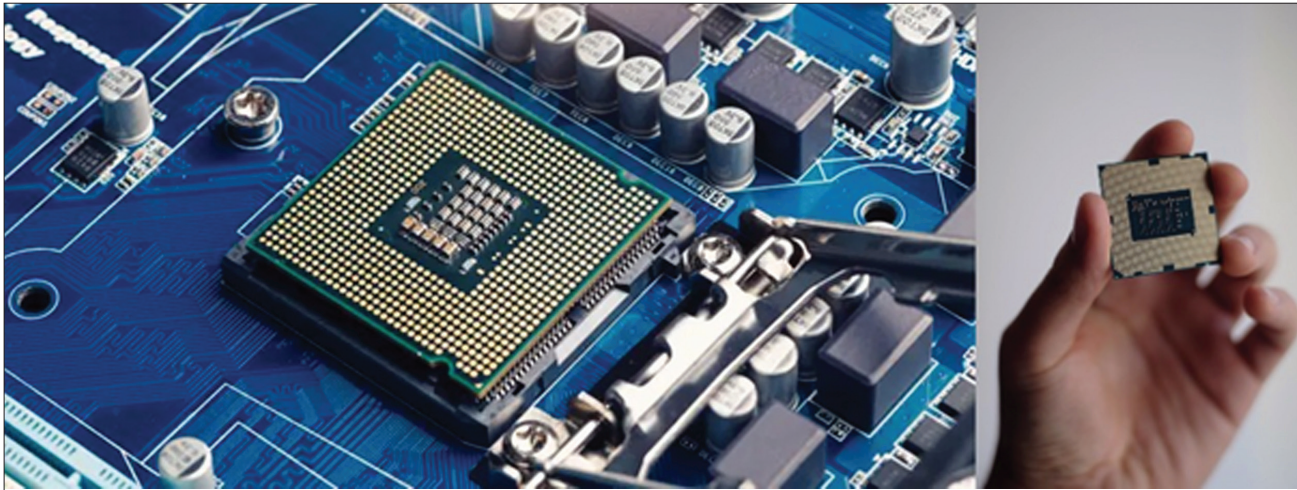
Some of the components that make up a computer are represented in the following diagram.



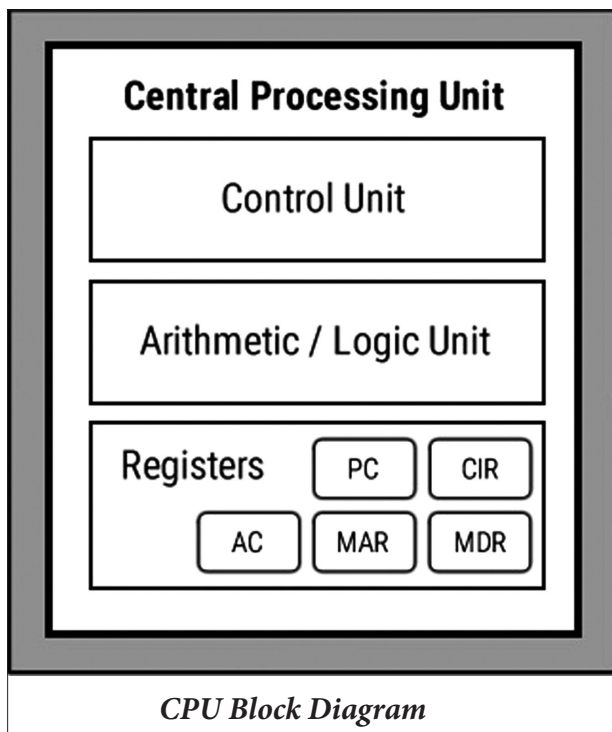
Central Processing Unit (CPU)

A CPU is the primary component of a computer that executes instructions of a computer program. It is also known as the “brain” of the computer. It performs basic arithmetic, logic, controlling, and input/output (I/O) operations specified by the software. It consists of a control unit, arithmetic logic unit (ALU), registers, cache memory, and buses.

The CPU fetches instructions from memory, decodes it, and executes it. It communicates with other components of the computer through buses. The speed and performance of a computer depend on the CPU’s clock speed, number of cores, cache memory, and architecture.



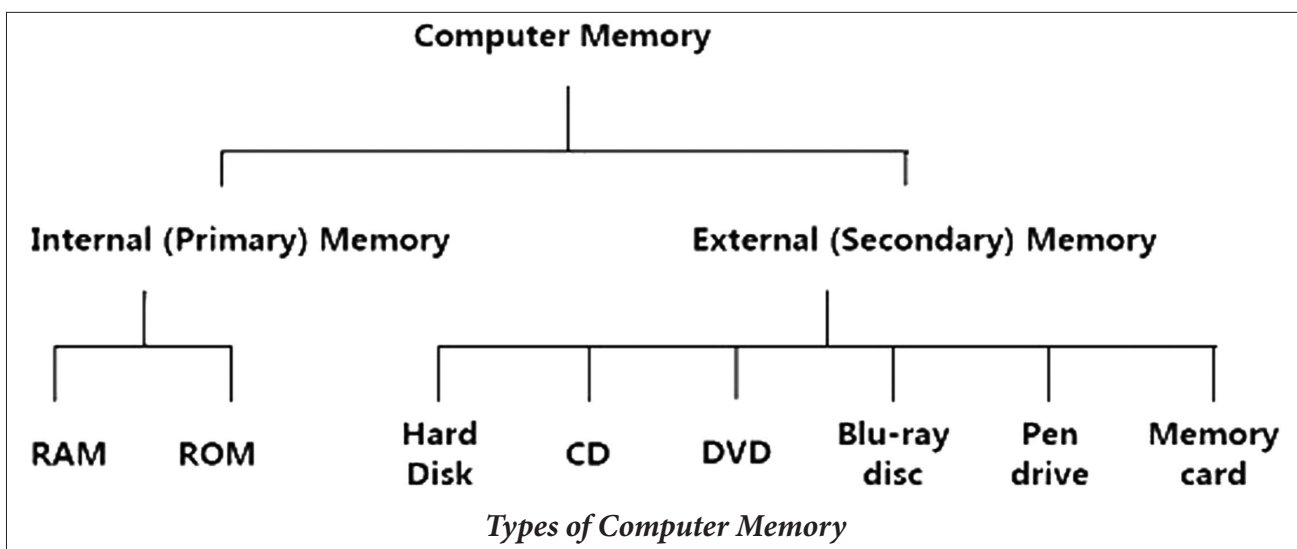
Physical CPU



CPU Block Diagram

Memory Unit

Memory is the storage space in a computer where data and instructions are temporarily stored. This space is also known as the RAM (Random Access Memory). The computer accesses data in the RAM much faster than it would from a hard disk. A computer stores data in the form of '1's' and '0's'. Computer memory is measured in bytes. A group of 8 bits is called a byte. It can store one character.



Types of Computer Memory





Primary memory is also known as main memory or may also refer to “internal memory.” and primary storage. All those types of computer memories that are directly accessed by the processor using data bus are called primary memory.

Secondary memory is also termed as “external memory” and refers to the various storage media on which a computer can store data and

programs. The Secondary storage media can be fixed or removable. Fixed Storage media is an internal storage medium like hard disk that is fixed inside the computer. Storage medium that are portable and can be taken outside the computer are termed as removable storage media. These are devices that are used for long-term storage of data on a computer. Examples of storage devices include hard drives and flash drives.

The picture shown above lists some of the secondary storage devices such as Hard Disk Drive (HDD), Compact Disk (CD), Solid State Drive (SSD), Digital Versatile Disc (DVD), External HDD, Pen Drive, Magnetic Tapes, Blue Ray Disc, Floppy Disk.

Units of Memory

The storage capacity of data storage devices is measured in Gigabytes or even Terabytes.

Memory Unit	Description
Bit	0 or 1
Byte	1B = 8 bits
Kilo Byte	1KB = 1024 Bytes
Mega Byte	1MB = 1024 KB
Giga Byte	1GB = 1024 MB
Tera Byte	1 TB = 1024 GB
Peta Byte	1 PB = 1024 TB
Hexa Byte	1 EB = 1024 PB
Zetta Byte	1 ZB = 1024 EB
Yotta Byte	1 YB = 1024 ZB
Bronto Byte	1 Bronto Byte = 1024 YB
Geop Byte	1 Geop Byte = 1024 Bronto Bytes

Input Devices

Input devices are hardware devices that allow users to enter data and commands into a computer or other electronic device. Input devices are a key component for interacting with computers and other devices, as they

provide the means for users to control and communicate with these systems. These devices can include keyboards, mice, touchscreens, scanners, microphones, cameras, joysticks, and various sensors that can detect physical motion or other stimuli.



Input Devices

Name	Description	Uses
Keyboard	A very common input device which has a set of buttons.	
Text, numbers and symbols can be entered.	General text entry such as writing letters etc.	
Shortcuts/Commands		
Mouse	A mouse is a pointing device and is common in PCs.	Detects movement and sends this data to the computer
Touchpad	By dragging your finger over the surface, the touch pad detects the speed and direction by the sensors underneath it.	A touchpad is an input device usually found on a laptop computer.
Joystick	Joysticks/Joypads are mainly used for playing games.	Users move the joystick left/right, forward/back and data about the movement are sent to the computer.
Light Pen	Used like a pen over a computer.	Light pens “write” on the screen of a computer.



Name	Description	Uses
Trackball	A trackball is a pointing device, which is a large ball that the user spins.	
They are often used by very young people or someone with a physical disability	Data about which direction the ball is spun is passed to the computer	
Microphone	To capture audio and provide high-quality sound input to computers and other devices.	It captures audio by converting sound waves into an electrical signal, which may be a digital or analog signal.
Scanner	To input the hard copy of documents or images to the computer and converted them to soft-copy images.	The scanned images can further be edited, manipulated and printed by using image editing software
Digital Camera	They provide a means to input visual information into computers and other devices	Digital camera uses digital optical components to register the intensity and color of light, and converts it into pixel data.

Output Devices

Output devices are hardware components that are used to receive data from a computer and display or present it to the user. These

devices allow users to interact with and receive information from the computer system. These devices can display text, images, videos, and other types of information in various formats and resolutions.





Here are some common types of output devices:

Monitor: A monitor, also known as a display or screen, is the most common output device. It visually presents images, videos, and text generated by the computer.

Printer: Printers produce hard copies of documents, images, or other content stored on a computer. There are different types of printers, including inkjet, laser, and dot matrix printers.

Speakers: Speakers produce audio output, allowing users to hear sound from their computer system. They are commonly used for listening to music, watching videos, and playing games.

Projector: A projector is used to display computer-generated content on a larger screen or surface. It is commonly used for presentations, movies, and other visual displays.

Headphones or Earphones: These devices allow users to listen to audio output privately. They are commonly used for music, videos, gaming, and communication.

Plotter: Plotters are specialized output devices used to produce high-quality, large-scale graphics or technical drawings. They are commonly used in engineering, architecture, and design fields.

Hardware and Software

Software and hardware are two essential components of a computer system. Here are their definitions and differences:

Hardware: Hardware refers to the physical components of a computer system. It includes devices such as the central processing unit (CPU), memory (RAM), storage devices (hard drive, solid-state drive), input/output devices (keyboard, mouse, monitor), and other peripheral devices (printer, scanner, speakers). Hardware is tangible and can be seen and touched.

Software: Software refers to the programs, data, and instructions that tell the hardware how to perform specific tasks. It is a collection of digital instructions that are executed by the hardware.

Software can be categorized into two main types:

1. System Software: System software includes the operating system, device drivers, and utility programs. It provides a platform for running application software and manages the computer's resources.

2. Application Software: Application software includes programs designed to perform specific tasks or solve particular problems. Examples include word processors, web browsers, graphic design software, video editing software, and games.

Operating Systems

Operating systems are software programs that manage the computer's hardware and software resources and provide common services for computer programs. They act as an intermediary between the computer hardware and software, allowing applications to run smoothly and efficiently.

Some popular operating systems include:

Windows: Developed by Microsoft, Windows is the most widely used operating system for personal computers. It provides a user-friendly interface and supports a wide range of applications.

macOS: Developed by Apple, macOS is the operating system used on Apple's Macintosh computers. It is known for its sleek design and seamless integration with other Apple devices.

Linux: Linux is an open-source operating system that is highly customizable and widely used for servers and embedded systems. It is known for its stability, security, and flexibility.

iOS: Developed by Apple, iOS is the operating system used on iPhones, iPads, and iPods. It is designed specifically for mobile devices and offers a secure and intuitive user experience.

Android: Developed by Google, Android is the most popular operating system for mobile devices. It is an open-source platform that allows for customization and supports a wide range of apps.

These are just a few examples, and there are many other operating systems available for different types of devices, such as Unix, Chrome OS, and more. The choice of operating system depends on the specific needs and preferences of the user.

Microsoft Windows

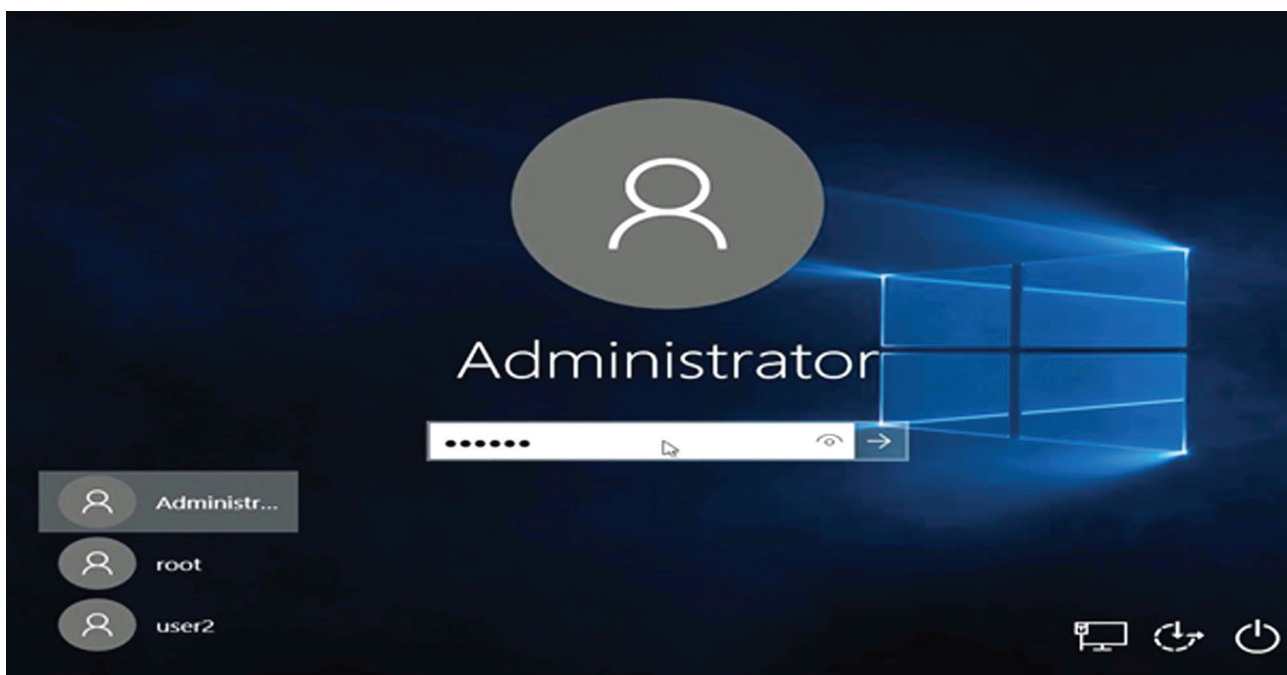
Microsoft created Windows, a graphical operating system. It lets users view and save files, run applications, play games, watch videos, as well as connect to the internet. It was made available for both personal and professional use. Microsoft released the initial version as version

1.0. On November 10, 1983, it was published for both home computers and professional functions of Windows. It was later available on a variety of Windows versions.

Below are mentioned some of the most crucial and notable features of the Windows operating system:

Login Screen

Once the user switch on the system, the login screen will appear. From the Login screen, select Sign-in options and enter the appropriate password to access the computer system.

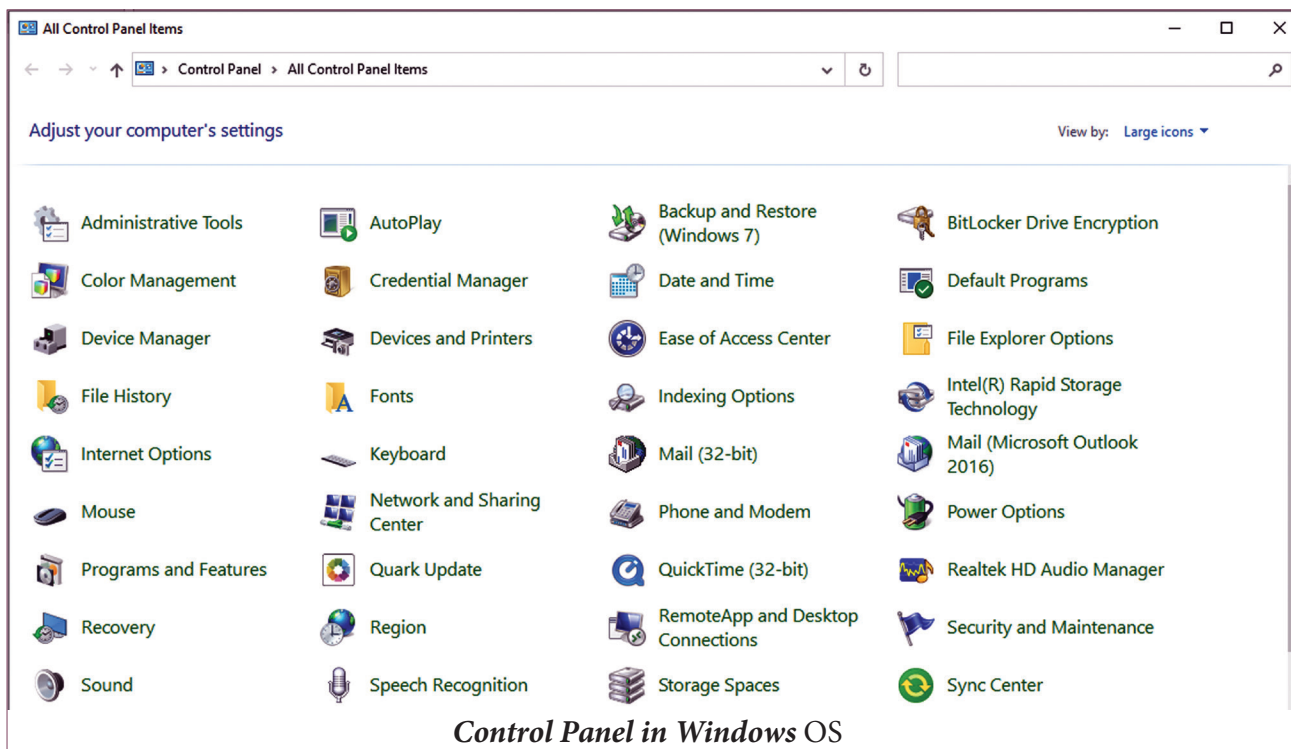


Desktop

The desktop screen is the primary place to display and organize icons on a screen in an operating system or GUI. The desktop screen is the screen that shows when you minimize or close all of your windows. You can access it by right-clicking the Windows icon on the taskbar and picking Desktop, or by clicking the Show Desktop button on the far-right side of the taskbar or by using Windows Key (⊞) + D shortcut.

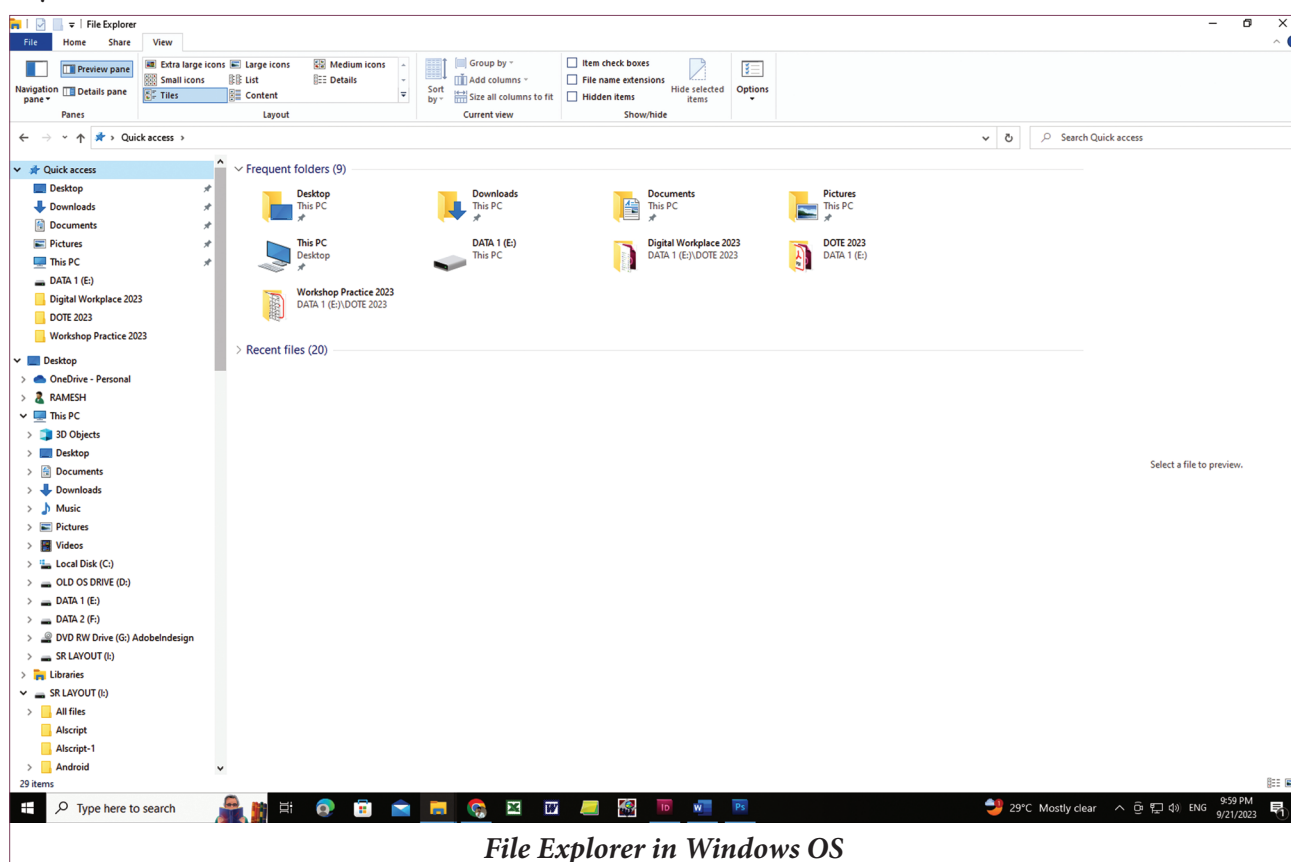
Control Panel

A Control panel is a feature of the Windows operating system that contains many tools that help in configuring and managing the computer's resources. For e.g., the control panel provides the settings for audio, video, mouse, keyboard, network connections, date and time, installed applications, etc. which the user can change as per his/her need.



File Explorer

It is used to display the files and folders which are on the computer. It is also known as Windows Explorer. It gives users the ability to browse data on the hard drive, SSD, and other inserted removable disks. It allows the user to manage the content according to their preference such as a user can delete or rename a file, and search and transfer data. The shortcut to open the file explorer is Windows key + E

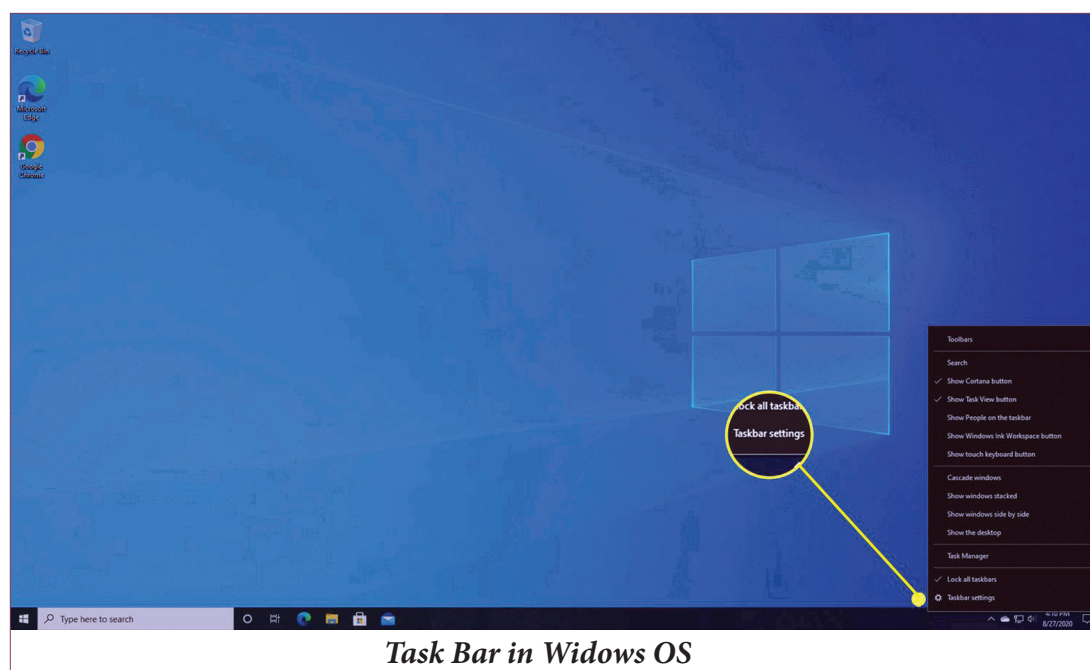


Internet Browser

One of the major use of computers is to access the web/internet. Therefore, an internet browser is very necessary to search for anything, view pages, do online shopping, play games, etc. There is a pre-installed internet browser available in the Windows operating system. From Windows 10 onwards, the Edge internet browser is the default browser, while earlier internet explorer used to be the default browser.

Taskbar

The taskbar in Windows is a horizontal bar typically located at the bottom of the screen. It provides quick access to various features and functions of the operating system. The taskbar remains visible on the desktop and allows users to switch between open applications, launch programs, access system settings, and monitor important information.



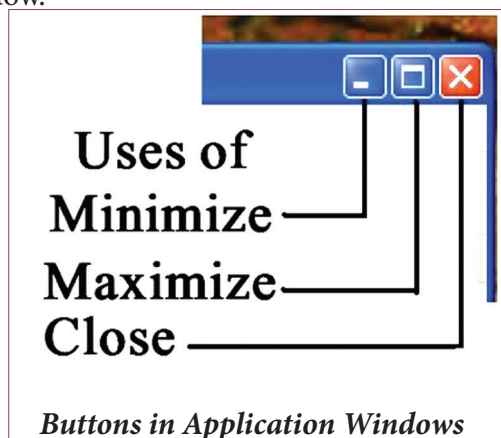
Navigation in Windows Using Keyboard

To navigate in Windows using the keyboard, you can use a combination of keys and shortcuts. Here are some commonly used keyboard shortcuts for navigation:

Keyboard Shortcut Keys	Uses
Windows key	To open the Start menu or switch between the Start menu and the desktop.
Alt + Tab	- To switch between open applications or windows. - Hold down the Alt key and press Tab multiple times to cycle through the open windows.
Windows key + D	- To minimize all open windows and show the desktop. - Press it again to restore the windows.
Windows key + L	To lock your computer and switch to the login screen.
Tab key	- To navigate between different elements on a window or dialog box. - Use the arrow keys to move within the selected element.
Windows key + Arrow keys	Windows key + Left or Right arrow keys to snap the current window to the left or right half of the screen.

Keyboard Shortcut Keys	Uses
	Press the Windows key + Up or Down arrow keys to maximize or minimize the current window.
Ctrl + Esc	To open the Start menu.
Ctrl + E	To open Search (in most apps).
Alt + F4	To close the currently active window or application.
Ctrl + Alt + Del	To open Task Manager of the system
Ctrl + Shift + Esc	To open the Task Manager directly.

The applications in windows will appear in a new window. Every open window features three buttons in the upper-right corner. These are used to minimize, maximize, or close the window.



Minimize - the window will hide in the Taskbar.

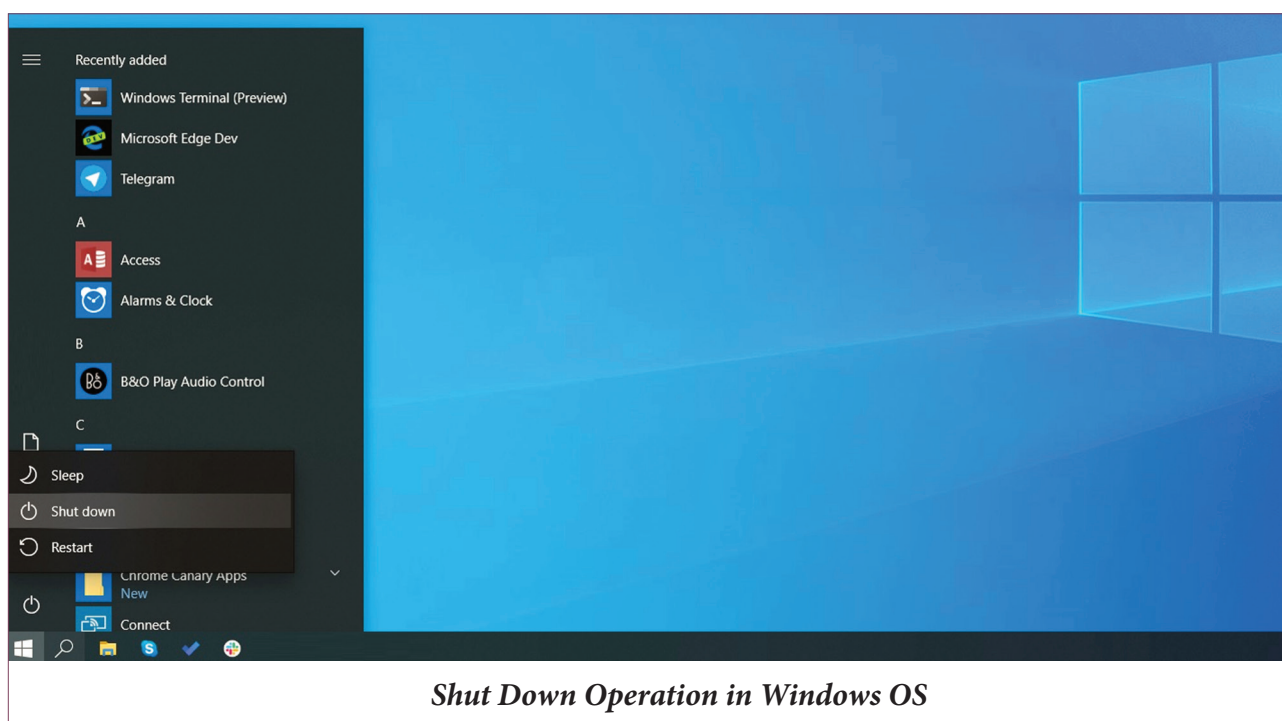
Maximize - the window will be brought to a full-screen size.

Windows can be moved around or resized as you please –

- To move a window, just click on its Title Bar on the upper side of the window and drag it.
- To resize a window, move your mouse to any corner until you see a double-sided arrow. Then click and drag until you reach the desired size.

Shutting Down

- If you are using Windows 10, click the Start button, then the Power icon, then click shut down.





- If you are using Windows 8, click the Start button to access the Start screen, click the Power icon near the upper-right corner, and select shut down.
- If you are using Windows 7 or earlier, click the Start button, then select shut down.

Real World and Industry Applications of Windows Operating System

- Windows can make retail workers more productive by giving them access to cloud-based tools. The productivity tools support employee collaboration, operational efficiencies and customer engagement in the cloud.
- Users at sports and entertainment venues can use Windows for staff collaboration, point-of-sale operations, ticketing services, security coordination, digital signage management and numerous other activities.
- Latest Windows OS frees business users from their desks, allowing them to work productively at meetings, trade conferences, casual brainstorming sessions, client offices, at home and nearly any other location.
- The energy and utility company users can collaborate both in the office and out in the field on a single platform that supports all fixed and mobile devices via a consistent user interface.

Linux Operating System

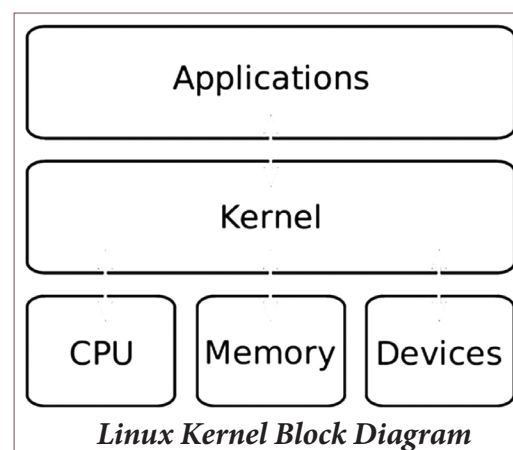
Linux is a popular UNIX-based operating system. It is an open-source operating system whose source code is freely available. Numerous versions of Linux are already available on the internet for use. Since Linux is an open-source operating system, with enough knowledge one can customize it as per their needs rather easily.

Components of the Linux System

The primary components of Linux operating system:

Kernel

The Kernel is the backbone of Linux. It is in control of the operating system's primary functions. It is made up of various modules that interact directly with the hardware. The Kernel provides the needed abstraction for system or application programs to mask low-level hardware specifics.



System Library

System libraries are unique functions or programs that allow application software or system utilities to use the functionality of the Kernel. These libraries implement most of the operating system's features without requiring kernel module code access.

System Utility

System Utility is a special type of program that is specialized to perform system-level tasks.

Bootloader

Booting is the process through which computers startup. Your operating system controls this boot procedure, which depends on what program opens on the boot. When you switch on your computer, the bootloader for your operating system runs first.

Application Software

Most Linux distributions, such as Ubuntu, provide dedicated app stores where users may search for and install applications.



Features of Linux Operating System

Some important features of the Linux operating system are

1. Multiuser Capacity : In Multiuser Capacity, the users can share the system resources such as RAM, hard drive, and application program at same time. But they have to use it in different terminals.

2. Multitasking : Multitasking allows multiple applications to run simultaneously by effectively dividing the CPU time.

3. Security : It secures data in three ways:

Authentication: By using a password and login ID; *Authorization:* By using read, write and execute permissions; *Encryption:* It converts the files into an unreadable format.

4. GUI : The command line Linux operating system can also utilize some GUI features by installing specific packages.

5. File System : It provides a hierarchical system to arrange files and directories. The folders are classified into binary directories, configuration directories, data directories, and memory directories based on the type of files they contain.

6. Application Support : It consists of a software repository for users to download and install several applications, which gives the user a vast field of applications to download the application of their choice.

7. Open Source : This Linux code is freely available to all, and it's a community-based development project which helps the user to modify the code or analyze the codes and redistribution of codes.

8. Shell : The Shell command-line interpreter on Linux acts as a line between the user and the kernel, which runs the program known as commands. It is efficient and takes less time and space while executing the tasks.

9. Portability : Here the term portability doesn't mean the smaller size. Here, it means that Linux supports different kinds of hardware, which means that the software can perform similarly on different types of hardware.

Benefits of Linux

Linux is much different from other operating systems in several ways.

- It is an Open Source Operating System that allows programmers to create their own bespoke operating systems.
- It provides various applications with various characteristics from which to pick based on your requirements.
- A worldwide development community is looking at numerous methods to improve its security, which is very safe and resilient. You don't need to scan it routinely with an anti-virus program. Linux is used by companies such as Google, Amazon, and Facebook to defend their servers since it is very trustworthy and stable.
- Above all, Linux is completely free, and you may install it on as many computers as you wish.
- An entirely trouble-free operating system does not cause viruses, spyware, or computer slowdown.
- Real World and Industry Applications of Linux Operating System.
- The biggest real-world use of Linux is on servers, especially web servers.
- Linux is so popular on supercomputers that 100 percent of the current supercomputer installations run some version of Linux.
- While Linux powers supercomputers, it's also perfect for simpler machines. The best-known Linux-powered single-board computer is the Raspberry Pi.

- Linux and open source are powering the revival of older games.

Practical Experiment

Experiment #1

- Basic Navigations in Operating Systems - Windows, Ubuntu
- Basic Internet - Understanding browsers (Internet Explorer/Edge, chrome)
- Efficient use of search engines (Google, Bing)

This experiment will help the students to understand the fundamentals about how to work with the desktop, open and close windows, and turn off the computer. The students will be able to use the web browsers and search engines.

Step 1: Power on the computer by pressing the power button.

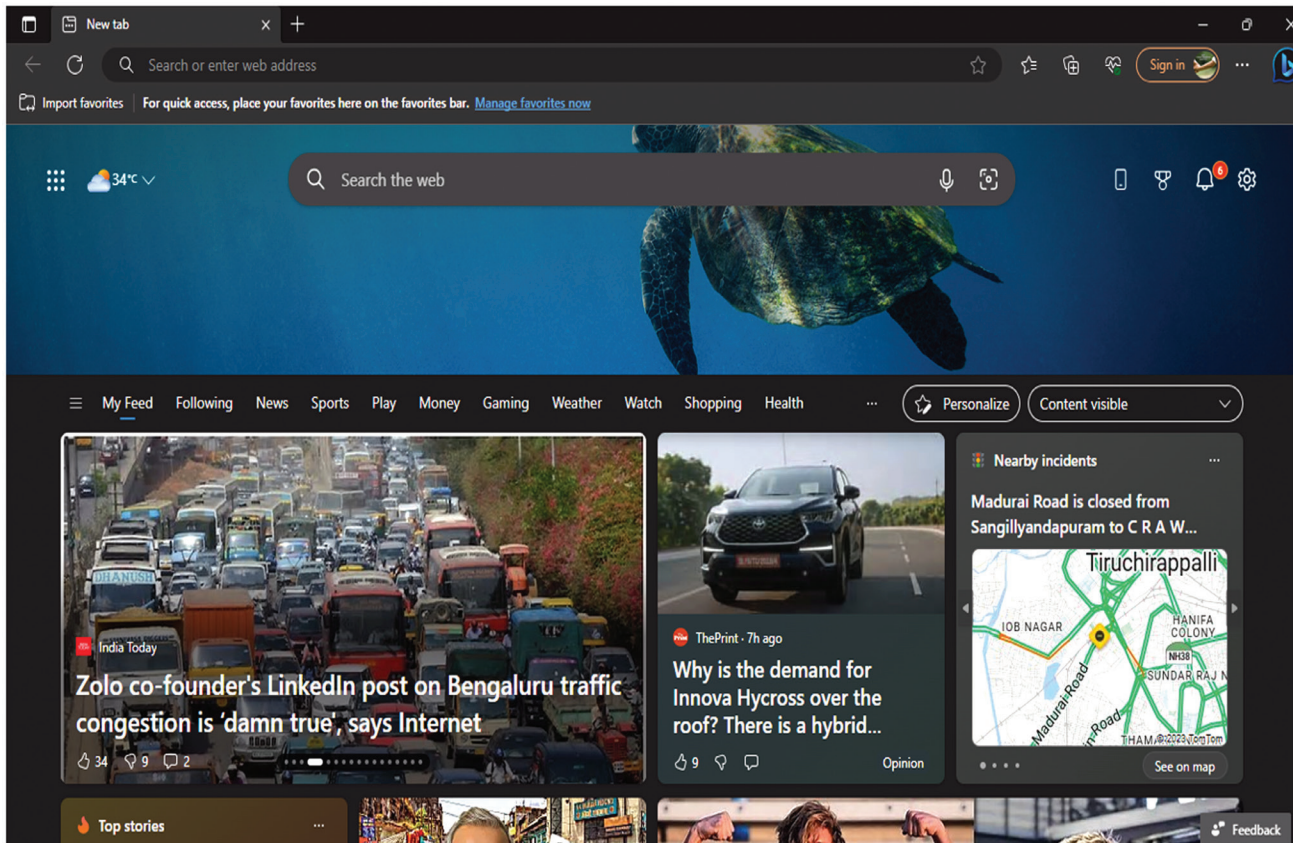
Step 2: Once the computer has finished starting up, the desktop will be shown first. Desktop is the main workspace for the windows computer. From desktop, we can view and manage files, open applications, access the Internet, etc.

Step 3: Using the mouse, click the Start button, then select the desired application or click All Programs to see a complete list of applications (An application—also known as a program—is a type of software that allows the user to complete tasks on the computer).

Note: There is no Start menu in Windows 8, so the applications will be opened from the Start screen. Click the Start button to go to the Start screen, then click an app to open it.

Step 4: Open the application by clicking the left button of the mouse. In our example, we'll open Microsoft Edge. The application will appear in a new window.





Step 5: Efficient use of Search Engines

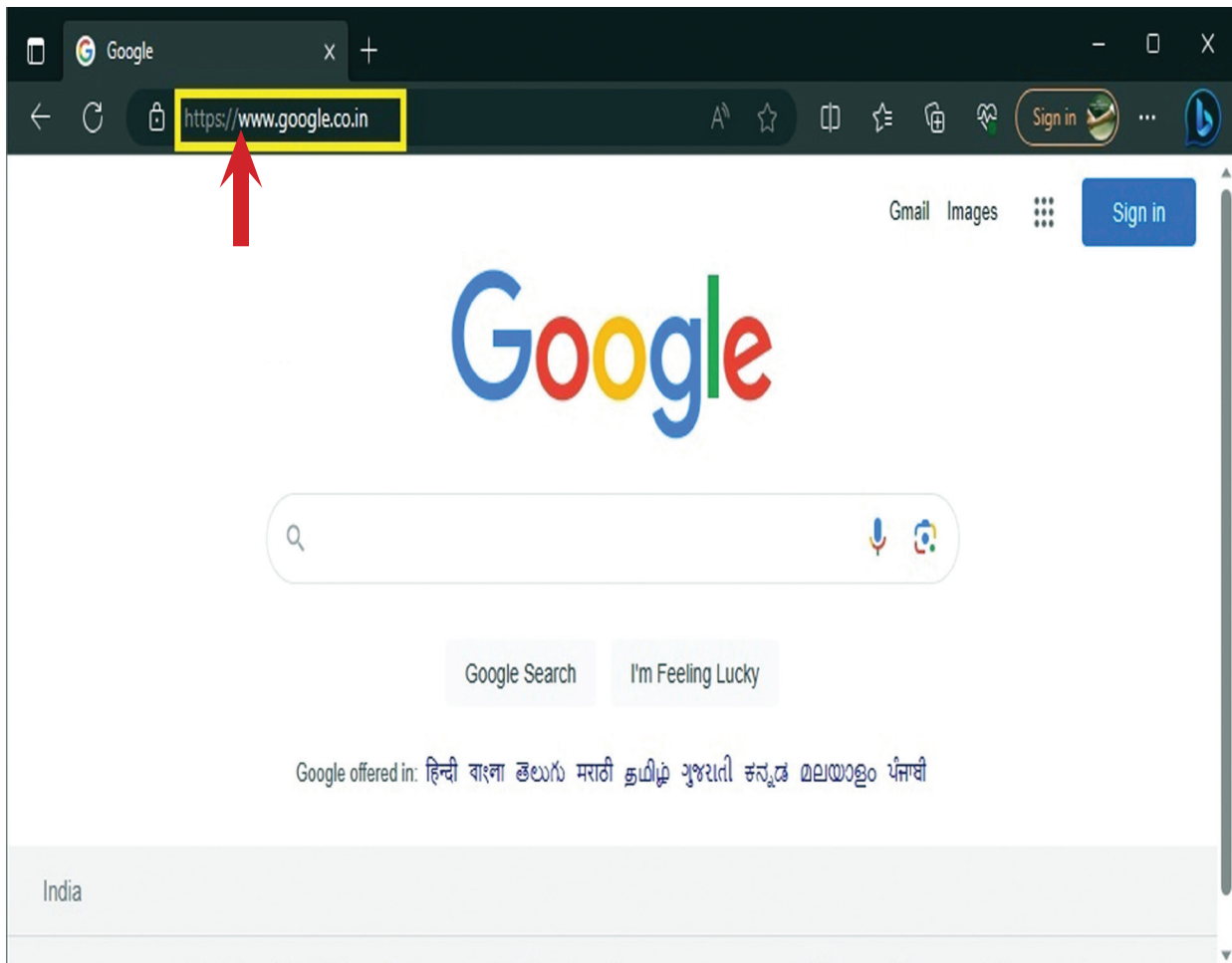
Search Engines

Search engines are online tools that allow users to search for information on the internet. They index web pages and other online content to provide relevant search results based on user queries. Search engines play a crucial role in helping users find information, websites, images, videos, news, and more.

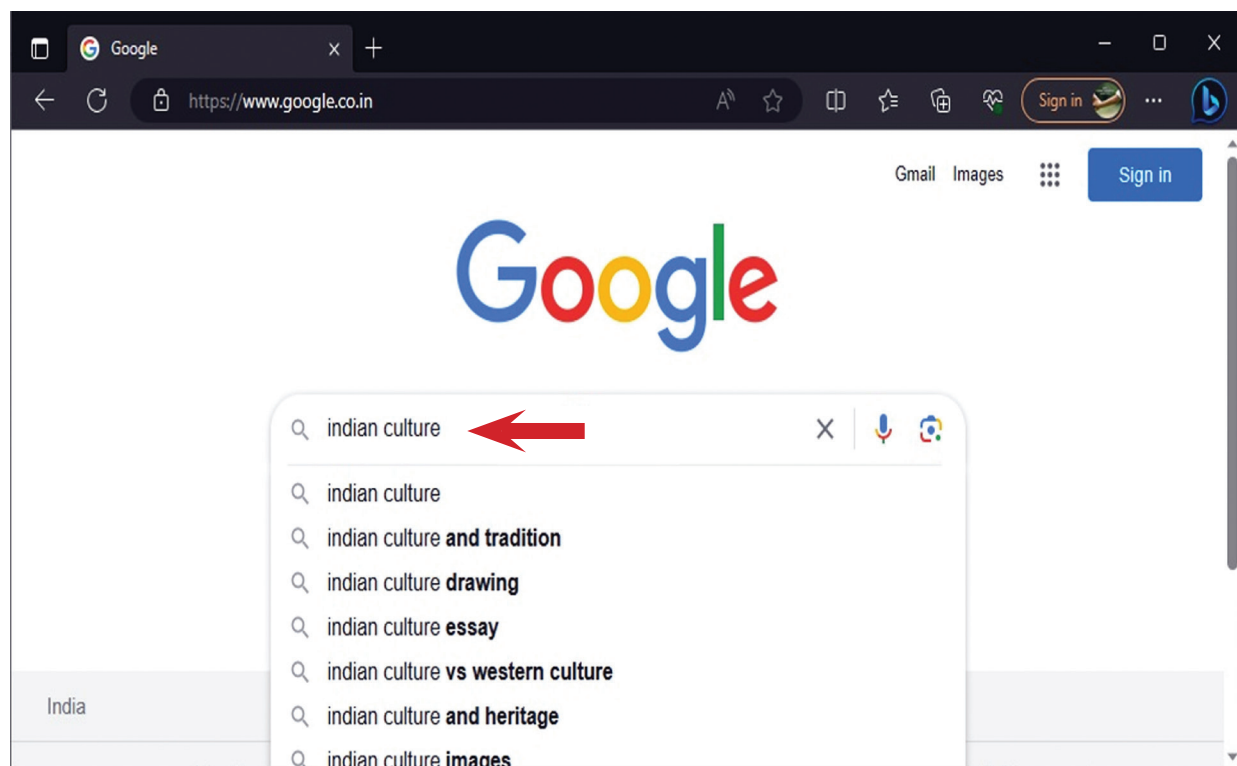
Here are some well-known search engines:

1. **Google:** Google is the most popular and widely used search engine globally. It provides comprehensive search results and offers various additional services like Google Images, Google Maps, Google News, and more.
2. **Bing:** Bing is Microsoft's search engine and is the second-largest search engine in terms of market share. It provides web search, image search, video search, and news search, among other features.
3. **Yahoo:** Yahoo Search is another popular search engine that provides web search results, news, and other services. Yahoo search results are powered by Bing.

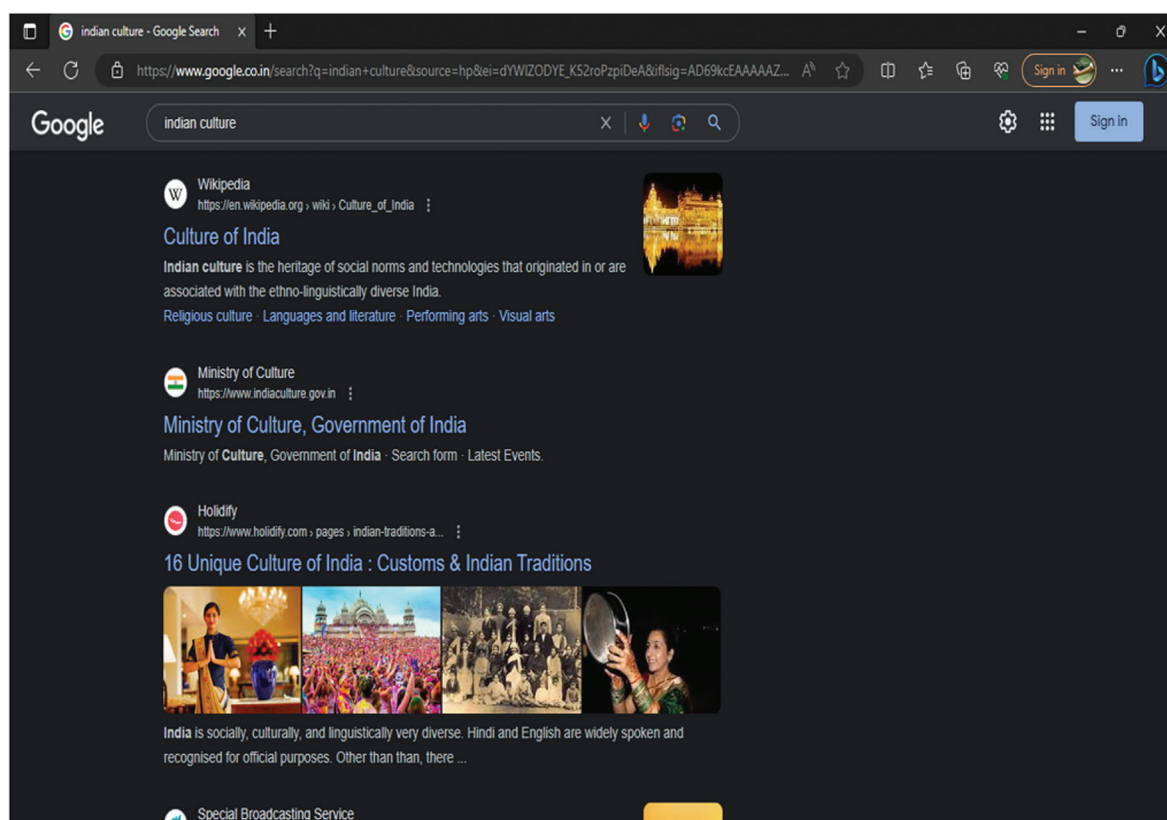
- i. Open the Google page by entering www.google.co.in in the address bar.



- ii. Type the search word or sentence in the search box and press enter or click “Google Search”.
An example is given below.



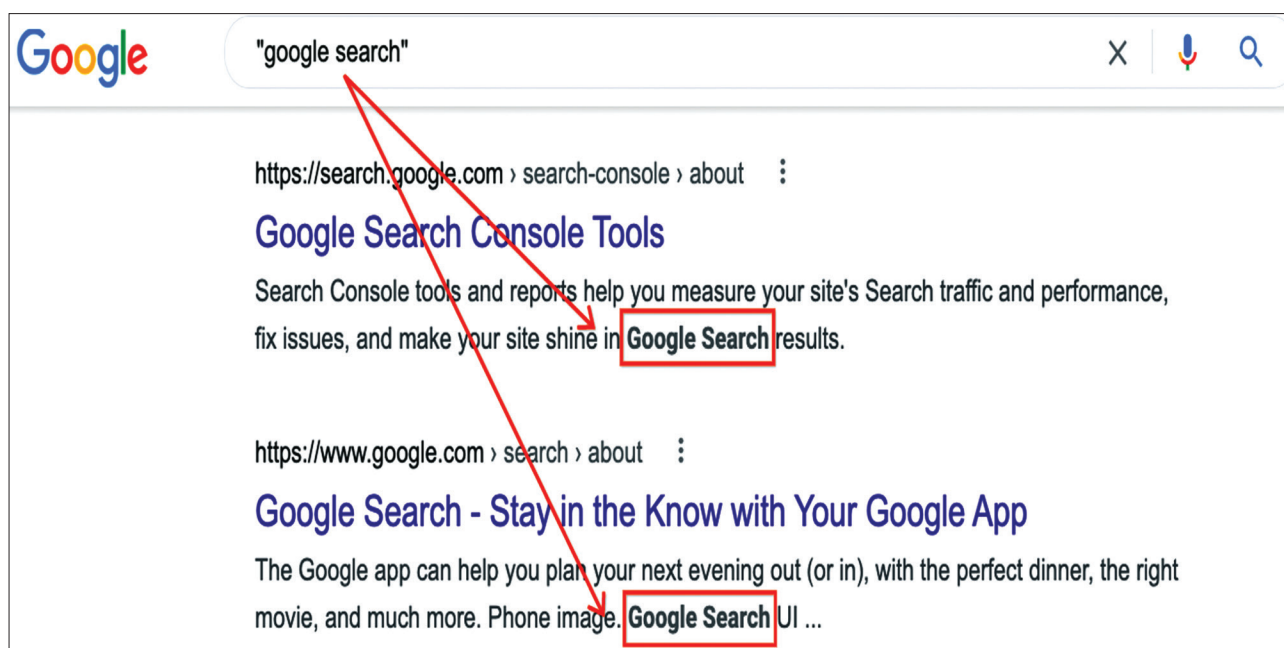
iii. The search results will appear as shown below



Efficient Searching in Google

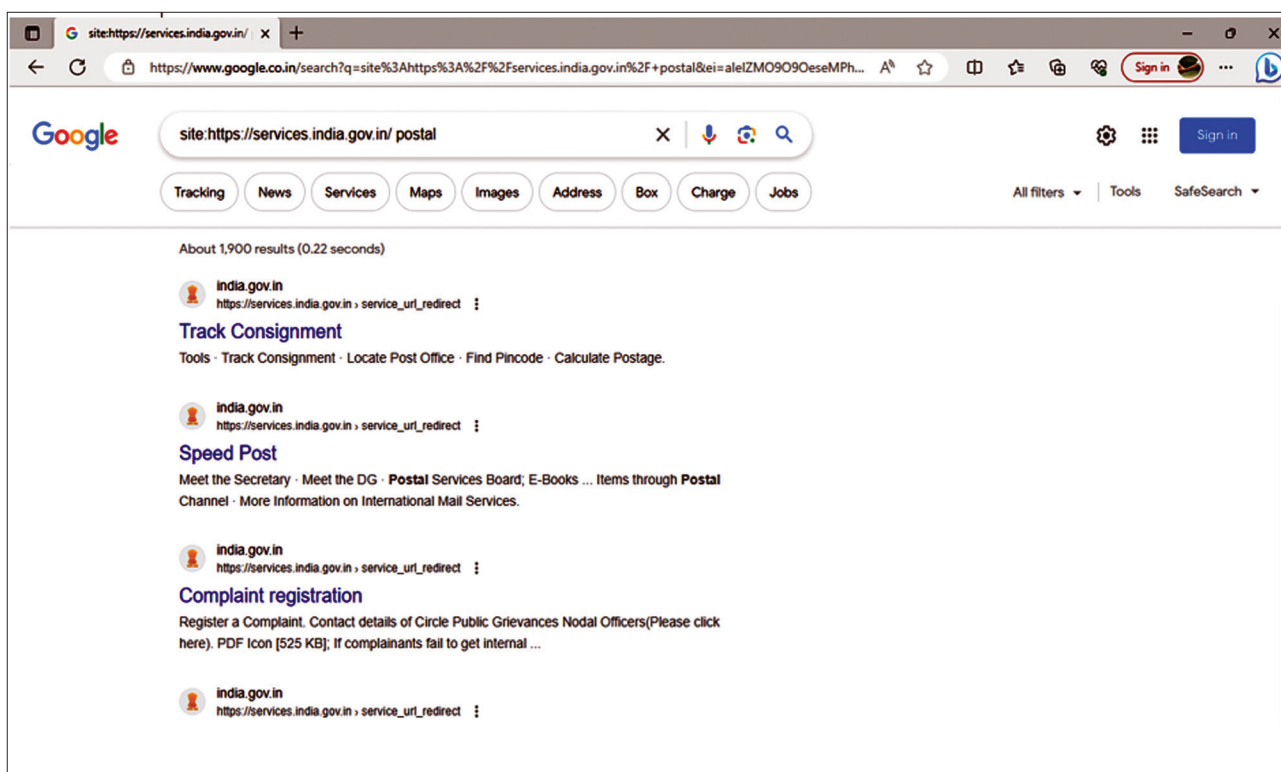
1. Use quotes to get an exact match

A regular search on Google makes a shallow search. This may result in pages that may or may not contain all the words you mentioned in your search query. But if you wrap your search query in quotes then Google will do a deep search.



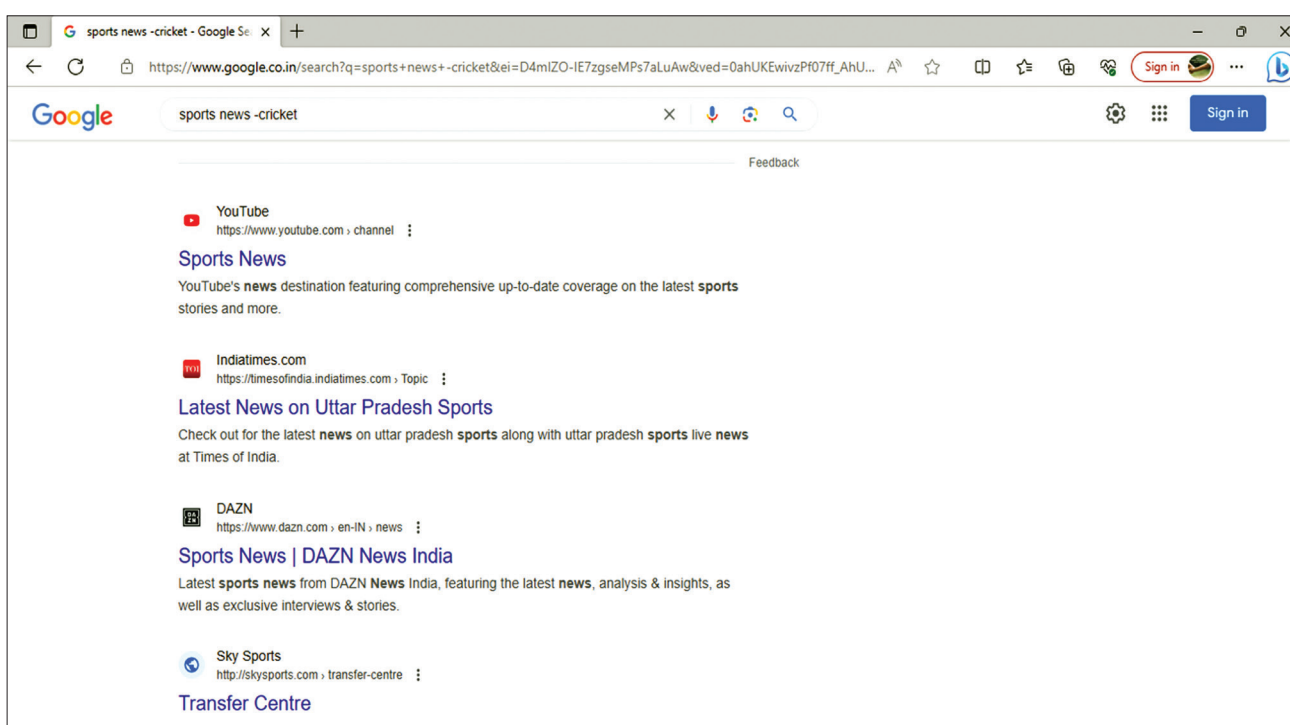
2. Search within a specific site with site:

If you want Google to return results from within a particular website, just add site: before the question you are searching.



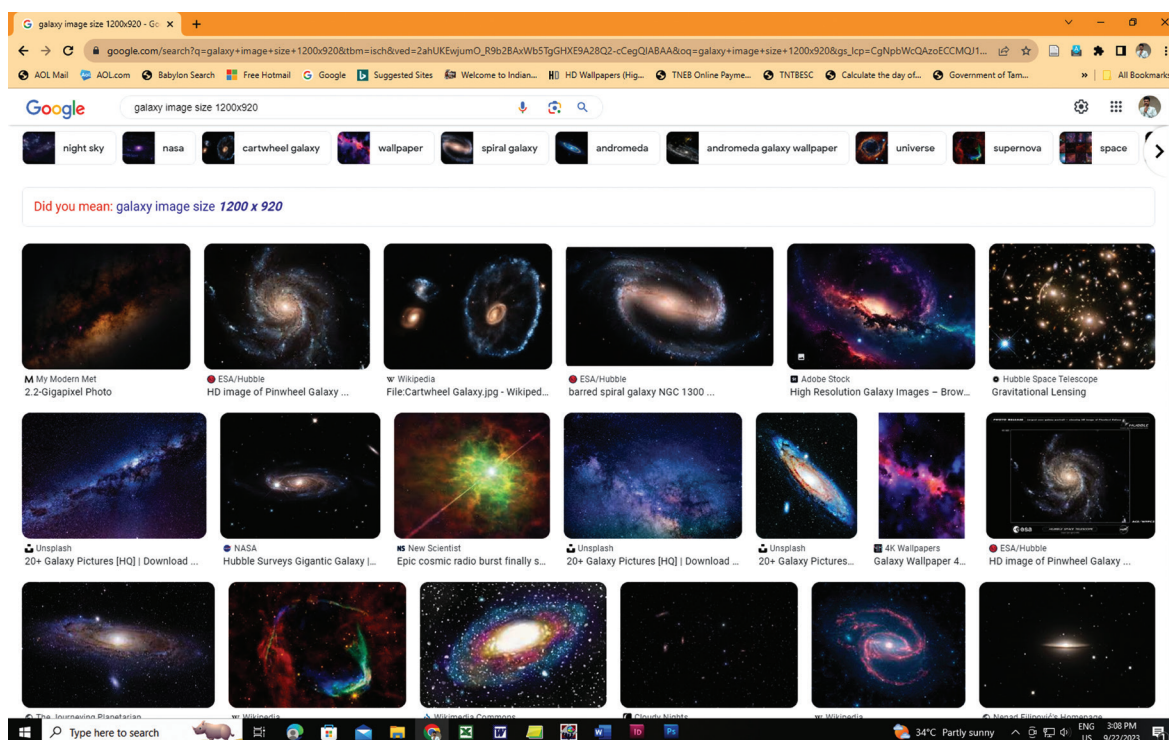
3. Exclude a term from search results with –

If you don't want a term or phrase to appear in your search results, then just add - in front of that word.



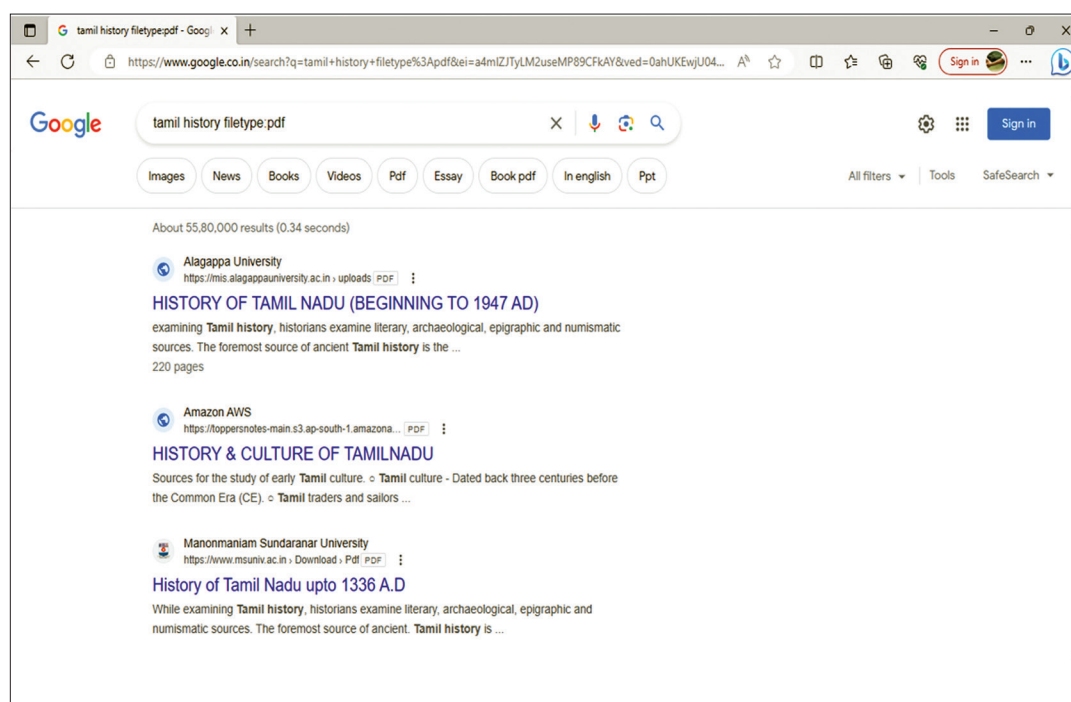
4. Search images of a particular size with imagesize:

If you want to search images of a particular size, then use the tag `imagesize:` in your search query along with the width and height in pixels.



5. Search for a particular filetype with file type:

If you want to get search results that contain a particular file type such as PDF or PPT, then add `filetype:<extension>` (without the angular brackets).





UNIT II

BASIC PRODUCTIVITY TOOLS

Exploring office tools- word document creation- basic editing, formatting, Tables, Page Break, Equations, Hyperlinks, and Pictures.

EXPLORING OFFICE TOOLS:

Definition of Office Tools:

Office Tools are **application software** that helps the users to perform office-related tasks easily and efficiently. They are used to create presentations, reports, documents, databases, etc. Hence, users can perform such tasks with less time and effort.

Types of Office Tools and their Examples

1. Word Processor Tool
2. Presentation Tool
3. Spreadsheet Tool
4. Database Management Systems.
5. Email

1. Word Processor Tool:

This software manages the text documents activities. It helps to create, edit and save the text files. The software can either run on the hardware as a desktop application such as Microsoft word (offline). Or on the other hand, it can also be cloud-based such as Google docs which can be accessed anywhere, anytime, from any place (online).

Certain examples of word processors are as follows:

- MS-Word
- WordPad

- WordPerfect
- LibreOffice Writer
- Google Docs

2. Spreadsheet Package

Spreadsheet Package is a software that allows users to store, process and modify data in a tabular form easily. It includes accounting functions and formulas to manage tabular data.

Examples of some spreadsheet software are:

- MS-Excel
- LibreOffice Calc
- Google Sheets

3. Presentation Tool

A **Presentation Tool** is one of the office tools which is used to display the data in the form of slides. We can format and edit the text in the slides, insert media like graphs, tables, charts, images, audio, video in the slides, and also we can present the content in the form of a **slide-show**.

Examples of some presentation tool are:

- MS-PowerPoint
- Lotus Freelance
- Google Slides
- LibreOffice Impress

4. Database Management System

Database Management System is a software that manages data by storing them in **tables** to form a database. A **database** is an organised collection of data accessed on a machine. User can store, read, update and can delete data based on his/her needs.

Examples of some Database Management System are:

- MySQL
- PostgreSQL
- Oracle Database
- Microsoft Access.

What is MS Word?

MS Word is a proprietary word processor developed by Microsoft. It has to be installed on the system or it has to be configured while buying the system. It has many features which allow you to format and edit your files, documents, letters, reports, etc.

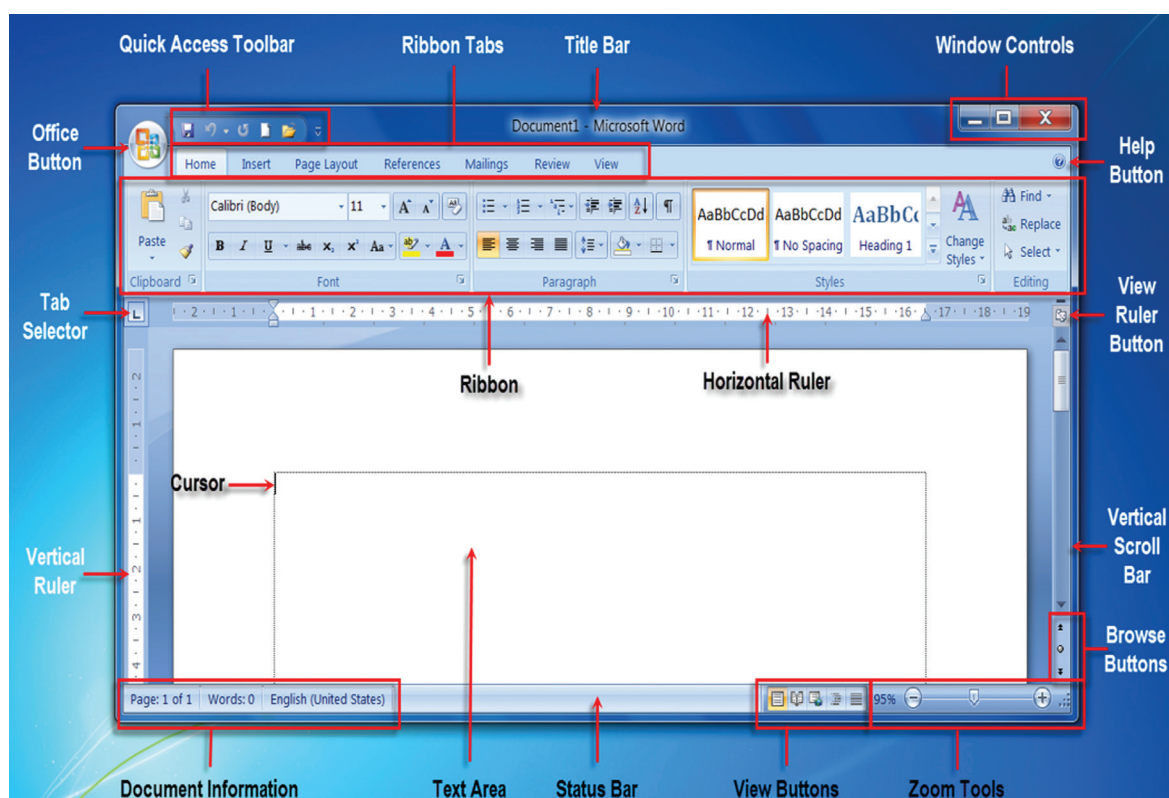
Where to find MS Word on your windows?

Start → Microsoft Office → MS Word.

Components of MS- Word:

Office Button:

- **New:** This option allows us to create a new, blank file in MS Word.
- **Open:** This option allows us to open an existing file from the local storage on our computer.
- **Save:** This option allows us to permanently save a file to our computer after finishing the work. Additionally, we can save the changes to the current file using this command.
- **Save As:** This option allows us to save a copy of the active file with the desired file name and file extension to a desired location on the computer storage.
- **Print:** This option allows us to take a hard copy of the desired document on paper through a printer. Alternately, the



print option can help us save a copy of the active document to a PDF format.

- **Prepare:** This option allows us to prepare the active file for distribution. In particular, the prepare option helps us view and modify the document properties accordingly. Furthermore, we can also inspect the hidden metadata of a specific file using this option.
- **Send:** This option enables us to send or share the desired files directly through e-mail, upload them to A Drive, or post to a specific blog.
- **Publish:** This option enables us to distribute the desired document to people. We can even create a specific blog article with the content inside the file.
- **Close:** This option helps us to close an active document in a corresponding Office program.

Quick Access Toolbar:

Quick Access Toolbar lies next to the Microsoft Office Button. It is a quickly accessible, customizable toolbar that comes with a set of commands such as Save, Undo, Redo, etc.

Title Bar:

It lies next to the Quick Access Toolbar. It displays the title of the currently open document.

Ribbon:

The Ribbon is a user interface element which was introduced by Microsoft in Microsoft Office 2007. It is located below the Title Bar.

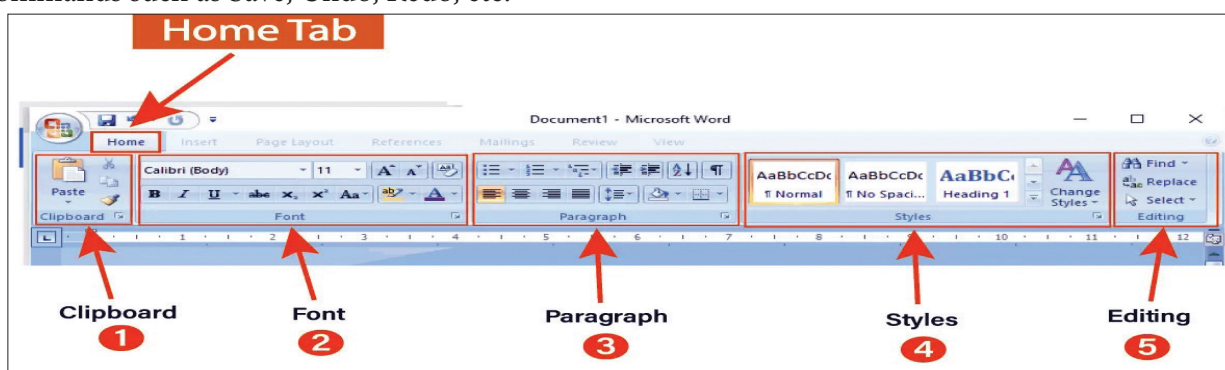
It comprises seven tabs;

1. Home
2. Insert
3. Page layout
4. References
5. Mailing
6. Review
7. View

Each tab has specific groups of related commands. It gives you quick access to the commonly used commands that you need to complete a task.

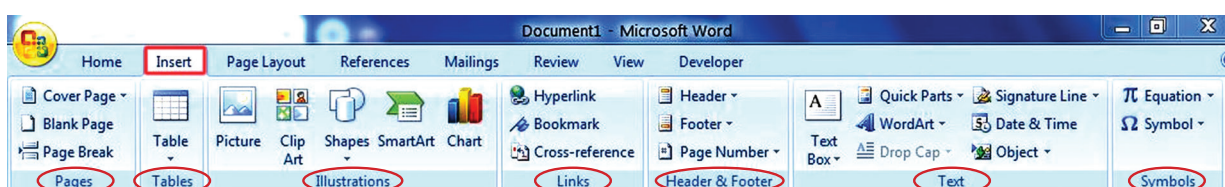
Home

This menu has many text formatting options like bold, italic, underline, strike through, font colour, font size, font style, alignment, bullets, line spacing, etc.



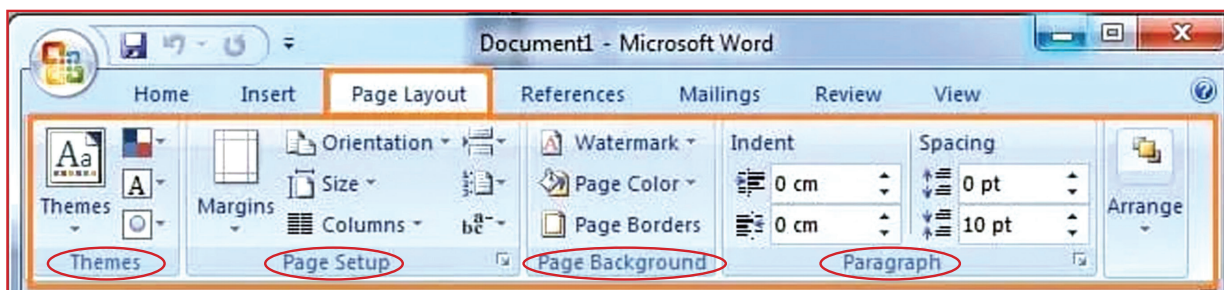
Insert

Insert tab is used to insert additional contents like pages, tables, hyperlinks, page numbers, equations, pictures, equations to an existing document.



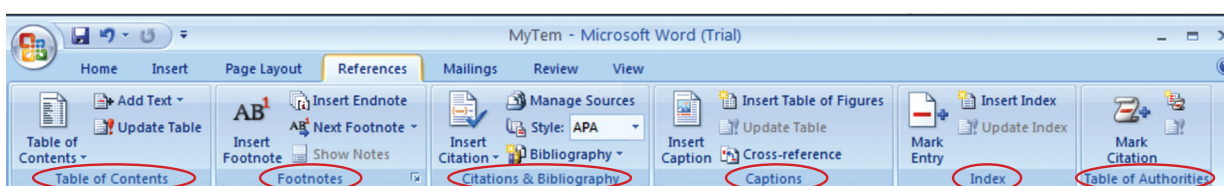
Page Layout

Under the Page Layout tab comes options like margins, orientation, columns, lines, indentation, spacing, etc.



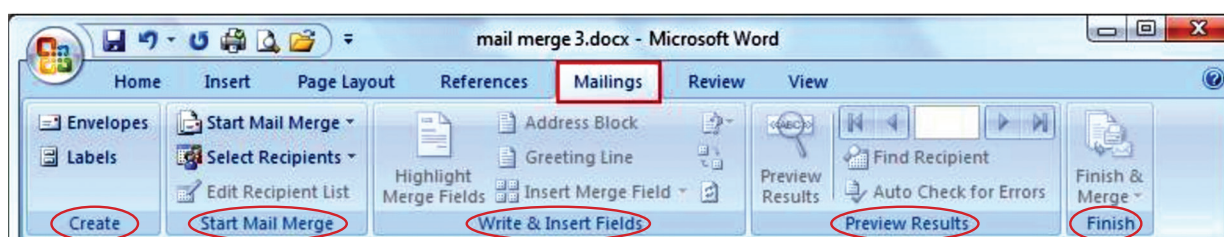
References

This tab is the most useful for those who are creating a thesis or writing books or lengthy documents. Options like citation, footnote, table of contents, caption, bibliography, etc. can be found under this tab.



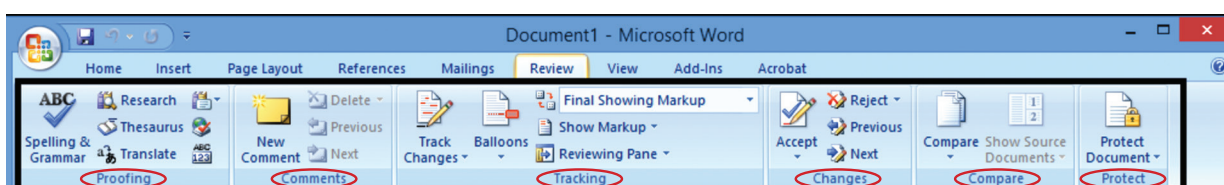
Mailings tab

It is the least-often used tab of all the tabs available in the Ribbon. It allows you merge emails, writing and inserting different fields, preview results.



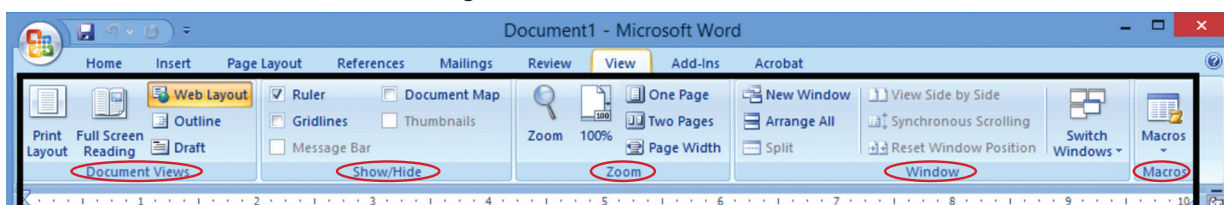
Review

Spell check, grammar, Thesaurus, word count, language, translation can all be tracked under the review tab. It helps you proofread your content, to add or remove comments, track changes, etc.



View

The page can be set in different views and layouts, which can be added and optimised using the view tab on the Word document. Margins and scales are also available for the benefit of the users.



Window Controls:

These are a set of three buttons in the top right corner of the program window. The right button, displaying an x, is the Close button which is used to close the current document. The left button is used to minimize the program window to the taskbar. The middle button is the Maximize button, which maximizes the Word 2007 window.

Help:

It is located below the Window Controls in the top right corner of Word window, this button brings up the Word Help window.

Ruler:

The horizontal ruler is used to set tabs and indent text. You may use the vertical ruler to set vertical location of text in the document.

Tab Selector:

Repeated clicking of the Tab Selector shows five tab markers and two indent markers. By choosing the desired tab or indent marker and clicking on the horizontal ruler, you can set tabs or indent text.

Status Bar:

On the left hand side, the status bar displays document information such as the current page number and total number of pages, word count, language, proofing error notification, etc.

View Buttons:

These buttons allow you to use five different document views:

- Print Layout View
- Full Screen Reading View
- Web Layout View
- Outline View
- Draft View

Zoom Tools:

The Zoom slider lets you zoom out or zoom in the current document. The zoom range is from 10% to 500%.

Vertical & Horizontal Scroll Bars:

The vertical scroll bar is located at the extreme right of the Word 2007 window while the horizontal scroll bar is at the bottom of the window just above the status bar.

Text Area:

Framed between the rulers and the scroll bars is a large area looking like a blank sheet of paper. This is the text area where you type the text of the document.

Ex. No. 2 REPORT PREPARATION

Create a document with basic editing, formatting options, Tables, Equations, Hyperlinks, Pictures.

Aim:

To create a document with basic editing, formatting options, Tables, Equations, Hyperlinks, Pictures using Microsoft word 2007.

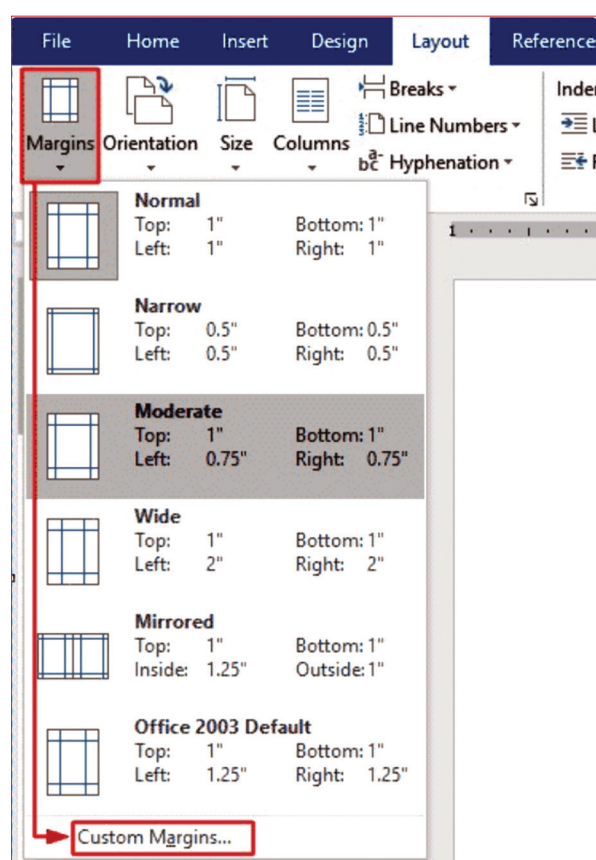
Procedure:

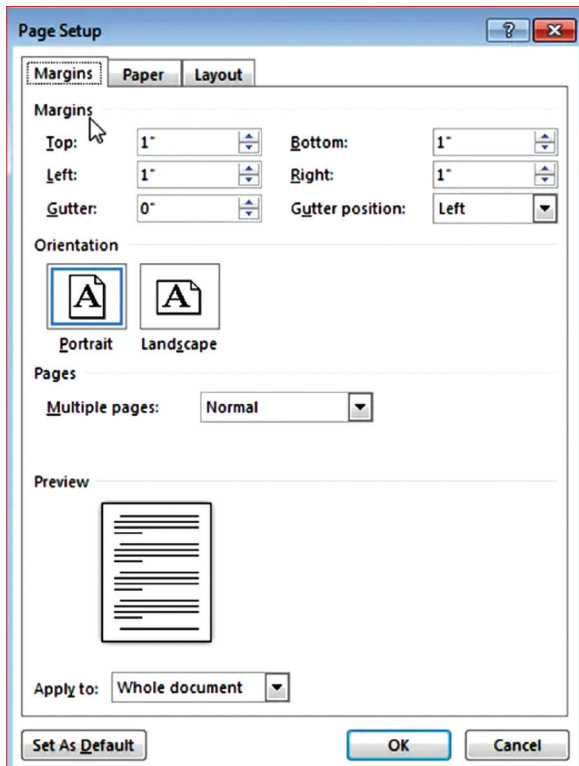
Step 1: Click on File → New → Blank Document. This opens a new blank document.

Step 2: Page Setup

1) Margins:

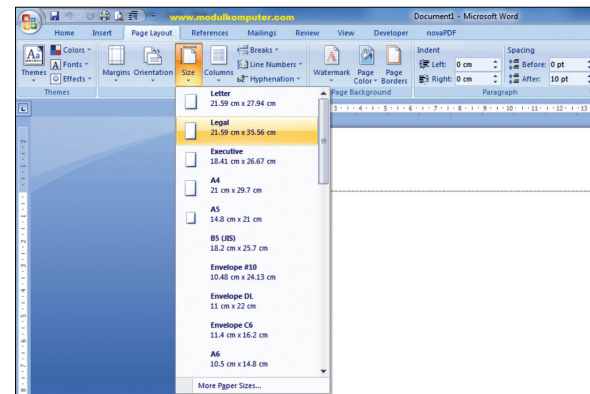
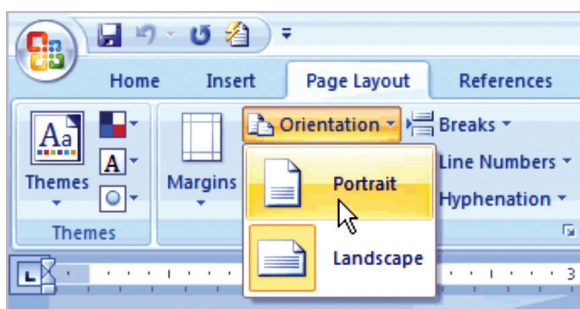
Page Layout → Margin → Custom Margins Set Top → 1.5, Bottom → 1.5 Left → 1.5, Right → 1.5 Click OK.





2) Orientation:

Page Layout → Orientation → Portrait



- **Size:**

Page Layout → Size → A4

- **Columns:**

To divide the page into two sections, Page Layout → Columns → Two

- **Page Borders:**

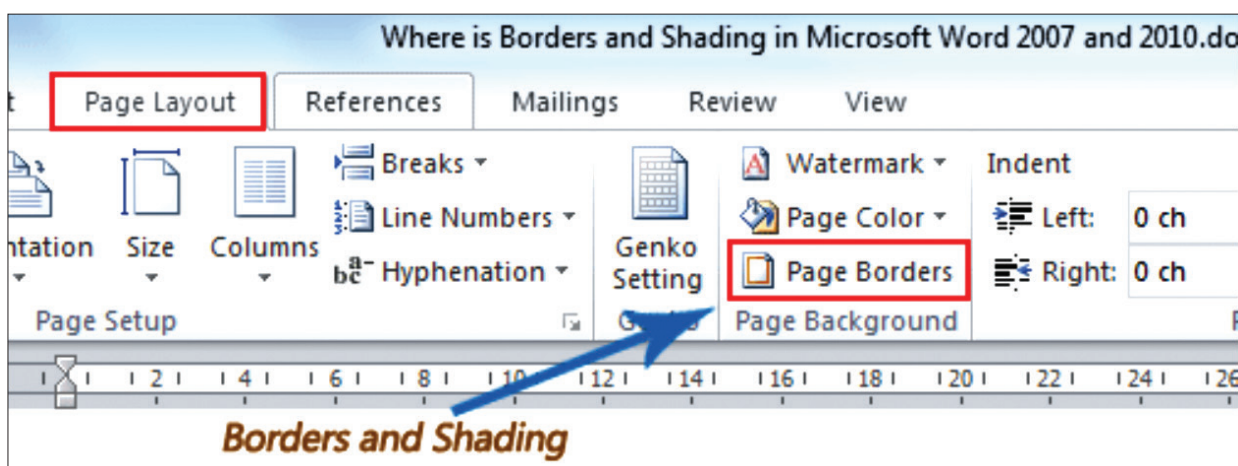
Page Layout → Page Borders → Select the border setting, style, color, width of the border.

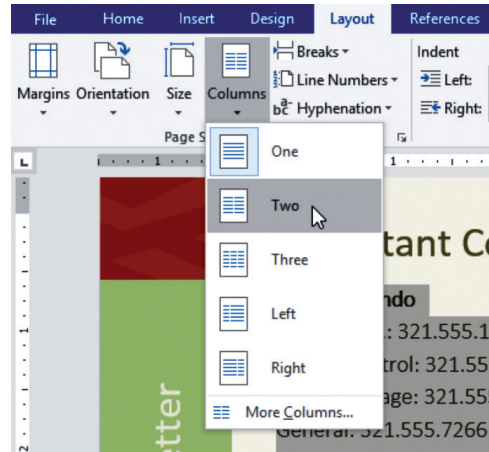
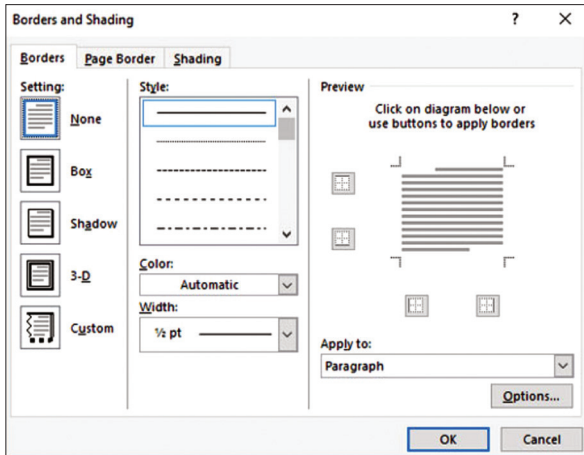
- **Page Color:**

Page Layout → Page Color → Select the color you want as background color.

- **Watermark:**

Page Layout → Watermark → Select Custom Watermark → Select Text Watermark. Type

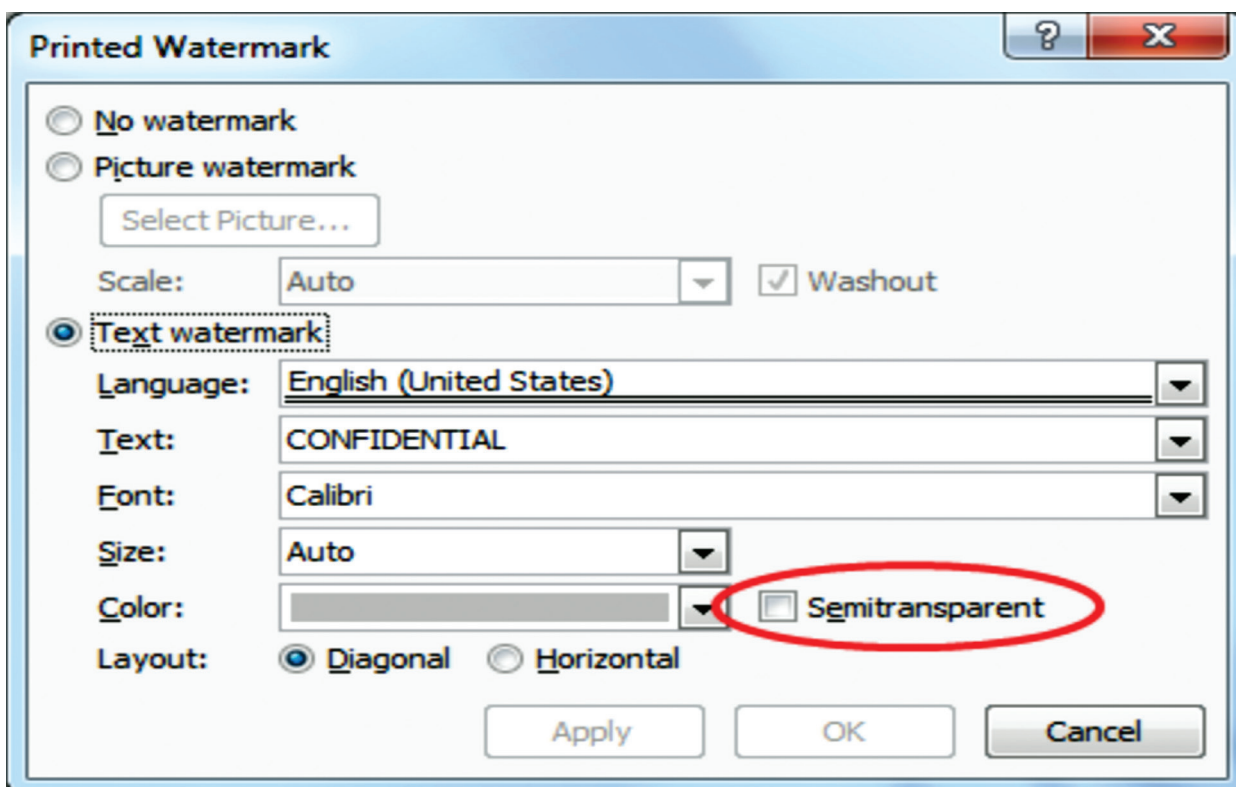
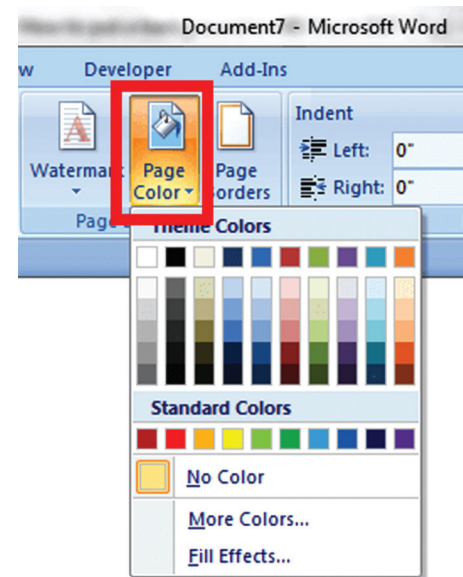




3) Title and Paragraph Formatting

(i) Title:

- Home → Font Group → Font Face → Times New Roman
- Home → Font Group → Font Size → 16
- Home → Font Group → Bold (B)
- Home → Font Group → Underline (U)
- Home → Paragraph Group → Center aligned.



ii) Heading:

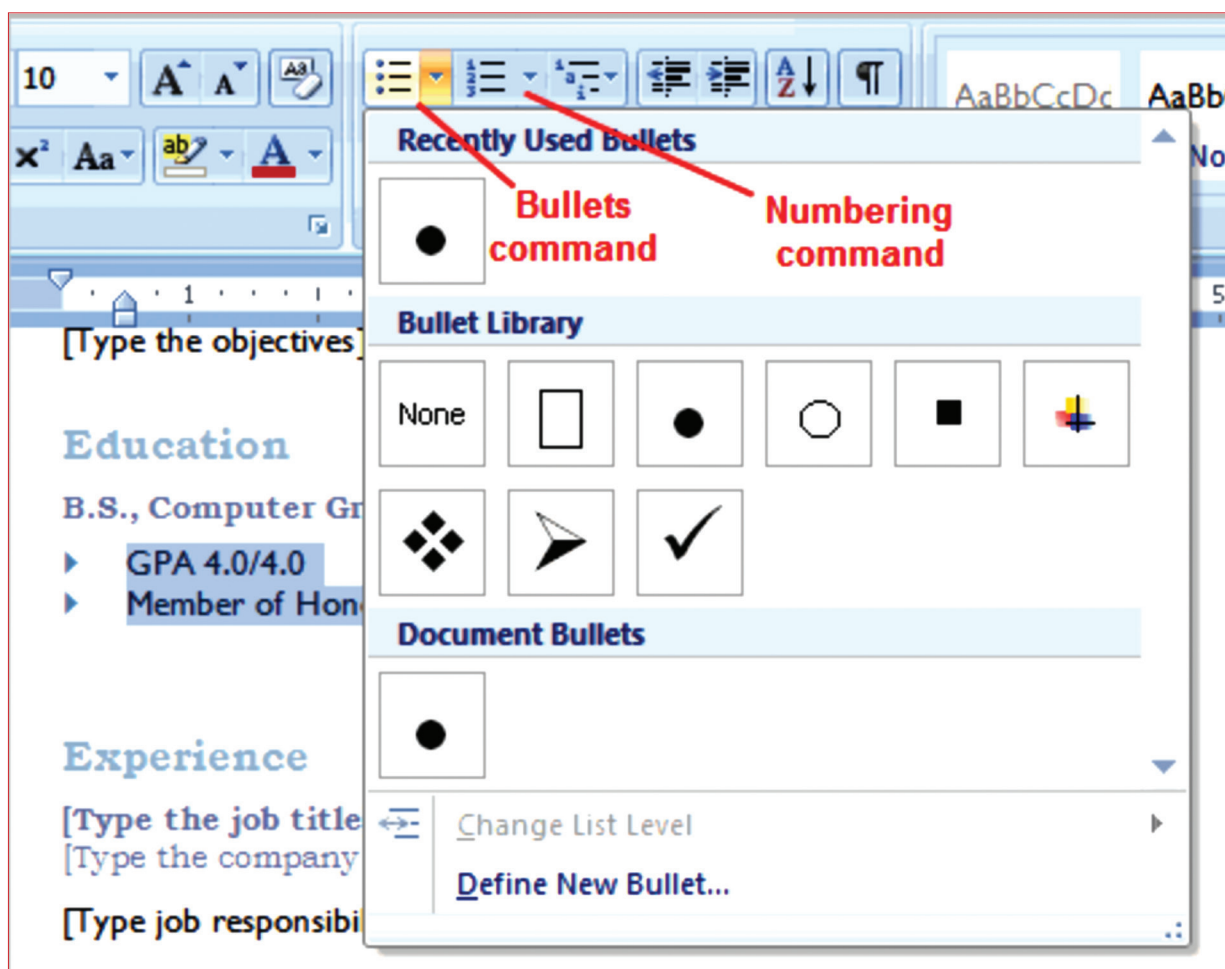
- Home → Font Group → Font Face → Times New Roman
- Home → Font Group → Font Size → 14
- Home → Font Group → Bold (B)
- Home → Font Group → Underline (U)
- Home → Paragraph Group → Left aligned.

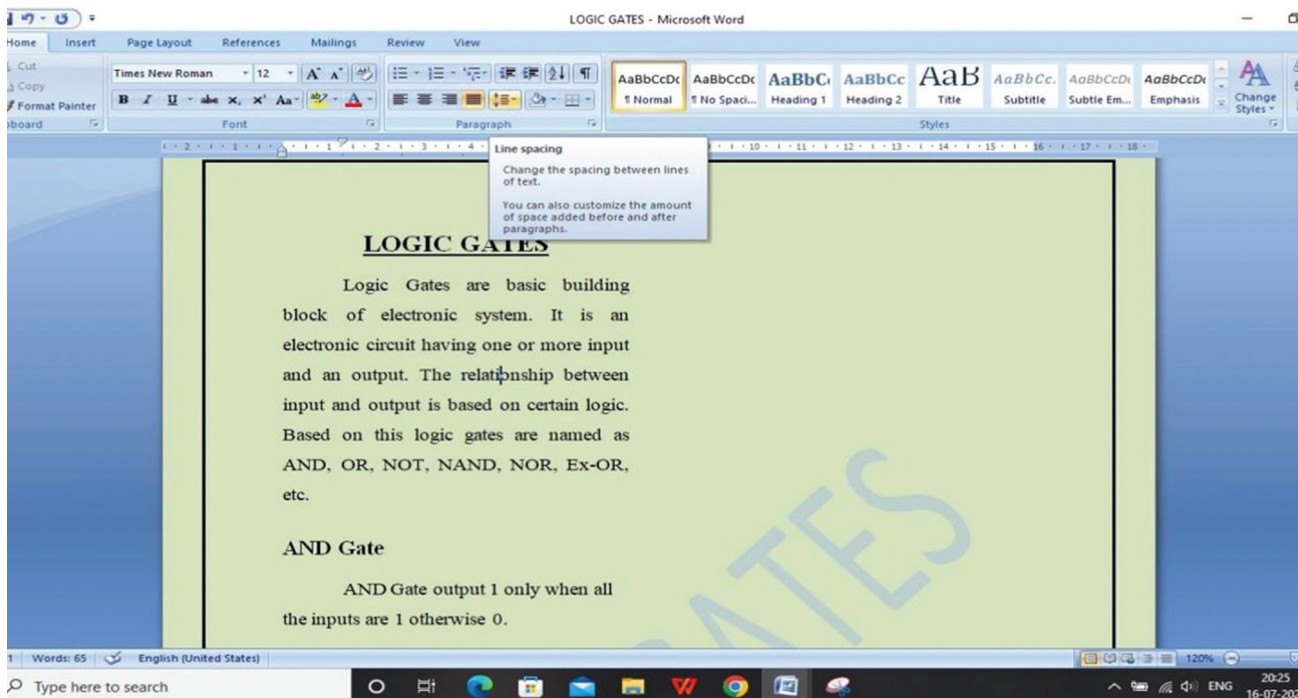
iii) Paragraph:

- Home → Font Group → Font Face → Times New Roman
- Home → Font Group → Font Size → 12
- Home → Paragraph Group → Justified.
- Home → Paragraph Group → Line Spacing → 1.5

iv) Bullets & numbering:

- To add bullet points or to number the points. **Home → Bullets & Numbering**





Step 4: Insert WordArt, Shapes, Pictures, Header & Footer, Tables, Equations, Hyperlinks:

- **Word Art:**

WordArt enables you to display text graphically by applying colours and effects to text. You can apply vary styles of word Art by **Insert** → **WordArt**



- **Shapes:**

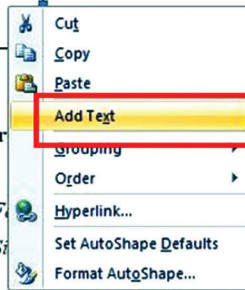
To draw the logic gates, **Insert** → **Shapes** → '+' symbol appears on the screen. Draw the mouse and draw. To add text inside the shape, **select the shape. Right click**, select **Add Text** from the list. Type the text.

To draw the logic gates, **Insert** → **Shapes** → '+' symbol appears on the screen. Draw the mouse and draw.

To add text inside the shape, select the shape. **Right click**, select **Add Text** from the list. Type the text.

To add Truth table of logic gates **Insert** → **Table** → **Table**.
Text inside the table is formatted as

- Home → Font Group → Font Face → Times New Roman
- Home → Font Group → Font Size → 8

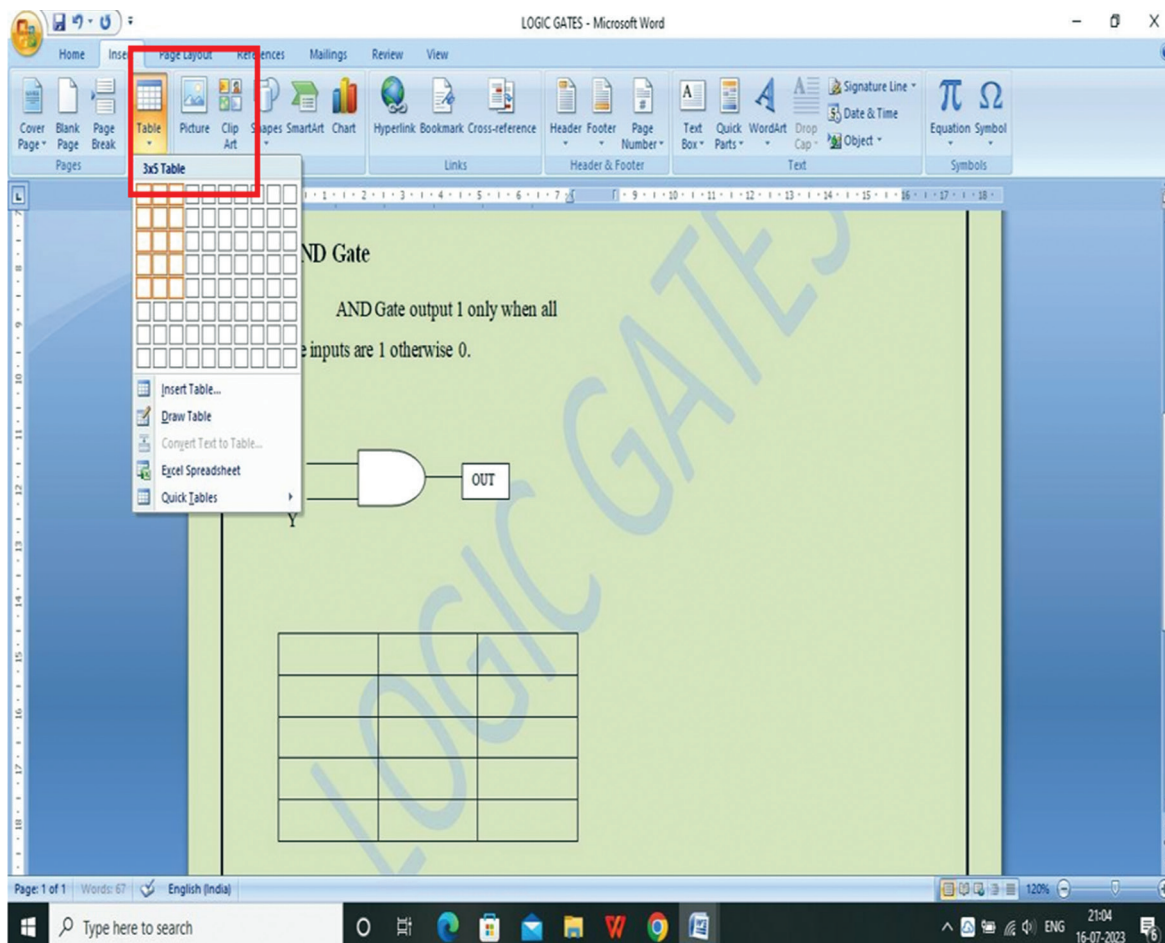


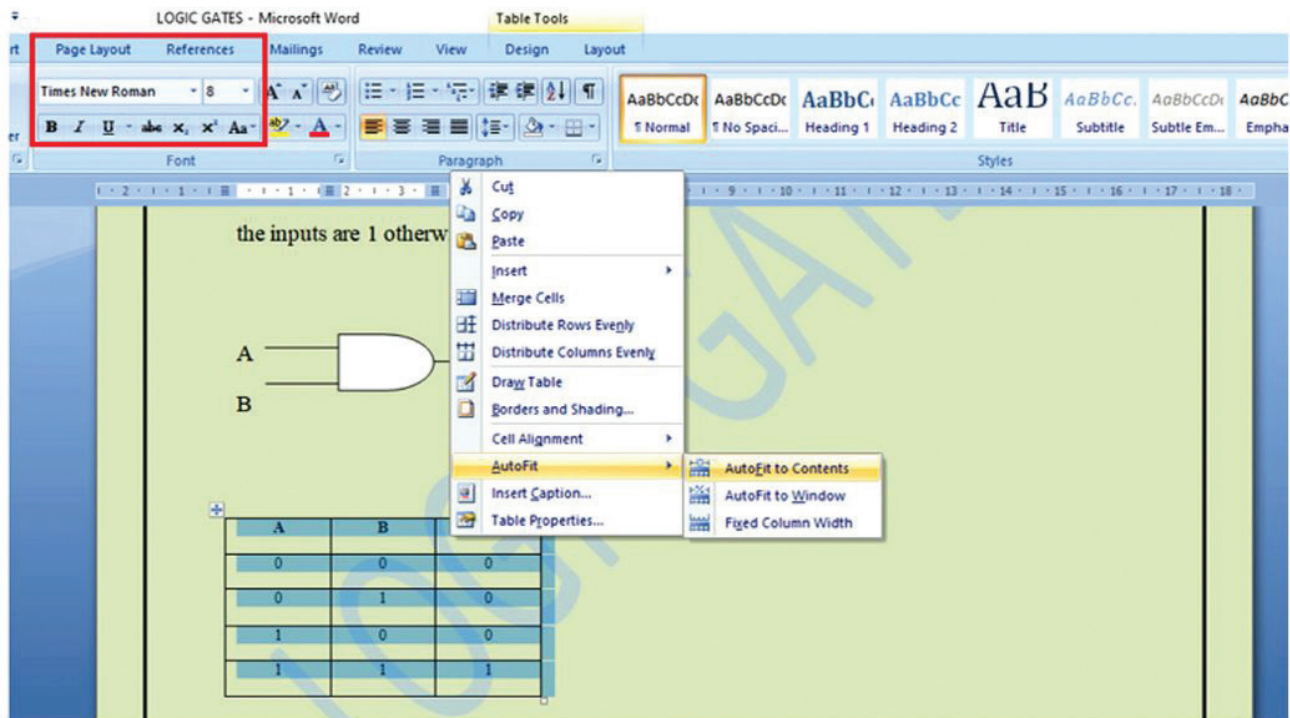
• Table :

To add Truth table of logic gates **Insert** → **Table** .

Text inside the table is formatted as

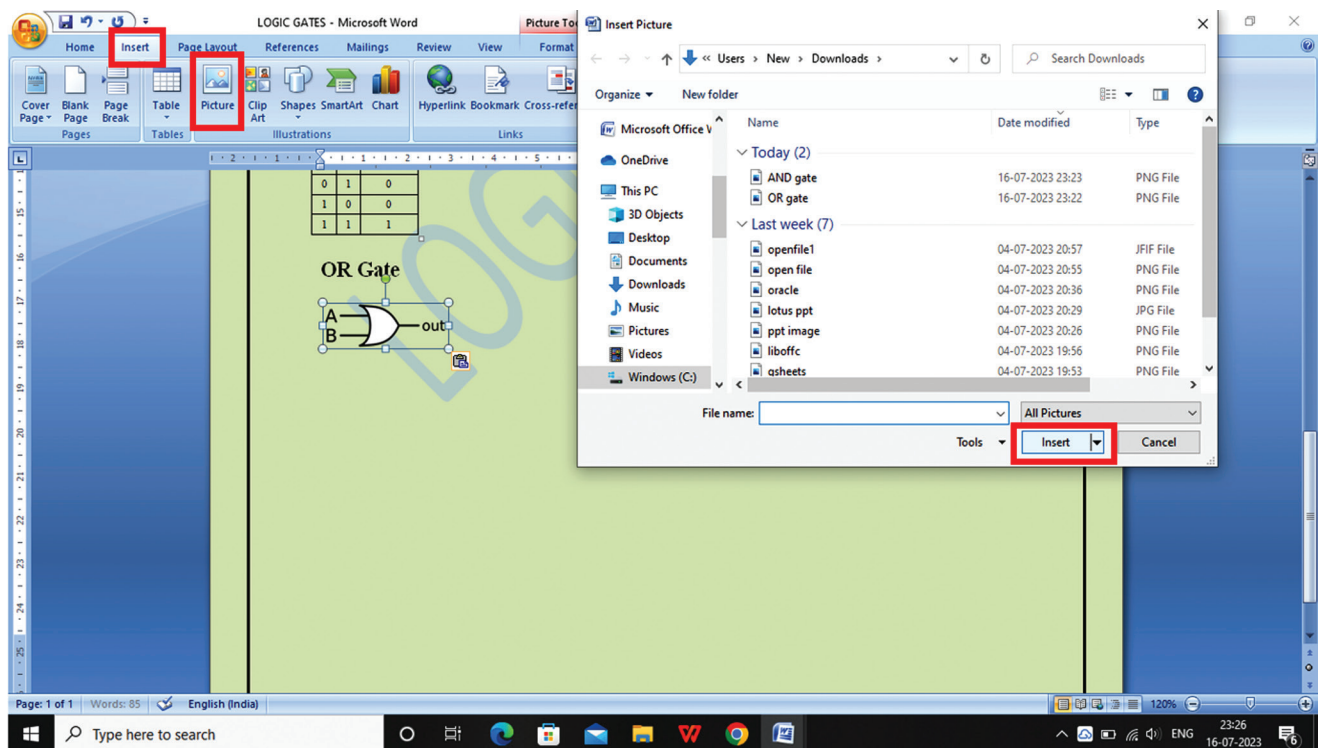
- Home → Font Group → Font Face → Times New Roman
- Home → Font Group → Font Size → 8





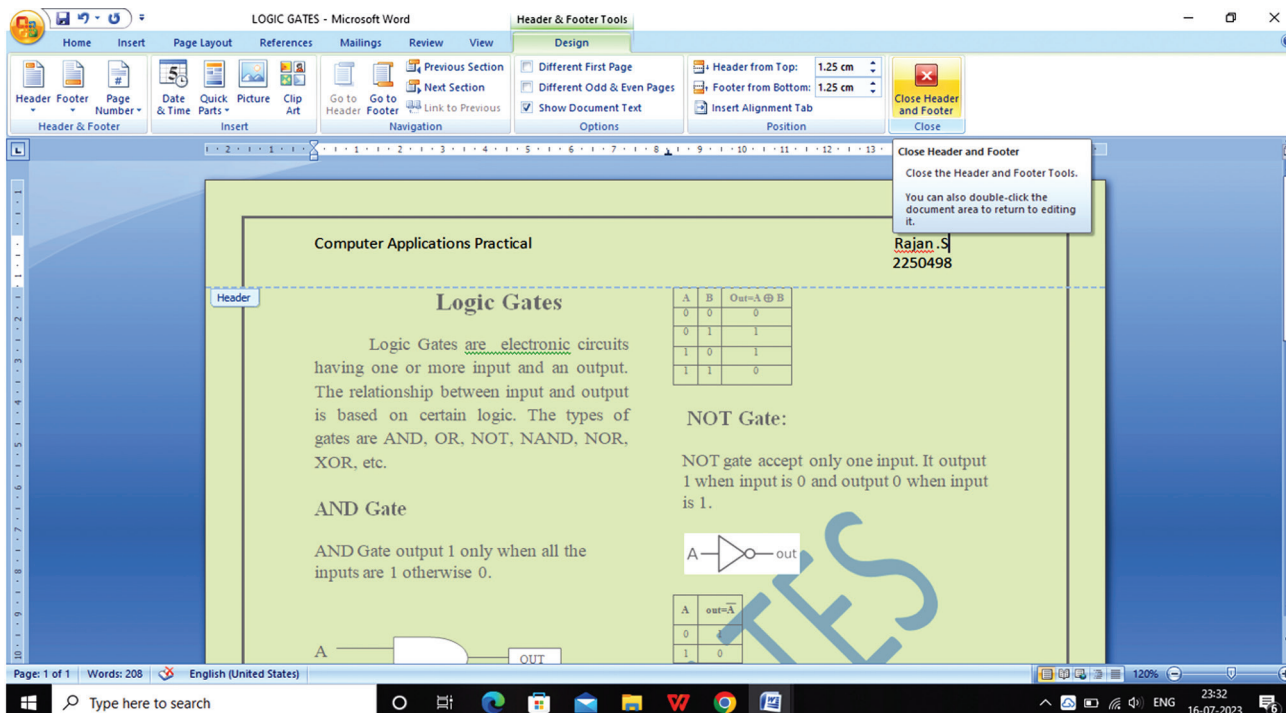
- **Pictures:**

To insert pictures, **Insert** → **Pictures**.



- **Header:**

To insert student name, register number, subject name in the header **Insert** → **Header**. Type the contents and close the header.

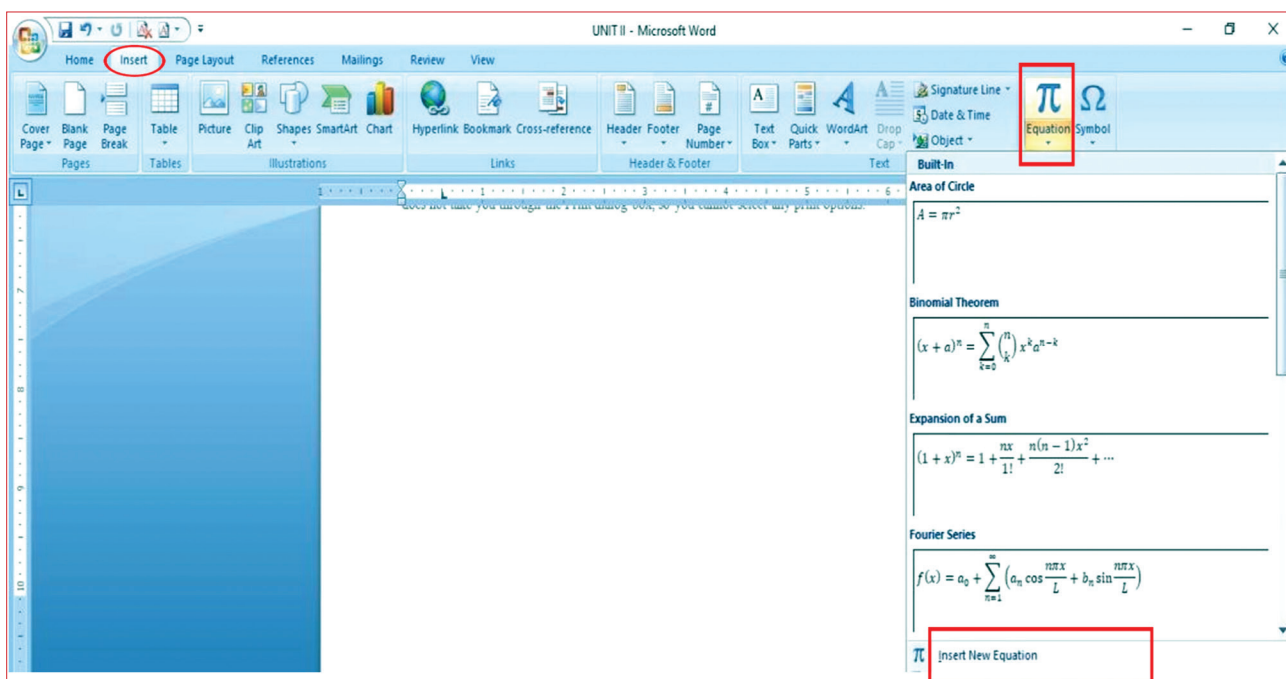


- **Footer:**

To add page number, date and time Insert → Footer. Add page number and date in the footer using footer design tab and close the footer.

vii) Equations:

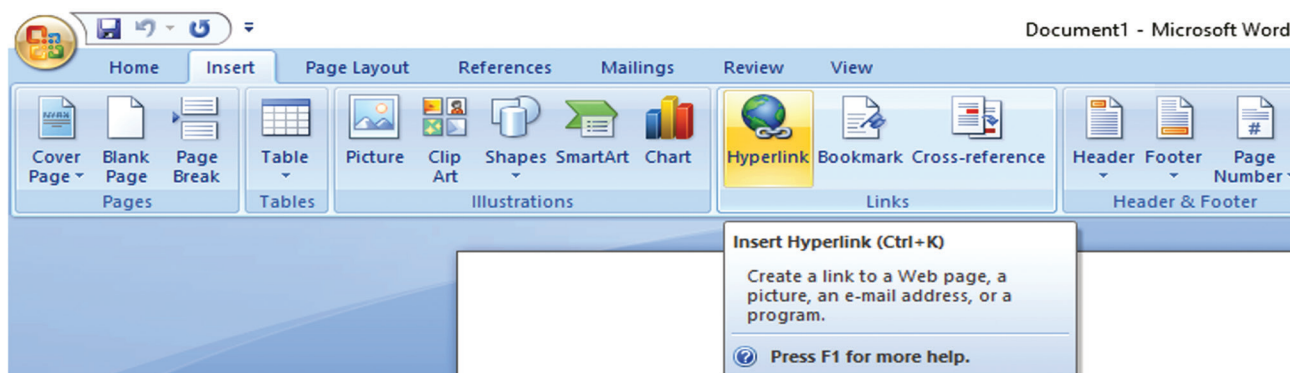
Select Insert → Equation or press Alt and =. You can use a built-in formula, To create your own, select Insert New Equation.



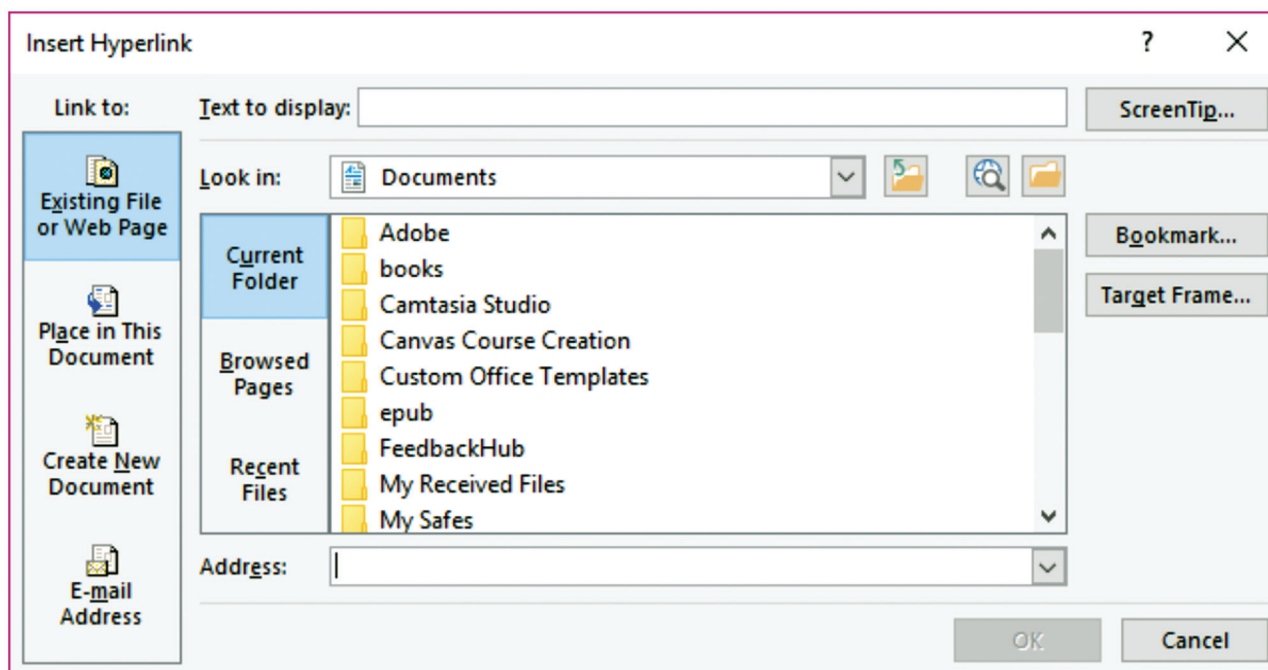
viii) Hyperlinks:

A **hyperlink** is a piece of **text** or an **image** in an electronic document that can connect readers to another portion of the document or a different webpage.

Select the text or image you want to make a hyperlink. Select the **Insert** → **Hyperlink** in the Links group. The shortcut key is **Ctrl + K**.



The Insert Hyperlink dialog box appears. If you selected text, the words will appear in the Text to display: field at the top. Type the address you want to link to in the Address: field.

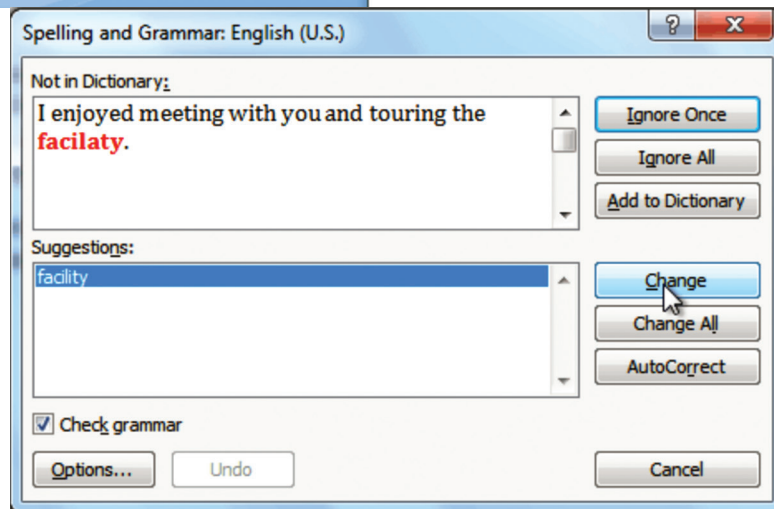
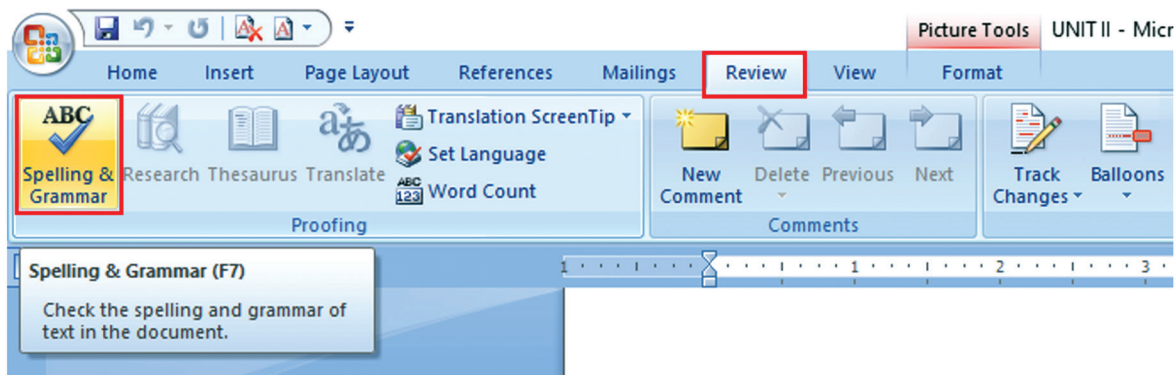


Step 5: Spelling & Grammar:

1. Spell Check:

Spell check is a feature that checks for spelling errors in a document. Spelling can be checked simultaneously with grammar.

Select **Review** → **Spelling & Grammar**. The shortcut key is **F7**.



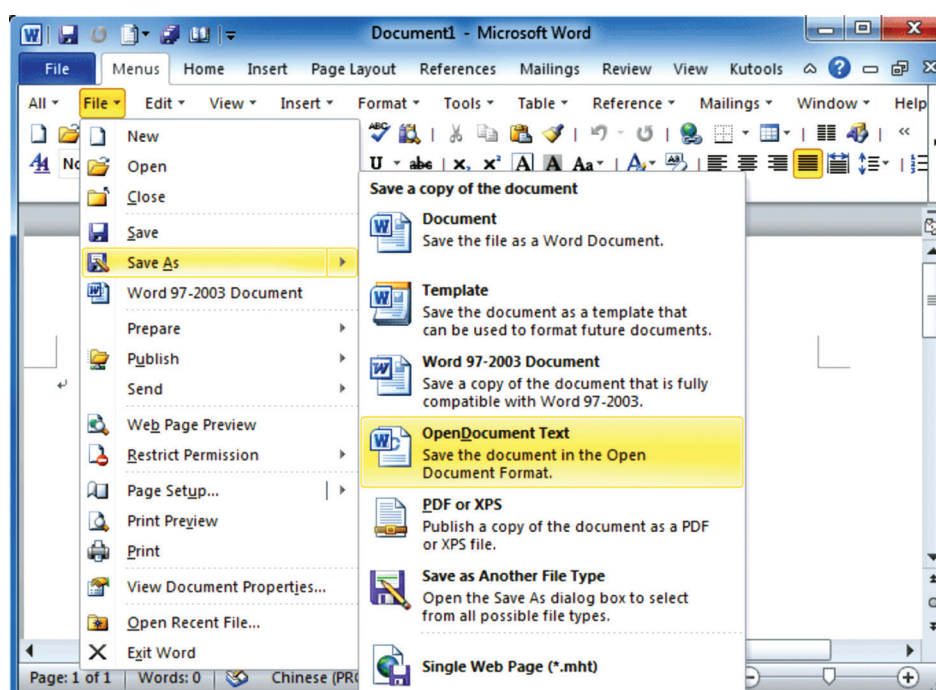
Step 6: Saving the file:

i) Save:

To save the word file, **Office Button** → **Save**. Type the name of the document as your need and then click **OK**.

ii) Save As:

To save the word file as PDF, **Office Button** → **Save As** → **Other formats**. Choose the file types as PDF and then click **OK**. The shortcut for Save As is **F12**.



Step 7: Printing The Document:

i) Print Preview:

Click the **Microsoft Office button** → **Print** → **Print Preview**. The document opens in Print Preview format.

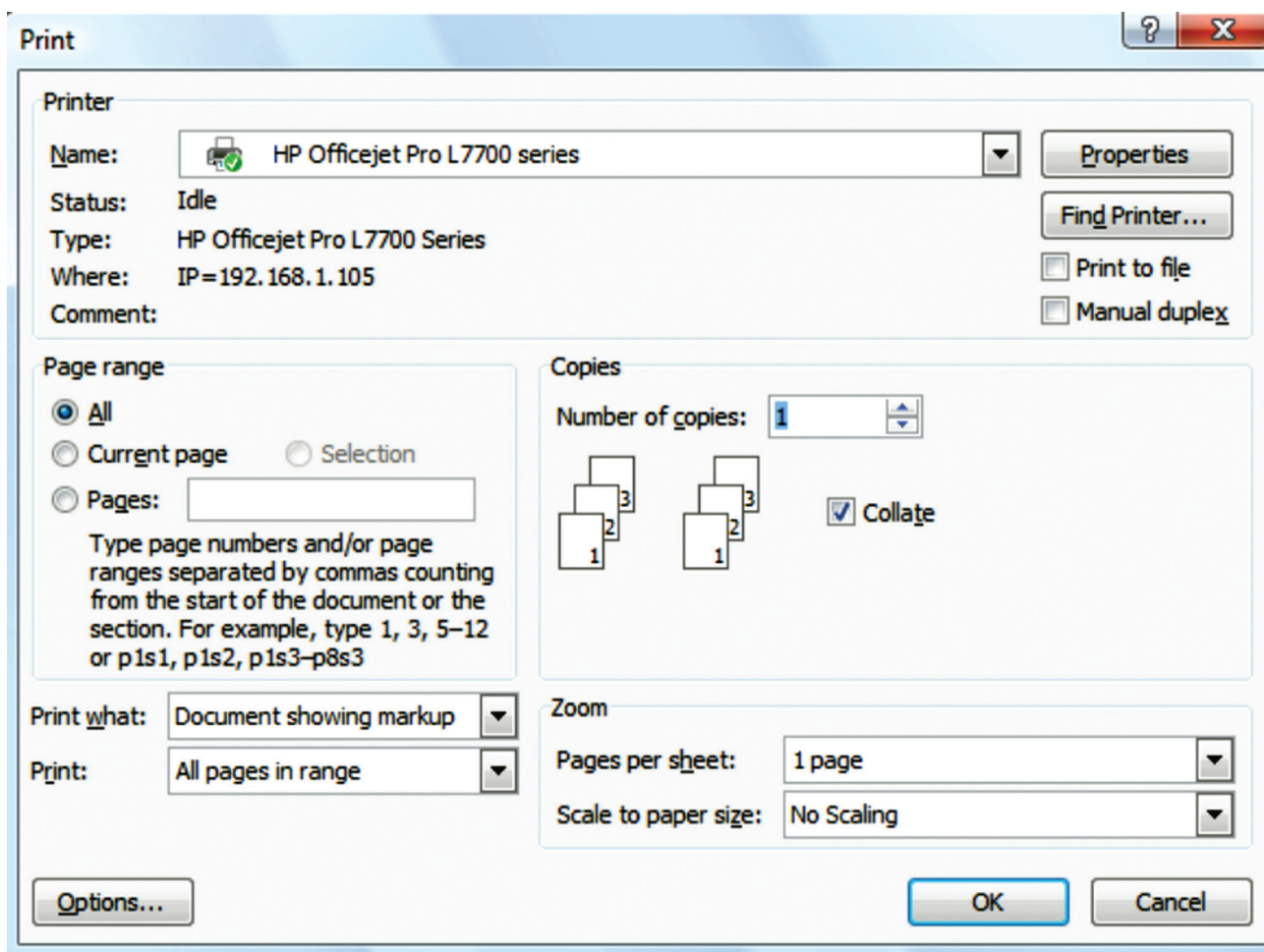
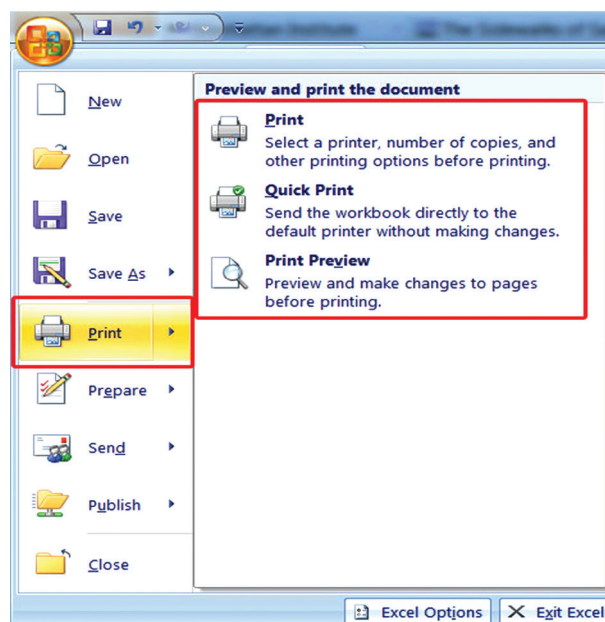
ii) QuickPrint:

Microsoft Office button → **Print** → **QuickPrint**

When you use this option, all pages of your document are printed. This print process does not take you through the Print dialog box, so you cannot select any print options.

iii) Print:

Select **Microsoft Office button** → **Print** → **Print**. The Print dialog box appears. Select the pages you want to print. Select the **number of copies**. Select a printer from the drop-down list. Select Ok. The shortcut for printing is **Ctrl +P**.



OUTPUT

Computer Applications Practical

Page 5
2250498

Logic Gates

Logic Gates are electronic circuits having one or more input and an output. The relationship between input and output is based on certain logic. The types of gates are AND, OR, NOT, NAND, NOR, XOR, etc.

AND Gate

AND Gate output 1 only when all the inputs are 1 otherwise 0.



A	B	Out = A.B
0	0	0
0	1	0
1	0	0
1	1	1

OR Gate



OR Gate output 0 only when both the inputs are 0 otherwise 1

A	B	Out = A+B
0	0	0
0	1	1
1	0	1
1	1	1

XOR Gate:

It outputs 1 when the two inputs are different from each other.



A	B	Out = A.B
0	0	0
0	1	1
1	0	1
1	1	0

NOT Gate:

NOT gate accept only one input. It output 1 when input is 0 and output 0 when input is 1.



A	Out = A
0	1
1	0

NAND GATE:

It is the Complement of AND gate.



A	B	Out = A.B
0	0	1
0	1	1
1	0	1
1	1	0

NOR Gate:

It is the Complement of OR gate.



A	B	Out = A+B
0	0	1
0	1	0
1	0	0
1	1	0

16 July 2023 Page 1

Result:

Thus to create a document with basic editing, formatting options, Tables, Equations, Hyperlinks, Pictures using Microsoft word 2007 was done successfully.

MAIL MERGE

What is Mail Merge?

Mail Merge allows you to use a spreadsheet of contact information to assign automatically a different address, name, or other piece of information to each copy of a document.

Ex No 3.

Create a standard covering letter and use mail merge to generate customized letters and generate labels by creating database.

Aim:

To create a standard covering letter and to use mail merge to generate customized letters and generate labels by creating database using Microsoft word 2007.

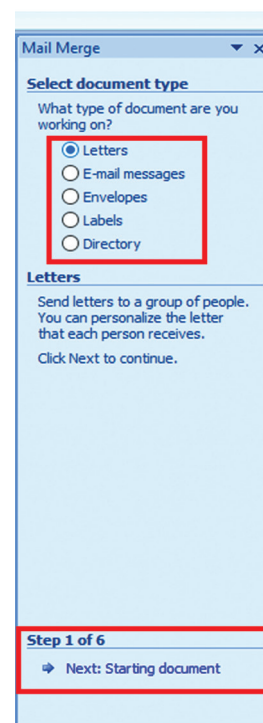
Procedure:

Step 1:

Open a Microsoft Word document.

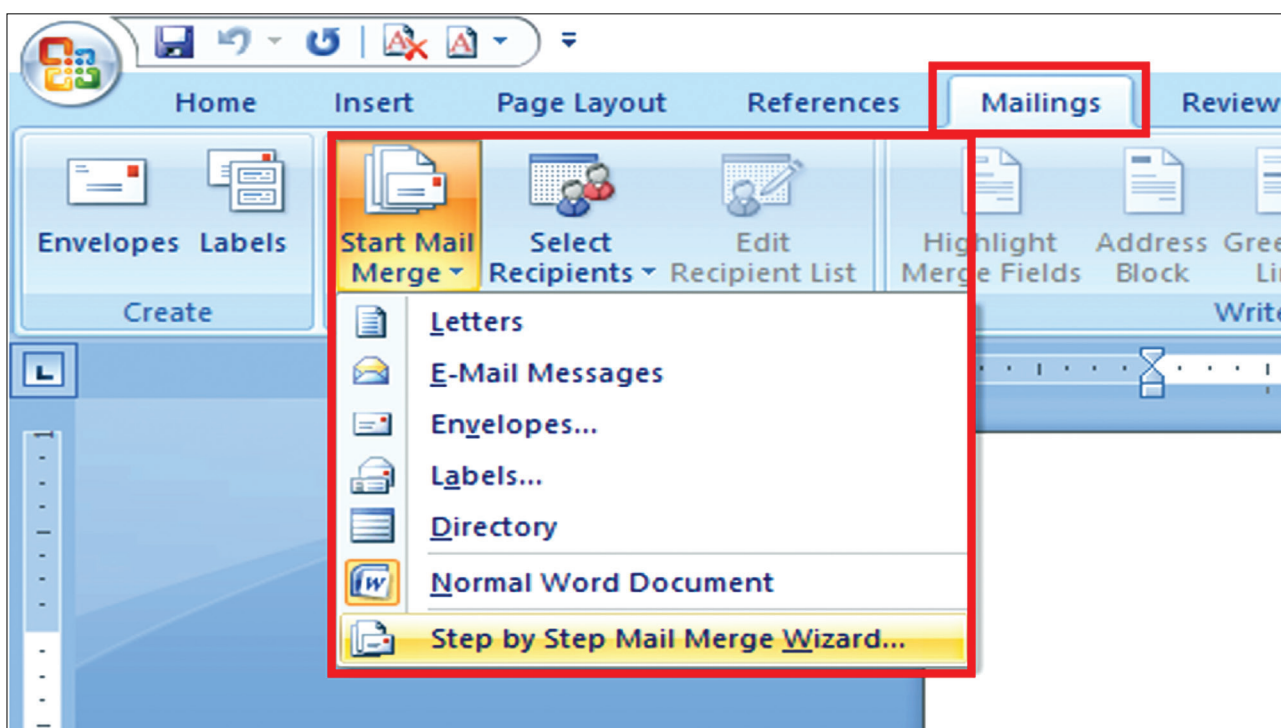
To create the merge, go to the **Mailings** → **Start Mail Merge** drop-down arrow to select “**Step-by-Step Mail Merge Wizard**.”

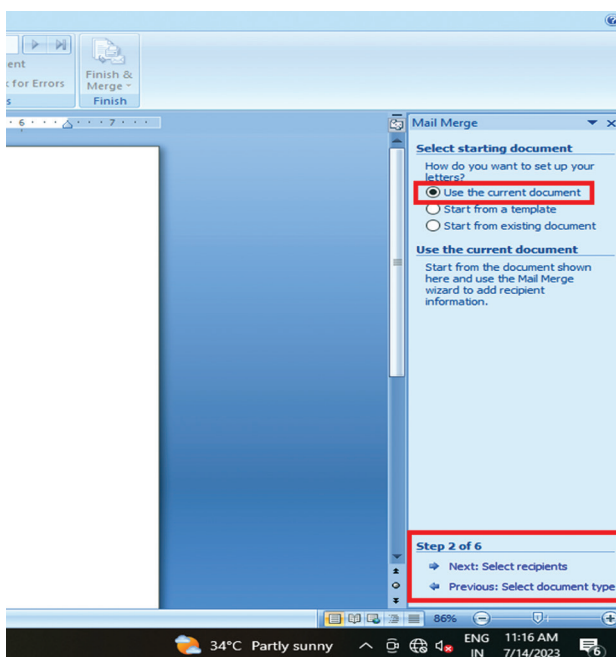
You'll see a sidebar open on the right which walks you through the mail merge process. Mark the Letter option at the top and click “**Next: Starting Document**” at the bottom.



Step 2:

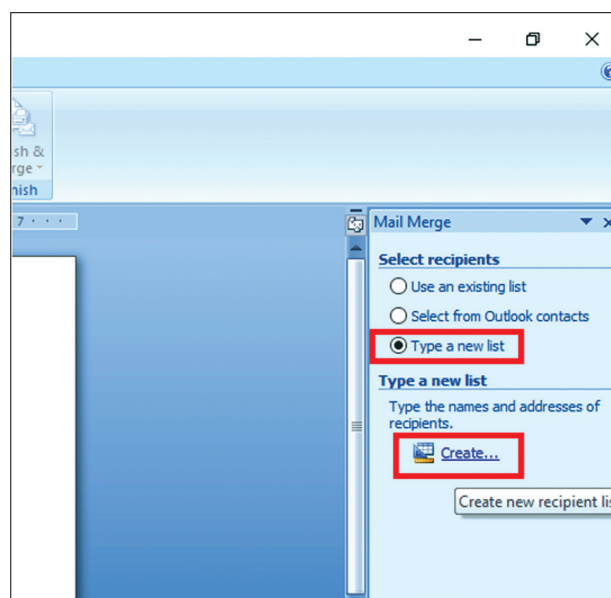
Next, choose the Use the **Current Document** option. Click “**Next: Select Recipients**” at the bottom of the sidebar.





Step 3:

Choose **Select Recipients** → **Type a New List**.
Click **Create**



In the **New Address List** dialog box type recipient information in each column as appropriate. There are many options available in the **New Address List** dialog box such as

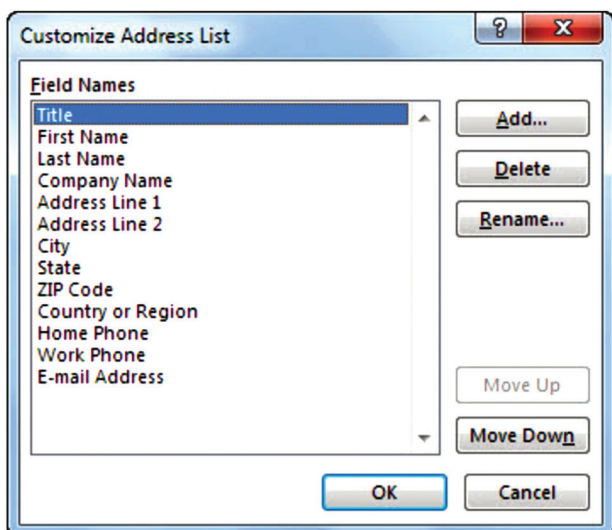
- **New Entry** Use to add new records to your mailing list data source.
- **Find** Search through a data source for a specific record to edit.
- **Delete Entry** Remove a selected entry. Enabled if you are creating or own the data source.
- **Customize Columns** This lets you add, delete, or rename columns. You can also move them up or down to change the order.

New Address List ? X

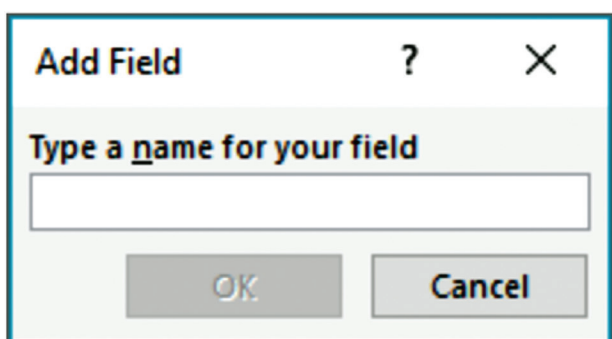
Type recipient information in the table. To add more entries, click New Entry.

	Title ▼	First Name ▼	Last Name ▼	Company Name ▼	Address Line 1 ▼
▶	Ms.	Diana	Sacca	Contoso Corp.	1234 Pleasant L...

◀ ▶



To add new fields Choose **Add**. Type a field name and then select **OK**.



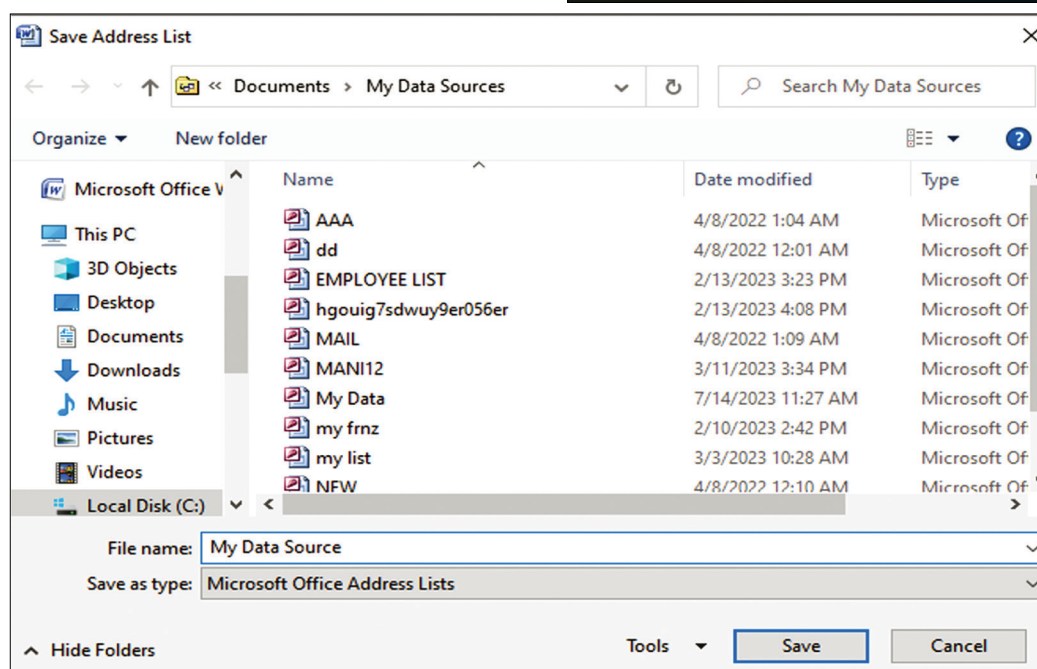
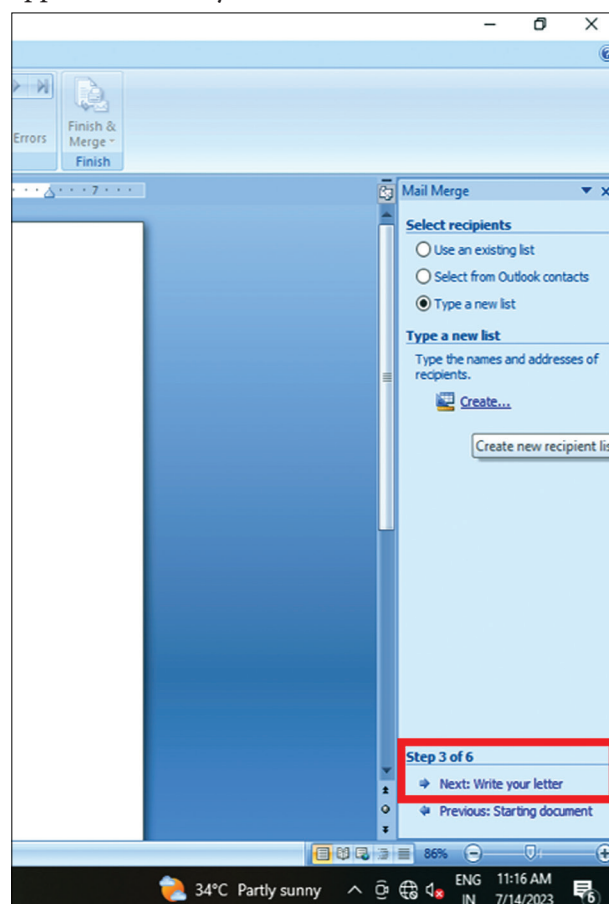
When you're done adding all the people you want to your list, choose **OK**.

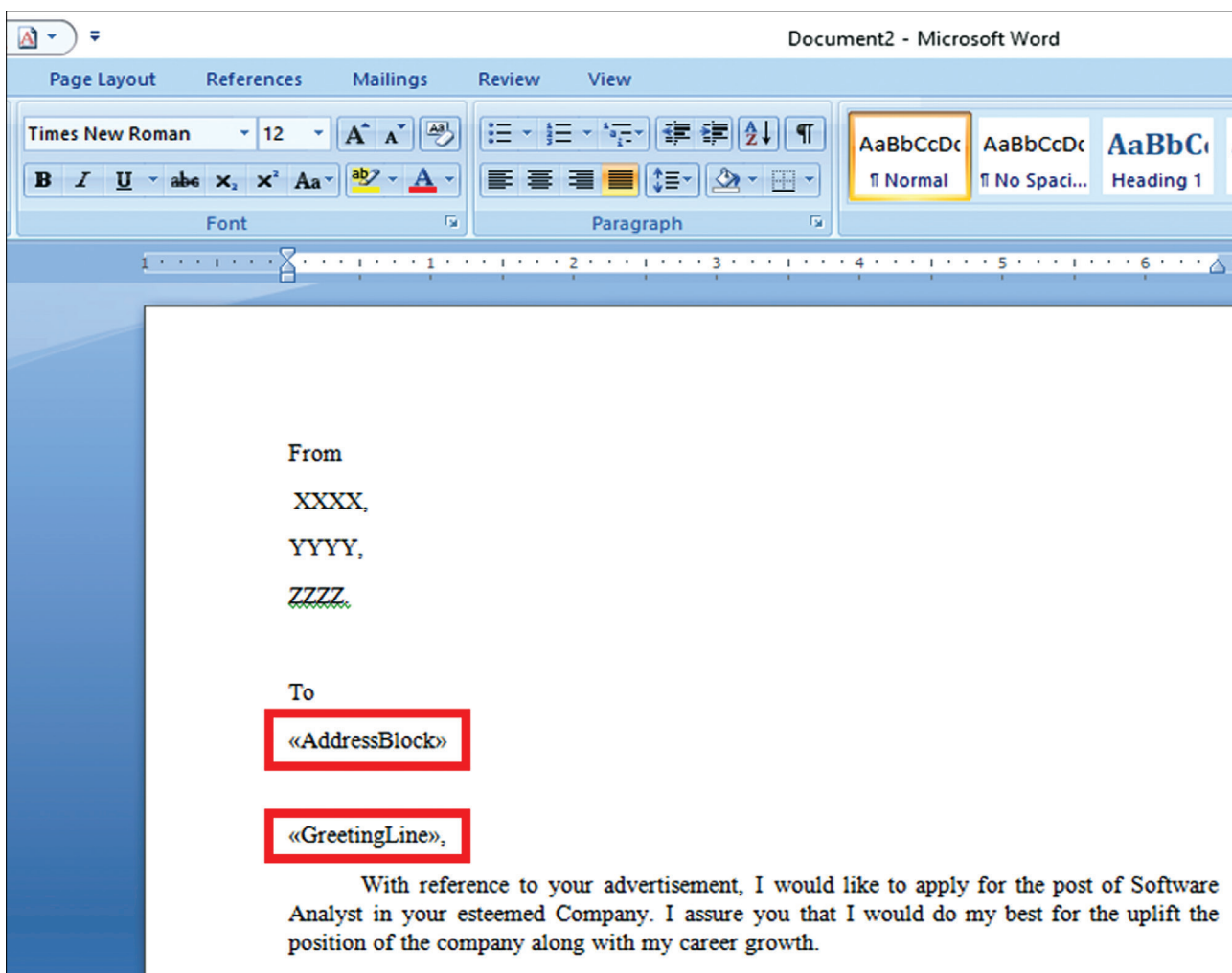
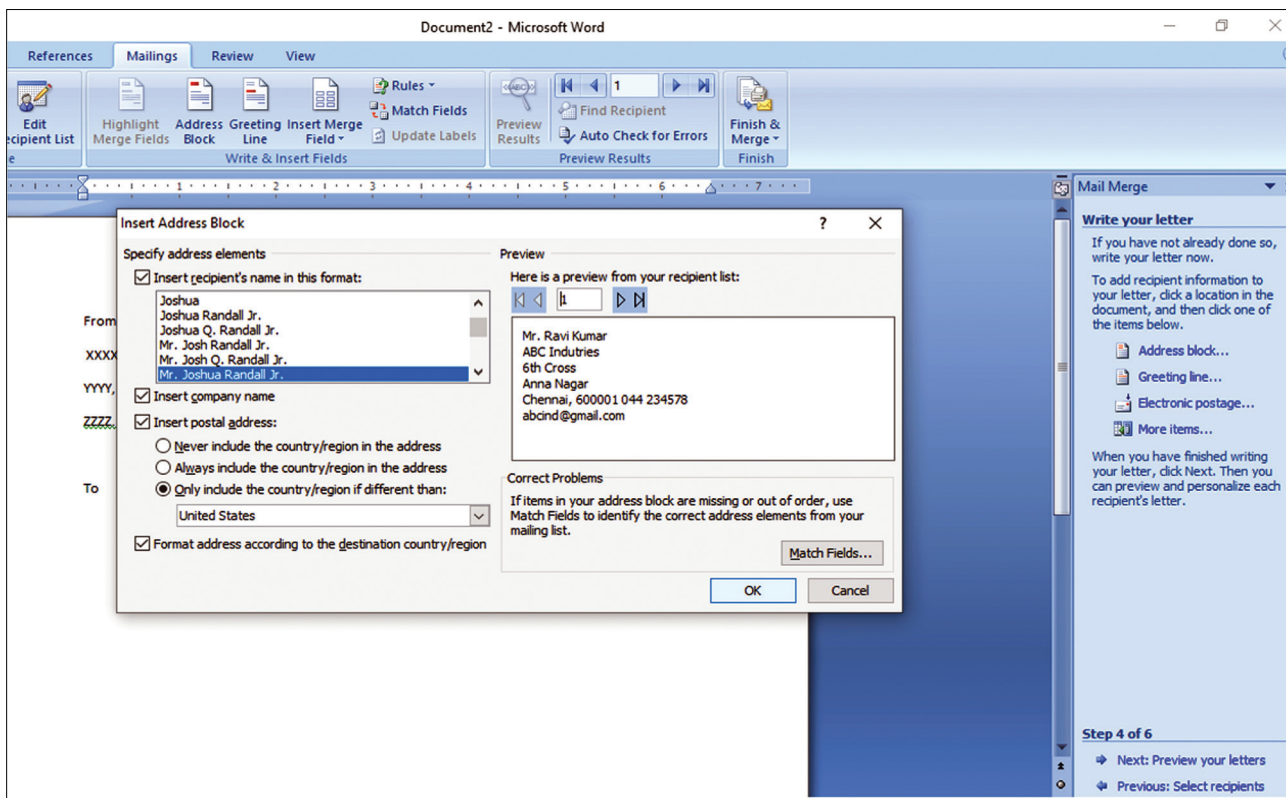
In the **Save Address List** dialog box, give your new file a name, and then choose **Save** → **OK**.

Step 4:

Click **Next: Write your letter**.

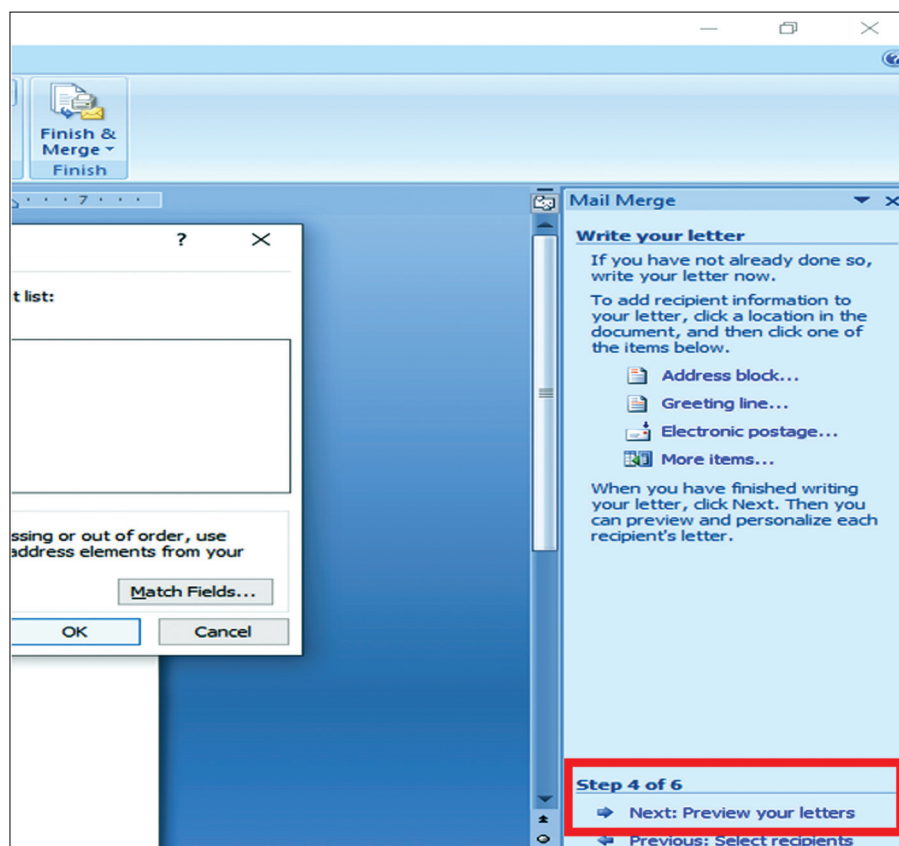
Place the insertion point in the document where you want the information to appear. Select Address block, Greeting line, or Electronic postage from the task pane. A dialog box with options will appear based on your selection.





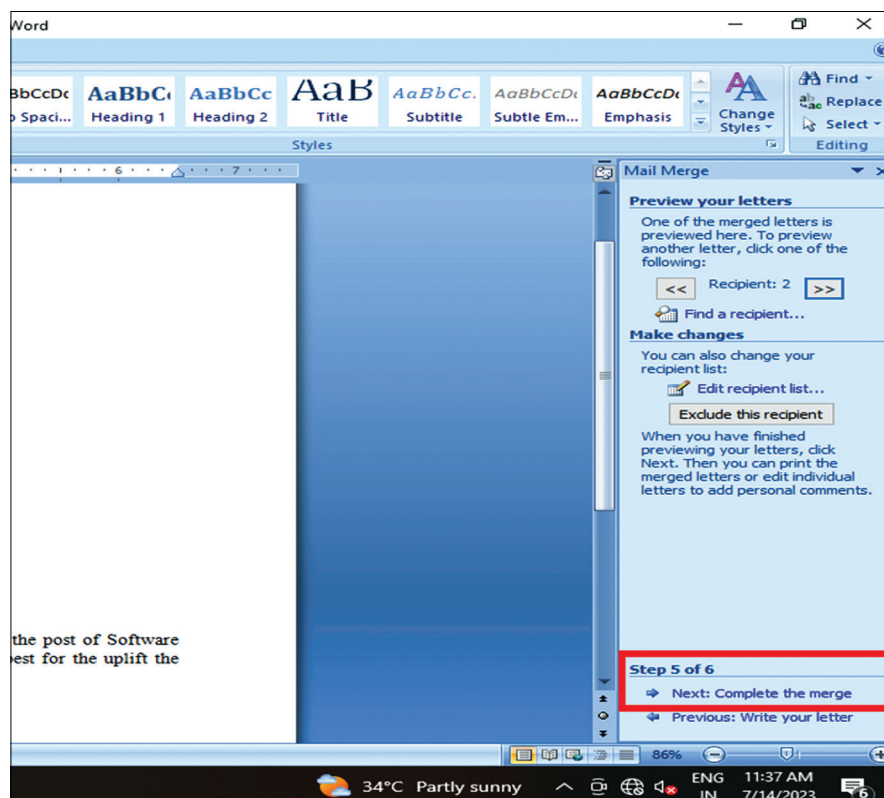
Step 5:

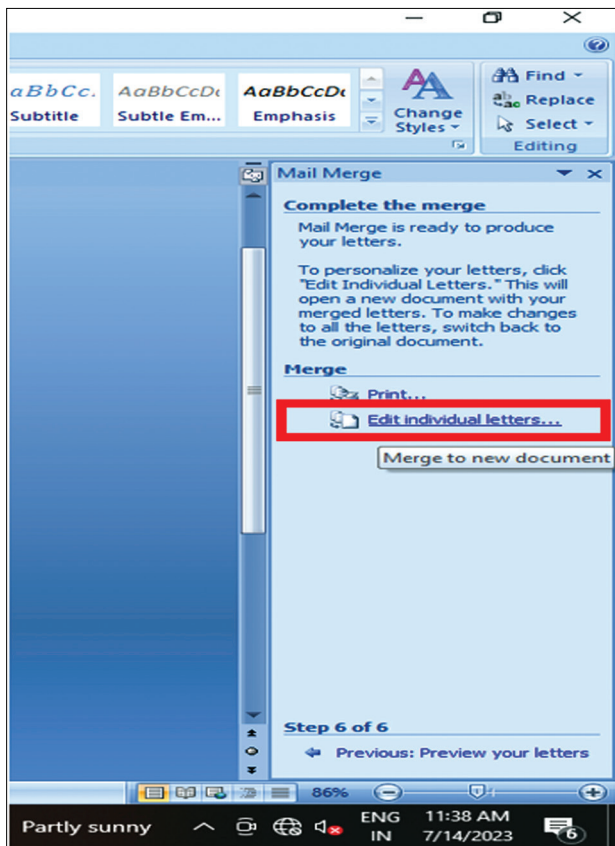
Click **Next: Preview your letters** in the task pane once you have completed your letter to preview the letters to make sure the information appears correctly.



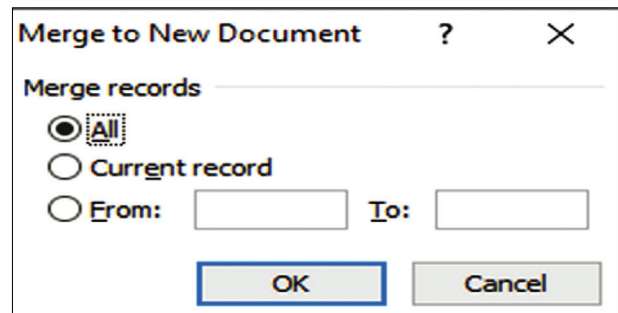
Step 6:

Click **Next: Complete the merge.**

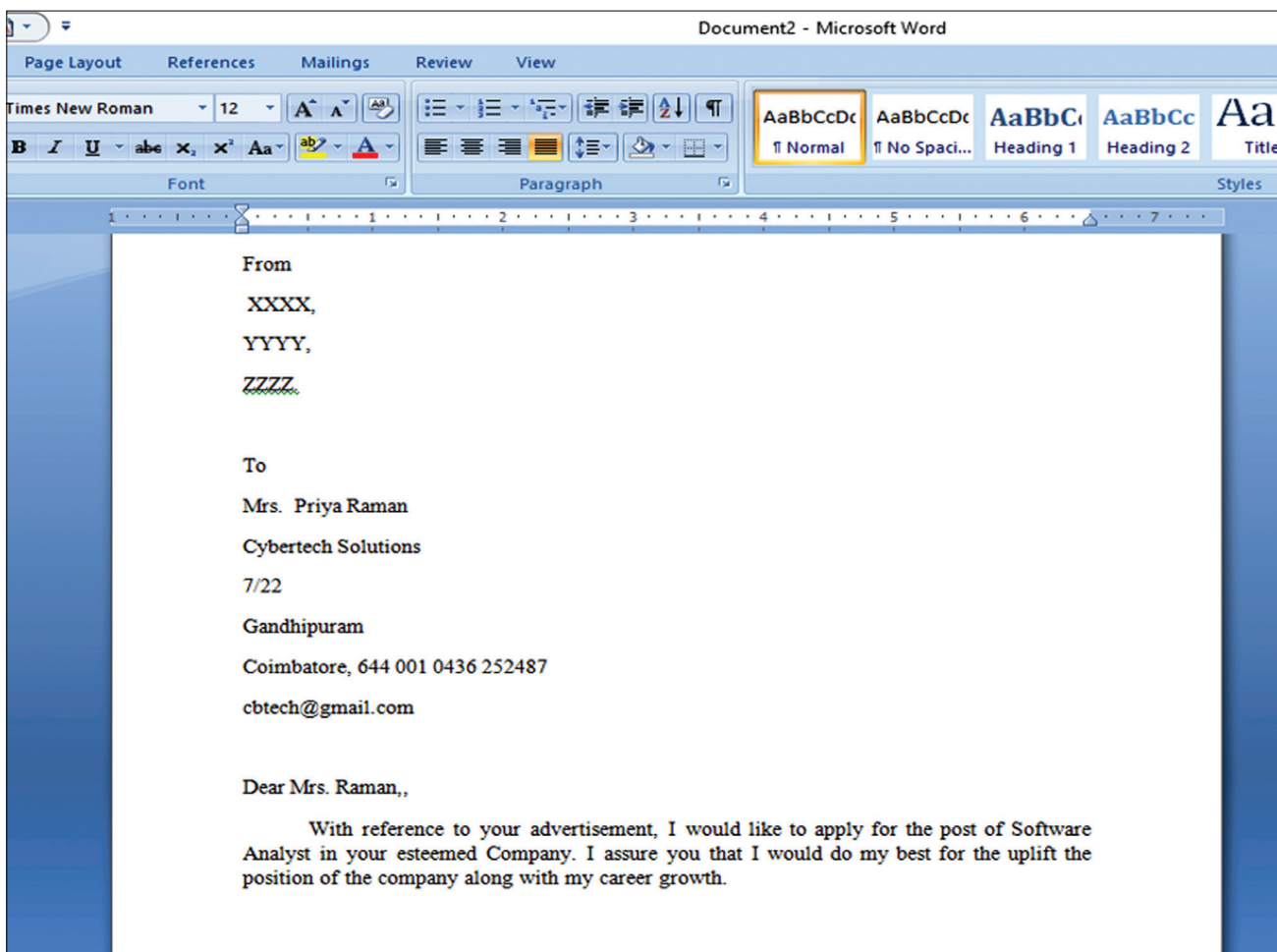




Click Edit Individual Letters. Click All



Output :



Result:

Thus to create a standard covering letter and to use mail merge to generate customized letters and to generate labels by creating database using Microsoft word 2007 was done successfully.

MS- Word Shortcuts:

Clipboard Shortcuts	
Ctrl+A	It allows you to select the entire content of a page. (Select All).
Ctrl+C	It is used to copy the selected content, including other objects of a page.
Ctrl+V:	It is used to paste the copied data.
Ctrl+X:	It is used to cut the selected data.
Text Formatting Shortcuts	
Ctrl+B	It offers users with the option to bold the selected text of a page.
Ctrl+I	It allows the user to italicize and un-italicize the selected text.
Ctrl+U:	It is used to underline the selected text.
Alignment Shortcuts	
Ctrl+J	It is used to justify the selected item
Ctrl+L	It is used to align the selected item to the left of the screen
Ctrl+R	It is used to align the selected content to the right of the screen.
Ctrl+E:	It is used to align the selected item to the center of the screen.
Document Shortcuts	
Ctrl+N	It allows the users to create a new or blank document.
Ctrl+O	It is widely used to open a file in the current software.
Ctrl+S	It is used to save the document or a file.
Printing Shortcuts	
Ctrl+P	It is used to open the print preview window for the current page or document.
Other Shortcuts	
Ctrl+F	It provides users with the option to find or search text in the current document .
Ctrl+Y	Its use is to redo the last performed action.
Ctrl+Z	It is used to undo the last performed action.



UNIT III

INFORMATION ANALYSIS

Introduction:

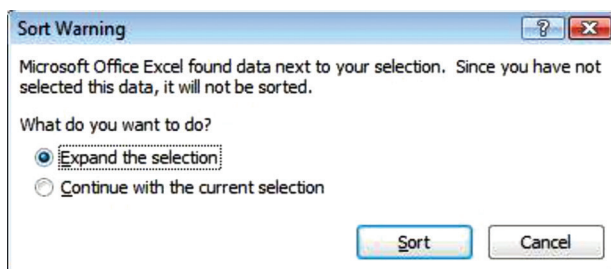
Information: Meaningful and organized data is Information. Analysis means detailed examination of Data. Analysis of Information is helpful in decision making. Excel and Google sheet are tools used for Analysis & Hence help us in decision making.

SORTING AND FILTERING

Sorting:

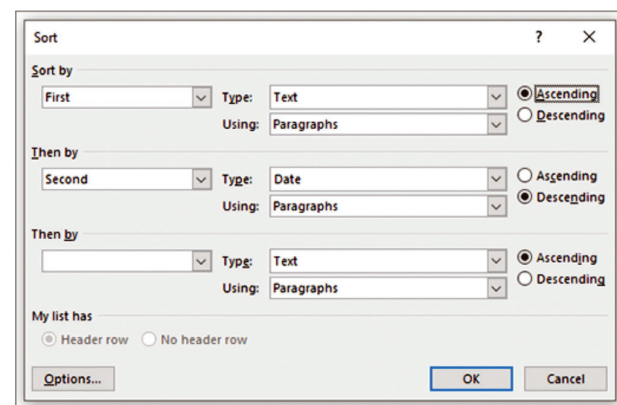
Arranging of Data in the sheet entirely or partly in ascending or descending way. Sorting data helps you quickly visualize and understand your data better, organize and find the data that you want, and ultimately make more effective decisions.

Steps for Sorting Based on Text, Number, Color:



1. Select a column of alphanumeric data in a range of cells, or make sure that the active cell is in a table column containing alphanumeric data.
2. On the Data Tab, Sort & Filter Section Click Sort.
3. If the entire column with data is not selected "Sort Warning" Dialog Box will get open with options "Expand the selection/to continue with current selection". In "Expand the selection" option all column will get affected by the sorting. "Continue with current selection" option affects only the selected columns.

After selection of any one of the option. Click Sort



4. Sort Dialog Box will get open where we can add/delete/copy multiple level of Sorting.
We can sort by any column header and on the values/cell color/font color and on any order ascending/descending.
5. Optionally, you can do a case-sensitive sort also.
6. After selecting required options. Click OK button.

Sorting Data on One Column

To sort range of Cells on the basis of one Column

1. Click a cell in the Column that contains the data you want to sort on.
2. On the Data tab, in the sort and filter group.
3. Click Sort A to Z button/Sort Z to A button.
4. Excel Sorts the data as per selection.

Sorting Data on Multiple columns

1. Select the cell range with two or more columns.
2. On the data tab, in the sort and filter group.



3. Click the Sort button.
4. The Sort dialog box opens, in that
Under sort by select the column to be sorted
Under order select A to Z /Z to A Button for Text
Select Smallest to Largest/Largest to Smallest to sort numbers
Oldest to newest /newest to oldest for date and time
5. Click add level button to add new column to sort
6. Click Ok button

Sorting data by color

You can sort a range of cells on the basis of the font color of the data /background color

1. To sort range of Cells on the basis of font/cell color Column
2. Click a cell range that contains the data you want to sort on
3. On the Data tab, in the sort and filter group, click the sort button
4. The sort dialog box opens
5. Under the column in the sort by box, select the column that you want to sort
6. Under sort on, Select cell color/font color
7. Under order click the arrow next to button and then, depending on the type of format, select a cell color or font color
8. In the last list box select on top to move cells that contain cell/font color to the top. On bottom to move cells containing the cell color / font color to the bottom
9. Click on Add level to specify next cell color / font color
10. Click ok button
11. Excel Sorts data according to the options

Filtering:

Data Filtering is the used to filter the data that meets certain criteria as per the need of user.

Excel provides two ways to filter cell ranges -

1. On the basis of specific values in the cell range
2. On the basis of specific conditions for values in the cell range

Steps for Filtering Data:

- Select any cell within the Range
- Go to Data tab → Sort and filter group, Click the Filter button
- The filter control appears next to each column heading
- Click the filter control of the column header on which you want to specify filter condition
- The filter menu appears, it displays list of unique values in the column
- Remove Check Mark from data not to display
- Click ok button.

(Excel displays rows with unique values selected)

Filtering Data by color:

If the cells in same column has different colors then this filter will be in enabled state. User can utilize the filter to visualize different data in the different Colored cells.

- Click the filter control of the column that has color formatting
- In the menu that appears, select filter by color and select the font/cell color to filter

Custom Filter:

The custom filter helps you to filter data based on specific criteria for values in the cell range

Using this feature, we can do two combinations (and/or) of criteria in single column. It also has the feature of Pattern Matching using the symbol? or * to match a single character/series of character while filtering.

Filtering Data by Number/Text:

Here we can utilize the various number filtering options like greater than, less than, equal, in

HomeInsertPage LayoutFormulasDataReviewView From Access From Web From Text From Other Sources Existing Connections Get External Data Refresh All Connections Connections Properties Edit Links Sort & Filter Sort Filter Clear Reapply Advanced									
A1 fx Sr.No									
	A	B	C	D	E	F	G	H	I
1	Sr.No	Emp ID	Name		Departm ent	Grade	Joining Date	Marital Status	Salary
2	1	1	Radha		CSE	I	1/5/2022	Married	50000
3	2	2	Sundar		EEE	II	5/7/2012	Married	75,000

between, Top 10, Above Average, Below Average or Text filtering option like contains, not contains, begins with, Ends with.

Select any cell within the Range

- Go to Data tab → Sort and filter group, Click the Filter button
- The filter control appears next to each column heading
- Click the filter control of the column header on which you want to specify filter condition
- The filter menu appears
- Select Number/Text Filter and click any one of predefined condition / Custom Filter
- A Custom Auto filter dialog box appears
- Under show rows where select a filter condition from first list box a value from the Second list box

Click ok that displays the filtered data

Removing Filter

- Select the column heading on which filter has been applied
- On the data Tab → Sort and filter Group
- Click Clear Button/Filter Button

Filter button removes Filter criteria and Filter Control.

Clear Button removes Filter Condition.

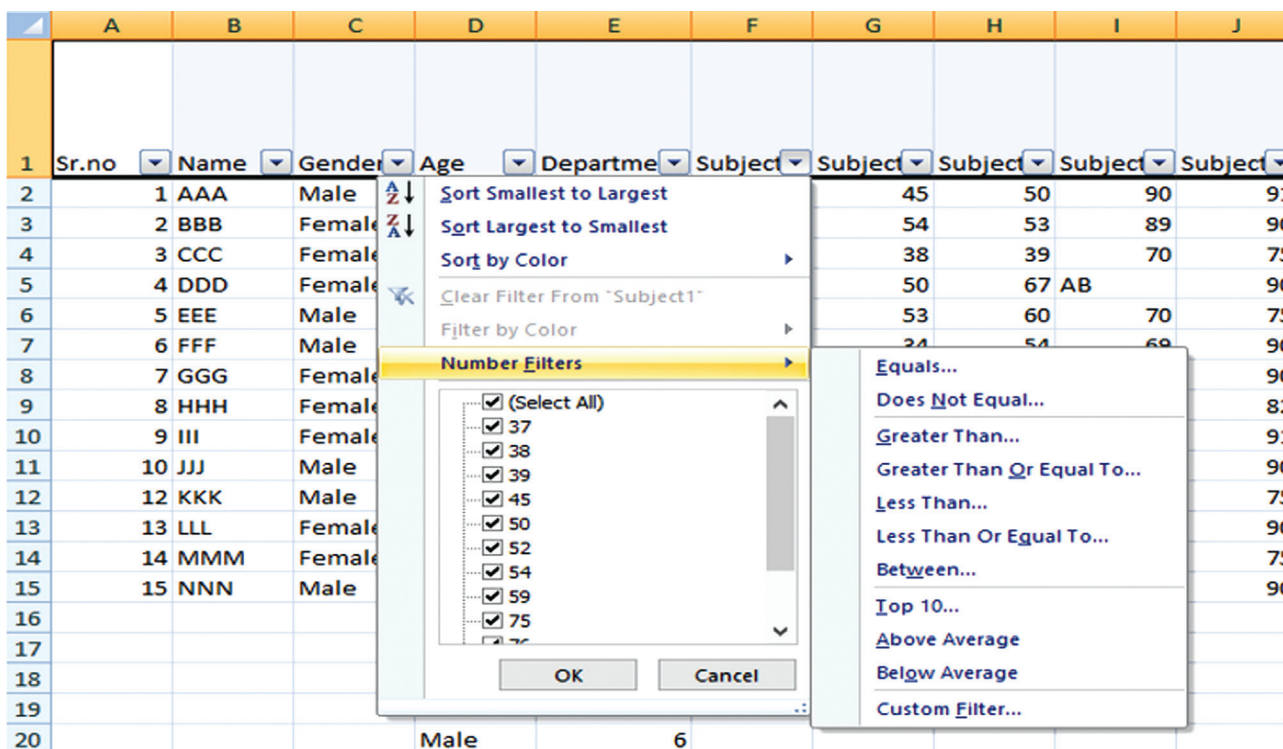
Charts

Charts are the visualizing tools used to analyze the data. Excel provides a variety of chart types that you can choose from when you create a chart.

Elements of a Chart

The different parts of a chart are known as the elements of a chart

1. Chart Title-Heading of Chart
2. Chart Area-Area within which chart element displays
3. Plot Area -Area Bounded by Two Axes
4. Axes-Line Boundary of Plot Area
 - X Axes-Horizontal Axes, usually use to represent Category/Time intervals
 - Y Axes-Vertical Axes Use to represent Values of Category
5. Axes Titles-X Axis,Y Axis description
6. data Series-Set of Values in a worksheet used to plot the chart
7. data Table-Values in plotted in the chart. displayed below the chart in a grid
8. data Labels show the values of different data points in a chart
9. Legend-Represent the data Series and its Color
10. Grid Lines-Horizontal and Vertical line that is used to identify each value in the chart to identify easily.



Creation of different Charts:

For most charts, such as column and bar charts, you can plot the data that you arrange in rows or columns on a chart. Some chart types, however, such as pie and bubble charts, require a specific data arrangement.

Steps to Create a Chart

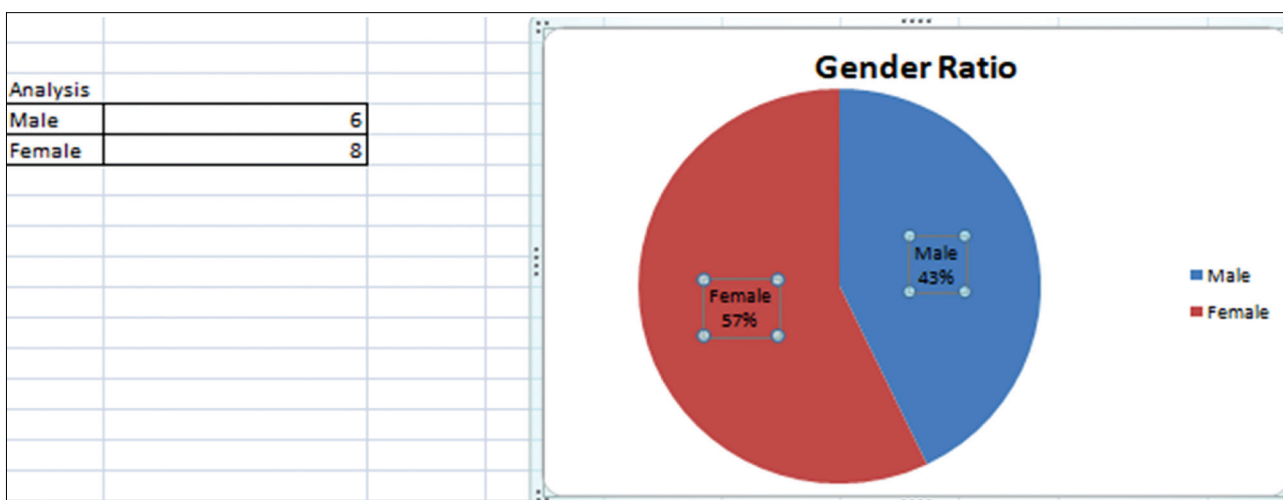
1. On the worksheet, arrange the data that you want to plot in a chart.
2. Select the cells that contain the data that you want to use for the chart.
3. To cancel a selection of cells, click any cell on the worksheet.

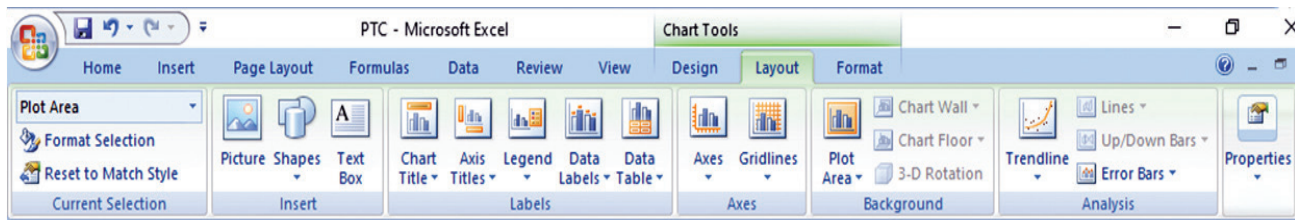
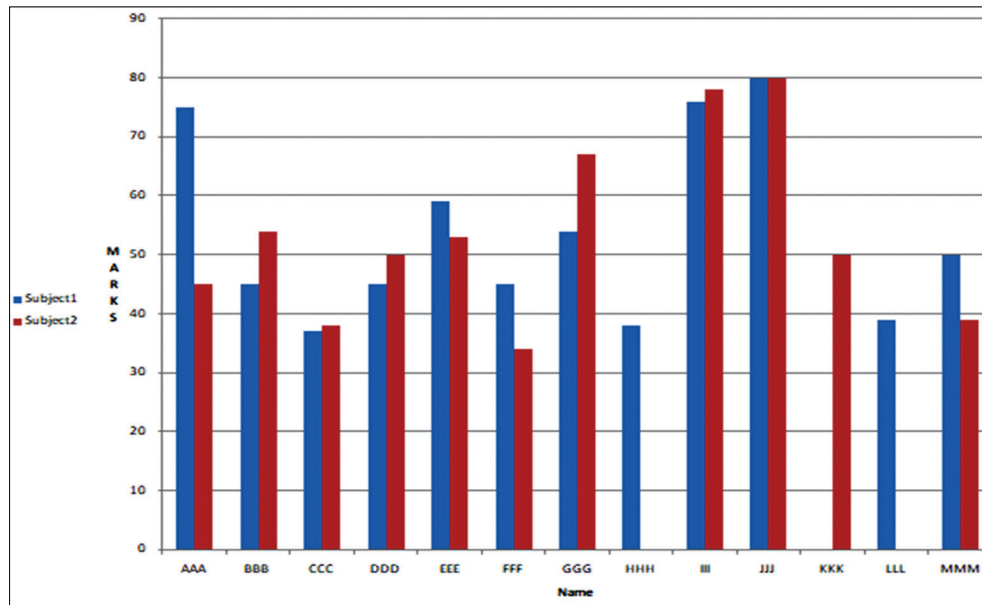
4. On the Insert tab, in the Charts group, do one of the following:

Click the chart type, and then click a chart subtype that you want to use.

To see all available chart types, click a chart type, and then click All Chart Types Button

5. Insert Chart dialog box opens, click the arrows to scroll through all available chart types and chart subtypes, and then click the ones that you want to use.
6. Click Ok to create the Chart
7. The chart is placed on the worksheet as an embedded chart





Setting of Label in Chart:

Go to Chart Tools → Layout Tab → Labels Subsection

We have the following items

Chart Title: Used to Set and Position Chart Title

Axis Title: Used to Set and Position Axis Title

Legend: Used to Set and Position Legends

Data Labels: Used to Set and Position Data Value as Label in the Chart

Data Tables: Used to Set and Position Table of data used to plot chart in the Chart.

To utilize Labels in Chart:

Click any one option given in the Labels Subsection → Select any option given in the popped up menu as per our need.

Print Preview and Print

Print Preview

It is good to preview the page in-order to avoid wastage of papers & to check whether it is as per our need.

Navigation

Go to Office Button → Print → Print Preview

The Preview Page has following buttons

Next, Previous button to navigate to the pages one by one.

Zoom to view the content in preview page in larger size.

Show Margin Check box to Show the margin in all four sides of document. We can Drag Marker Guide and set the Margin

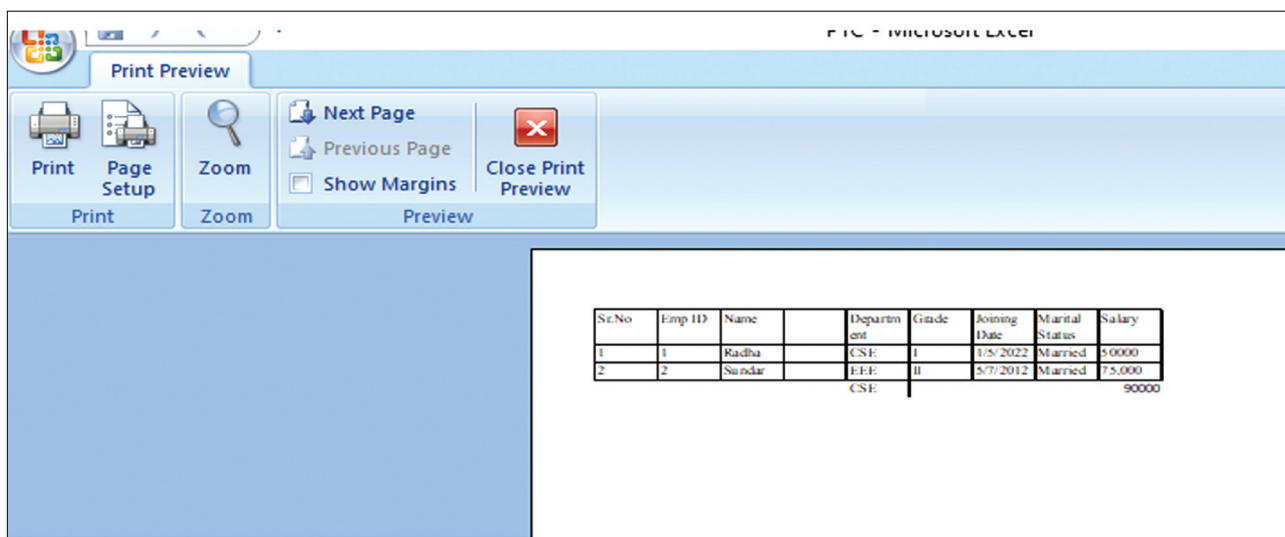
Close Print Preview: It will exit from the Print Preview Page to Normal View.

Print: After verifying documents we can click Print to Print the Document.

To Set the Page Setup before printing the pages

Go to Office Button → Print → Print Preview → Click Page Setup Icon → Page Setup Dialog Box will get open.

Page Setup Dialog Box has following Tabs



Page Tab:

Orientation:

Select the option Portrait (Vertical) or Landscape (Horizontal) depending on the need to print more columns or Rows in a Single Page.

Scaling:

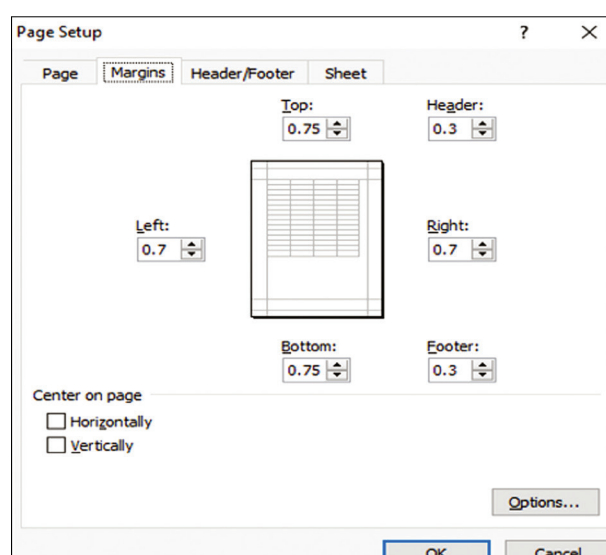
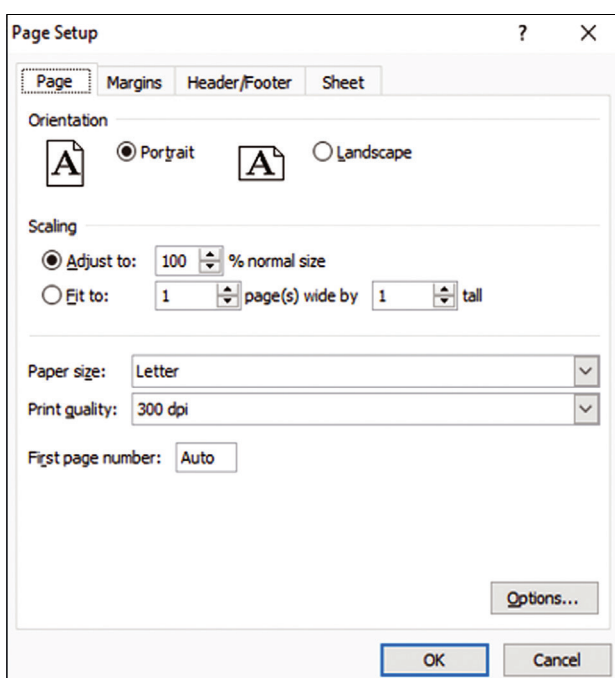
You can enlarge or reduce the proportional size of the printed by choosing percentage in the Adjust to % Normal Size.

Or

Sheet can fit to a specified number of Pages

Paper Size:

Paper Size can be any of the standard paper Size like Letter, A4...etc



Print Quality: It Specifies the number of DPI the printed characters would be.

Eg.200 dpi (Dots per Inches)

First Page Number: Auto

Margin Tab:

On the Margins Tab of the page setup dialog box, we can Specify the top, bottom, Left, Right Margins for your sheet as well as we can set the data centered Horizontally /Vertically/Both. We can also specify the Left Margins of Header & Footer.

Sheet Tab:

Sheet tab lets you to specify which data to appear on Printed Pages.



It also Specify whether to print grid lines, Row/Column Heading, Notes added to cells

Print Area: To Print the same region of Worksheet. Enter the range of cells to Print or drag over that range on worksheet while the pointer is on the Print Area text box.

If you don't want to specify range, we can select the portion of the sheet to print just before printing. Then choose to print the selection in the print dialog box.

We can also choose one or more rows/Columns to repeat on each page.

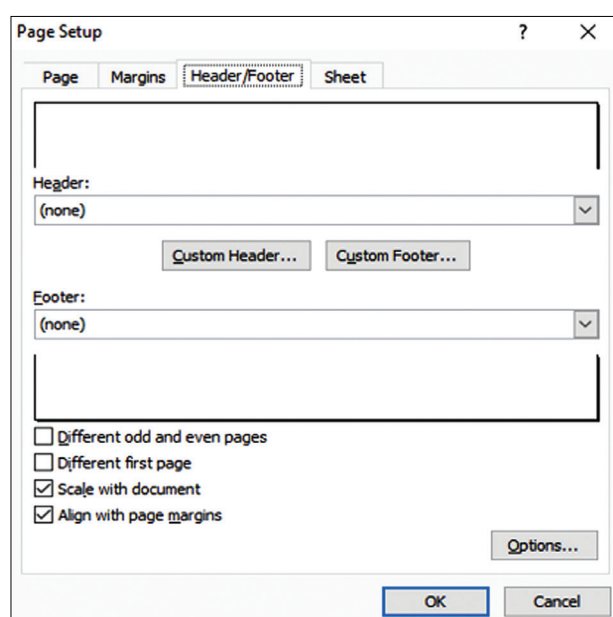
This feature helps us in identifying the data with the above row/column Labels.

Print Section defines to print grid lines, Row/Column Heading, Notes added to cells according to the selection in the check box

Header/Footer Tab:

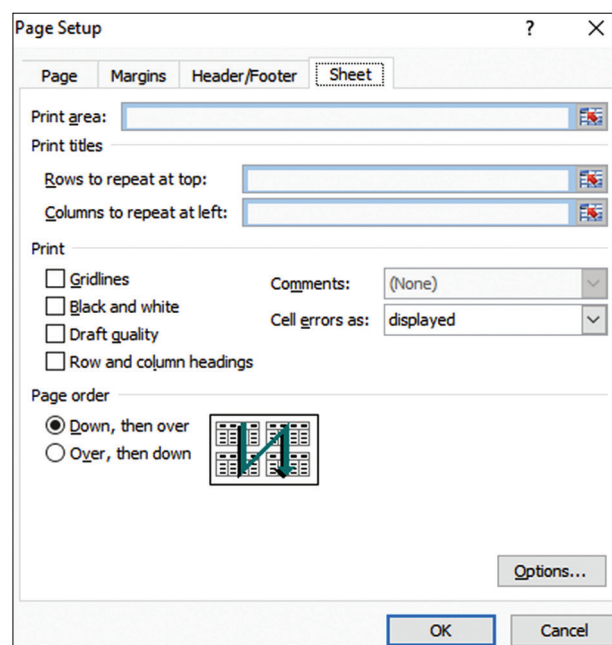
This Tab allows you to add header and/or footers to your printed pages.

Default Header is sheet name, Default footer is Page Number. We can add custom Header/Footer using the Custom Header/ Custom Footer Button.



Print:

It is used to create the physical copy of the created Worksheet



Steps to Print the Sheet:

1. Check the printer is turned on, is on-line and has Sufficient Paper in the tray of the printer.
2. Click on Office Button and Click Print (Ctrl+P). So that the Print dialog box will open.

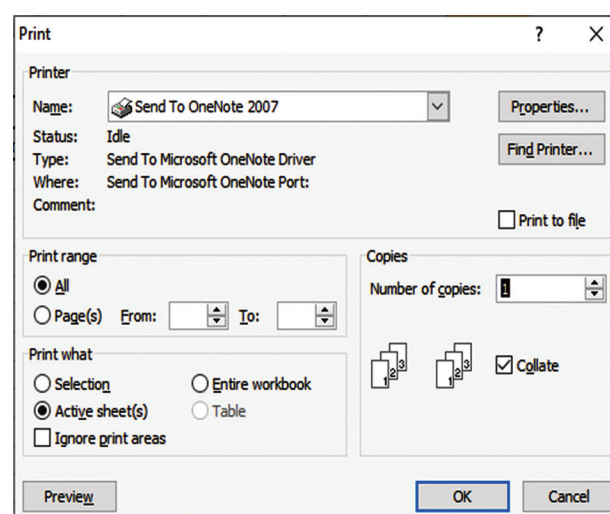
Set the following values as per requirement

Print What: This section specifies whether to print selection/Active sheet/Entire Workbook.

Copies: This section has the box to input number printed hard copy of the document required.

Print Range: Here we can select all pages / limited pages as per our requirement.

3. A message box will appear and show that the Excel is printing. Printed Papers will push out of the Printer.



Shortcuts for Various Activities in a spreadsheet.

Operation	Keyboard Shortcut
Open	Ctrl+O
Save	Ctrl+S
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Find	Ctrl+F
Replace	Ctrl+H
Print Preview	Ctrl+F2
Bold	Ctrl+B

Operation	Keyboard Shortcut
Italic	Ctrl+I
Underline	Ctrl+U
Select All	Ctrl+A
Go To	Ctrl+G
New	Ctrl+N
Print	Ctrl+P
Autosum	Alt+=
Table	Ctrl+T
Hyperlink	Ctrl+K
Insert Function	Shift+F3
Filter	Ctrl+Shift+L

Comparative Study of Excel and Google Sheet

Sl.No	Excel	Google Sheet
Differences		
1	Developer : Microsoft	Developer: Google
2	Mainly used for Solo User.	Mainly used for Team Work. (i.e., Collaboration)
3	In-Built Chat facility is not available	In-Built Chat facility is available
4	Internet is not necessary	Internet is Required
5	Local Storage is used to store Data	No Local Storage.Cloud Storage is used to Store Data
6	It is Operating System,Hardware Specific.	It can be open,edit in any system using a Browser.
7	Used mainly by Data Analysing & Data Handling Users	Used mainly for Collaboration & Data Handling
Similarity		
1	Data Handling Operation can be done	Data Handling Operation can be done(Limited Operations only)
2	Data Formatting Options are available	Data Formatting Options are available(Limited Operations only)
3	Calculations are Possible	Calculations are Possible(Limited Functions & Operations)
4	Charts are Available	Charts are Available(Limited Chart types)
5	Filtering & Sorting can be Done	Filtering & Sorting can be Done
6	Cloud Storage is available(One Drive)	Cloud Storage is available(Google Drive)
7	Shortcut Keys available	Shortcut Keys Available (Less number)

Software Used :

Microsoft Excel 2007 & Google Sheets.

Windows 10.

Ex.No:04. Spreadsheet Creation, Data handling, Formatting, Calculations using Formulae and Functions

Aim:

- To Create an Spreadsheet
- To do Data Handling Operation
- To Format the cells and data.
- To do Calculations using Formulae and Functions(Using Excel & Google Sheet)

Procedure:

- To Create a Spreadsheet with Data of Students in college.

Excel

Step 1: Switch on the Computer.

Step 2: Goto Start → Microsoft Office → Move Mouse Cursor above Microsoft Office Excel 2007 & Right Click to Open. A New Blank Workbook will Open.

Step 3: To Rename the Sheet: Right click on the default sheet name given by Excel in sheet tab . Click rename. Enter any name you prefer. (Eg. Student)

Step 4: Select any one Cell in the selected Sheet. For eg.A1 i.e., Column A and Row 1.

Step 5: Enter Headers Sr.No., Name, Gender, Department, Subject 1, Subject 2.... etc in the same row and Subsequent columnsie., B1, C1, D1....etc

Step 6: Enter Data below the Headers one by one.

Step 7: Go to File → Rename. Enter the Name for Eg.“PTC” The file will get saved automatically

Location : Note the location where file is saved

File name: Give any name(Eg.PTC)

Save as Type: Excel Workbook.

Step 8: Click Save

Output:

	A	B	C	D	E	F	G	H	I	J
1	Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5
2	1	AAA	Male	16	CSE	75	45	50	90	91
3	2	BBB	Female	15	CSE	45	54	53	89	90
4	3	CCC	Female	16	CSE	37	38	39	70	75
5	4	DDD	Female	17	CSE	45	50	67	AB	90
6	5	EEE	Male	16	CSE	59	53	60	70	75
7	6	FFF	Male	15	CSE	45	34	54	69	90
8	7	GGG	Female	18	CSE	54	67	67	91	90
9	8	HHH	Female	15	CSE	38	AB	70	80	82
10	9	III	Female	16	CSE	76	78	89	95	91
11	10	JJJ	Male	16	CSE	80	80	83	97	90
12	11	KKK	Male	16	CSE	AB	50	67	91	75
13	12	LLL	Female	16	CSE	39	AB	60	70	90
14	13	MMM	Female	16	CSE	50	39	54	69	75
15	14	NNN	Male	16	CSE	52	67	67	91	90

Google Sheet

Step 1: Switch on the Computer/Mobile with Internet Connection.

Step 2: Sign Into “sheets.google.com” with your Google Login Credentials. Click New +

Step 3: To Rename the Sheet. Right click on the default sheet name given by google sheet. Click rename from the pop up Menu. Enter any name you prefer.(Eg. Student)

Step 4: Select any one Cell in the Newly Created Sheet. For eg.A1 i.e., Column A and Row 1.

Step 5: Enter Headers Sr.No.Name,Gender,Department,Subject1,Subject2....etc in the same row and subsequent columnsie., B1,C1,D1....etc.

Step 6: Enter the Data below the Headers one by one.



Excel	Google Sheet																																																																																																																																																																																											
Result:Hence an Excel Workbook with Name_: “PTC.xlsx” Sheet Name “Student” with Headers Sr.No., Name, Gender, Department, Subject 1, Subject 2 & Data created	Step 7: Go to File → Rename. Enter the Name “PTC” The file will get saved automatically. Output: <table><tr><th></th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>I</th><th>J</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td>Sr.no</td><td>Name</td><td>Gender</td><td>Age</td><td>Department</td><td>Subject1</td><td>Subject2</td><td>Subject3</td><td>Subject4</td><td>Subject5</td></tr><tr><td>2</td><td>1</td><td>AAA</td><td>Male</td><td>16</td><td>CSE</td><td>75</td><td>45</td><td>50</td><td>90</td><td>91</td></tr><tr><td>3</td><td>2</td><td>BBB</td><td>Female</td><td>15</td><td>CSE</td><td>45</td><td>54</td><td>53</td><td>89</td><td>90</td></tr><tr><td>4</td><td>3</td><td>CCC</td><td>Female</td><td>16</td><td>CSE</td><td>37</td><td>38</td><td>39</td><td>70</td><td>75</td></tr><tr><td>5</td><td>4</td><td>DDD</td><td>Female</td><td>17</td><td>CSE</td><td>45</td><td>50</td><td>67</td><td>AB</td><td>90</td></tr><tr><td>6</td><td>5</td><td>EEE</td><td>Male</td><td>16</td><td>CSE</td><td>59</td><td>53</td><td>60</td><td>70</td><td>75</td></tr><tr><td>7</td><td>6</td><td>FFF</td><td>Male</td><td>15</td><td>CSE</td><td>45</td><td>34</td><td>54</td><td>69</td><td>90</td></tr><tr><td>8</td><td>7</td><td>GGG</td><td>Female</td><td>18</td><td>CSE</td><td>54</td><td>67</td><td>67</td><td>91</td><td>90</td></tr><tr><td>9</td><td>8</td><td>HHH</td><td>Female</td><td>15</td><td>CSE</td><td>38</td><td>AB</td><td>70</td><td>80</td><td>82</td></tr><tr><td>10</td><td>9</td><td>III</td><td>Female</td><td>16</td><td>CSE</td><td>76</td><td>78</td><td>89</td><td>95</td><td>91</td></tr><tr><td>11</td><td>10</td><td>JJJ</td><td>Male</td><td>16</td><td>CSE</td><td>80</td><td>80</td><td>83</td><td>97</td><td>90</td></tr><tr><td>12</td><td>11</td><td>KKK</td><td>Male</td><td>16</td><td>CSE</td><td>AB</td><td>50</td><td>67</td><td>91</td><td>75</td></tr><tr><td>13</td><td>12</td><td>LLL</td><td>Female</td><td>16</td><td>CSE</td><td>39</td><td>AB</td><td>60</td><td>70</td><td>90</td></tr><tr><td>14</td><td>13</td><td>MMM</td><td>Female</td><td>16</td><td>CSE</td><td>50</td><td>39</td><td>54</td><td>69</td><td>75</td></tr><tr><td>15</td><td>14</td><td>NNN</td><td>Male</td><td>16</td><td>CSE</td><td>52</td><td>67</td><td>67</td><td>91</td><td>90</td></tr></table> Result : Hence a Google Sheet with Name_: “PTC” Sheet Name “Student” with Headers Sr.No., Name, Gender, Department, Subject 1, Subject 2 & Data created.		A	B	C	D	E	F	G	H	I	J												1	Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5	2	1	AAA	Male	16	CSE	75	45	50	90	91	3	2	BBB	Female	15	CSE	45	54	53	89	90	4	3	CCC	Female	16	CSE	37	38	39	70	75	5	4	DDD	Female	17	CSE	45	50	67	AB	90	6	5	EEE	Male	16	CSE	59	53	60	70	75	7	6	FFF	Male	15	CSE	45	34	54	69	90	8	7	GGG	Female	18	CSE	54	67	67	91	90	9	8	HHH	Female	15	CSE	38	AB	70	80	82	10	9	III	Female	16	CSE	76	78	89	95	91	11	10	JJJ	Male	16	CSE	80	80	83	97	90	12	11	KKK	Male	16	CSE	AB	50	67	91	75	13	12	LLL	Female	16	CSE	39	AB	60	70	90	14	13	MMM	Female	16	CSE	50	39	54	69	75	15	14	NNN	Male	16	CSE	52	67	67	91	90
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ii) Data Handling:																																																																																																																																																																																												
Insert, delete, and update one Student record in the Existing “Student” Sheet.																																																																																																																																																																																												
To Open Workbook Step 1: Goto Office button on Top Left Corner → Click to get dropdown and Click Open Step 2: “Open Workbook Dialog Box” Will Open. Select the file created during Ex.04 (Eg.PTC.xlsx) / Create a Worksheet with Student data Step 3: To insert 1 Record: (15, LLL, Male, 18, CSE, 53, 57, 45, 91, 78) - Select any Cell where we need to insert the record. - On right Clicking the mouse a menu will Pop-up. - Select Insert from the Menu. - Now a sub menu with options “Shift Cells Right, Shift Cells down, Entire Row, Entire Column” will appear. - To insert a row, select “Entire row” menu item Enter the data to be inserted in the New Row & click OK Button - Press Ctrl+S Key to Save the Changes made	Step 1: Open the file Created in google Drive Step 2: To insert 1 Record: (15, LLL, Male, 18, CSE, 53, 57, 45, 91, 78) Click a cell then Right Click the Mouse. A menu will popup. In that select 1 row above. Enter the data to be inserted in the New Row. i.e., 15, LLL, Male, 18, CSE, 53, 57, 45, 91, 78 Step 3: To Delete the data of Student with Name “NNN”: Click a cell with Data “NNN” then Right Click the Mouse. A menu will pop up In that select Delete Row. Step 4: To Update the age of “KKK” as “17”: Double Click on the cell to update (i.e., Select the Cell beneath the Column with Header age and In the Row with Name of Student “KKK”). Enter the data “17” in the cell. Step 5: To Replace/Update Data Department “CSE” with “Computer Engineering”: Press Key Ctrl+H. The “Find and Replace” Dialog Box will Pop up.																																																																																																																																																																																											



Excel

Step 4: To Delete the data of Student with Name “NNN”:

- Select the Cell Containing data “NNN”.
- Then Right Click the mouse a menu will Pop-Up.
- From the Menu select “delete” .
- Now another Sub menu with options “Shift Cells right, Shift Cells down, Entire Row, and Entire Column” will occur.
- To delete 1Row, select the “Entire Row” option & click OK Button
- Press Ctrl+S Key to Save the Changes made

Step 5: To Update the age of “KKK” as “17”:

- Select the Cell beneath the Column with Header “age” and In the row with “Name of Student” as “KKK” where data to be updated.
- Then double click in the cell/ Press F2, Press delete/backspace to clear existing data and Enter New Data “17”.
- Press Ctrl+S Key to Save the Changes made

Step 6: To Replace/Update Data Department “CSE” with “Computer Engineering”:

- Press Key Ctrl+H. The “Find and Replace” Dialog Box will Pop up.

Step 7: In that dialog box, Enter “CSE” in “Find What” text box, “Computer Engineering” in “Replace With” Text Box. Click Replace All Button.

Step 8: Press Ctrl+S Key to Save the Changes made.

****This Step is very Important to save data. (Ctrl+S). Use the Shortcut Key to save the data after addition/deletion/updation of data**

Output:

	A	B	C	D	E	F	G	H	I	J
1	Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5
2	1	AAA	Male	16	Computer Engineering	75	45	50	90	91
3	2	BBB	Female	15	Computer Engineering	45	54	53	89	90
4	3	CCC	Female	16	Computer Engineering	37	38	39	70	75
5	4	DDD	Female	17	Computer Engineering	45	50	67	AB	90
6	5	EEE	Male	16	Computer Engineering	59	53	60	70	75
7	6	FFF	Male	15	Computer Engineering	45	34	54	69	90
8	7	GGG	Female	18	Computer Engineering	54	67	67	91	90
9	8	HHH	Female	15	Computer Engineering	38	AB	70	80	82
10	9	III	Female	16	Computer Engineering	76	78	89	95	91
11	10	JJJ	Male	16	Computer Engineering	80	80	83	97	90
12	11	KKK	Male	17	Computer Engineering	AB	50	67	91	75
13	12	LLL	Female	16	Computer Engineering	39	AB	60	70	90
14	13	MMM	Female	16	Computer Engineering	50	39	54	69	75
15	15	LLL	Male	18	Computer Engineering	53	57	45	91	78

Google Sheet

In That Enter CSE in Find What, Computer Engineering in Replace With Text Box. Click Replace All.

Step 6: The file will get saved automatically.

Output:

	A	B	C	D	E	F	G	H	I	J
1	Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5
2	1	AAA	Male	16	Computer Engineering	75	45	50	90	91
3	2	BBB	Female	15	Computer Engineering	45	54	53	89	90
4	3	CCC	Female	16	Computer Engineering	37	38	39	70	75
5	4	DDD	Female	17	Computer Engineering	45	50	67	AB	90
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14	13	MMM	Female	16	Computer Engineering	50	39	54	69	75
15	15	LLL	Male	18	Computer Engineering	53	57	45	91	78

Result: Hence in google sheet with Name PTC, SheetName : Student Insertion, deletion, Updation of data was done.

Result: Hence in Excel Workbook with Name PTC.xlsx, SheetName : Student Insertion, deletion, Updation of data was done.



Excel	Google Sheet																																																																																																																																																																																											
Highlight Student Mark in Green color who got Highest Mark in Subject1 & Red color for who got Lowest Mark in Subject 1. Make the Header Bold, Use Font: Arial, Font Size:12, Thick Border, Alignment: Center																																																																																																																																																																																												
Step 1: Open the workbook with Student details Step 2: Select the Subject1 Column Using Mouse. Step 3: In the Home → Styles → Conditional Formatting Select New Rule → “New Formatting rule Dialog Box” will open Step 4: Select the following option in the Dialog Box Select Rule Type: Format all cells based on their Values Edit the rule description: Format Style: 2 Color Scale Minimum: Type: Lowest Value ;Colour:Red Maximum: Type: Highest Value ;Colour:Green Step 5: Select the Header Text in the “Student” Sheet. Click Home Tab → Font sub Group →Click B button or Press key Ctrl+B Step 6: - Select all Cells with Data & Header. - Select Ctrl+Shift+F or Select Home Tab → Font Sub group. - Select Font Name = “Arial”, Font Size = 12 from list of options available - In Home Tab → Cells Subgroup → on Clicking Format Button a drop down will occur in that select Format Cells/Right click the mouse on a cell, a context menu appears in that click format cells - Format Cells dialog box will occur → In that select Border tab, Set Line Style = Thick Color: Black. - Select all Border line in preview diagram then Click OK.	Step 1: Switch on the Computer/Mobile with Internet Connection. Step 2: Open the file “PTC” stored in google Drive. Step 3: In the Menu →Format → Select Conditional Formatting →Conditional formatting rules window will open. Select Tab Color Scale. Set Following options Apply to Range: Enter the cells of data to be formatted(Cells Containing Marks of Subject1) Format rule Min Value & Color Max Value & Color Click Done Step 4: Select the Header Text. Click Format → Text → Click B or Ctrl+B Step 5: Select the Cells with Data. Select Format → Font Name = “Arial”, Font Size = 12, Step 6: In the Format Menu →Alignment → Select Text Alignment parameter Center; Middle; Output: <table><tr><th></th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>I</th><th>J</th></tr><tr><th></th><th>Sr.no</th><th>Name</th><th>Gender</th><th>Age</th><th>Department</th><th>Subject1</th><th>Subject2</th><th>Subject3</th><th>Subject4</th><th>Subject5</th></tr><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td>1</td><td>AAA</td><td>Male</td><td>16</td><td>Computer Engineering</td><td>75</td><td>45</td><td>50</td><td>90</td><td>91</td></tr><tr><td>3</td><td>2</td><td>BBB</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>45</td><td>54</td><td>53</td><td>89</td><td>90</td></tr><tr><td>4</td><td>3</td><td>CCC</td><td>Female</td><td>16</td><td>Computer Engineering</td><td>37</td><td>38</td><td>39</td><td>70</td><td>75</td></tr><tr><td>5</td><td>4</td><td>DDD</td><td>Female</td><td>17</td><td>Computer Engineering</td><td>45</td><td>50</td><td>67</td><td>AB</td><td>90</td></tr><tr><td>6</td><td>5</td><td>EEE</td><td>Male</td><td>16</td><td>Computer Engineering</td><td>59</td><td>53</td><td>60</td><td>70</td><td>75</td></tr><tr><td>7</td><td>6</td><td>FFF</td><td>Male</td><td>15</td><td>Computer Engineering</td><td>45</td><td>34</td><td>54</td><td>69</td><td>90</td></tr><tr><td>8</td><td>7</td><td>GGG</td><td>Female</td><td>18</td><td>Computer Engineering</td><td>54</td><td>67</td><td>67</td><td>91</td><td>90</td></tr><tr><td>9</td><td>8</td><td>HHH</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>38</td><td>AB</td><td>70</td><td>80</td><td>82</td></tr><tr><td>10</td><td>9</td><td>III</td><td>Female</td><td>16</td><td>Computer Engineering</td><td>76</td><td>78</td><td>89</td><td>95</td><td>91</td></tr><tr><td>11</td><td>10</td><td>JJJ</td><td>Male</td><td>16</td><td>Computer Engineering</td><td>80</td><td>80</td><td>83</td><td>97</td><td>90</td></tr><tr><td>12</td><td>11</td><td>KKK</td><td>Male</td><td>17</td><td>Computer Engineering</td><td>AB</td><td>50</td><td>67</td><td>91</td><td>75</td></tr><tr><td>13</td><td>12</td><td>LLL</td><td>Female</td><td>16</td><td>Computer Engineering</td><td>39</td><td>AB</td><td>60</td><td>70</td><td>90</td></tr><tr><td>14</td><td>13</td><td>MMM</td><td>Female</td><td>16</td><td>Computer Engineering</td><td>50</td><td>39</td><td>54</td><td>69</td><td>75</td></tr><tr><td>15</td><td>15</td><td>LLL</td><td>Male</td><td>18</td><td>Computer Engineering</td><td>53</td><td>57</td><td>45</td><td>91</td><td>78</td></tr></table> Result : Hence the formatting of Google sheet “Student” was done.		A	B	C	D	E	F	G	H	I	J		Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5	1											2	1	AAA	Male	16	Computer Engineering	75	45	50	90	91	3	2	BBB	Female	15	Computer Engineering	45	54	53	89	90	4	3	CCC	Female	16	Computer Engineering	37	38	39	70	75	5	4	DDD	Female	17	Computer Engineering	45	50	67	AB	90	6	5	EEE	Male	16	Computer Engineering	59	53	60	70	75	7	6	FFF	Male	15	Computer Engineering	45	34	54	69	90	8	7	GGG	Female	18	Computer Engineering	54	67	67	91	90	9	8	HHH	Female	15	Computer Engineering	38	AB	70	80	82	10	9	III	Female	16	Computer Engineering	76	78	89	95	91	11	10	JJJ	Male	16	Computer Engineering	80	80	83	97	90	12	11	KKK	Male	17	Computer Engineering	AB	50	67	91	75	13	12	LLL	Female	16	Computer Engineering	39	AB	60	70	90	14	13	MMM	Female	16	Computer Engineering	50	39	54	69	75	15	15	LLL	Male	18	Computer Engineering	53	57	45	91	78
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In the Alignment Tab in Format Cells Dialog Box Set the text alignment parameter Horizontal: center; Vertical:center; In Border tab Set Line Style = Thick Color: Black. Select all Border line in Preview Diagram then Click OK. In the Alignment Tab Set Text Alignment parameter Horizontal:center;Vertical:center; Output: <table><tr><th></th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>I</th><th>J</th></tr><tr><th></th><th>Sr.no</th><th>Name</th><th>Gender</th><th>Age</th><th>Department</th><th>Subject1</th><th>Subject2</th><th>Subject3</th><th>Subject4</th><th>Subject5</th></tr><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td>1</td><td>AAA</td><td>Male</td><td>16</td><td>Computer Engineering</td><td>75</td><td>45</td><td>50</td><td>90</td><td>91</td></tr><tr><td>3</td><td>2</td><td>BBB</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>45</td><td>54</td><td>53</td><td>89</td><td>90</td></tr><tr><td>4</td><td>3</td><td>CCC</td><td>Female</td><td>16</td><td>Computer Engineering</td><td>37</td><td>38</td><td>39</td><td>70</td><td>75</td></tr><tr><td>5</td><td>4</td><td>DDD</td><td>Female</td><td>17</td><td>Computer Engineering</td><td>45</td><td>50</td><td>67</td><td>AB</td><td>90</td></tr><tr><td>6</td><td>5</td><td>EEE</td><td>Male</td><td>16</td><td>Computer Engineering</td><td>59</td><td>53</td><td>60</td><td>70</td><td>75</td></tr><tr><td>7</td><td>6</td><td>FFF</td><td>Male</td><td>15</td><td>Computer Engineering</td><td>45</td><td>34</td><td>54</td><td>69</td><td>90</td></tr><tr><td>8</td><td>7</td><td>GGG</td><td>Female</td><td>18</td><td>Computer Engineering</td><td>54</td><td>67</td><td>67</td><td>91</td><td>90</td></tr><tr><td>9</td><td>8</td><td>HHH</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>38</td><td>AB</td><td>70</td><td>80</td><td>82</td></tr><tr><td>10</td><td>9</td><td>III</td><td>Female</td><td>16</td><td>Computer Engineering</td><td>76</td><td>78</td><td>89</td><td>95</td><td>91</td></tr><tr><td>11</td><td>10</td><td>JJJ</td><td>Male</td><td>16</td><td>Computer Engineering</td><td>80</td><td>80</td><td>83</td><td>97</td><td>90</td></tr><tr><td>12</td><td>11</td><td>KKK</td><td>Male</td><td>17</td><td>Computer Engineering</td><td>AB</td><td>50</td><td>67</td><td>91</td><td>75</td></tr><tr><td>13</td><td>12</td><td>LLL</td><td>Female</td><td>16</td><td>Computer Engineering</td><td>39</td><td>AB</td><td>60</td><td>70</td><td>90</td></tr><tr><td>14</td><td>13</td><td>MMM</td><td>Female</td><td>16</td><td>Computer Engineering</td><td>50</td><td>39</td><td>54</td><td>69</td><td>75</td></tr><tr><td>15</td><td>15</td><td>LLL</td><td>Male</td><td>18</td><td>Computer Engineering</td><td>53</td><td>57</td><td>45</td><td>91</td><td>78</td></tr></table> Result : Hence the data and cell in the excel sheet “Student” was formatted		A	B	C	D	E	F	G	H	I	J		Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5	1											2	1	AAA	Male	16	Computer Engineering	75	45	50	90	91	3	2	BBB	Female	15	Computer Engineering	45	54	53	89	90	4	3	CCC	Female	16	Computer Engineering	37	38	39	70	75	5	4	DDD	Female	17	Computer Engineering	45	50	67	AB	90	6	5	EEE	Male	16	Computer Engineering	59	53	60	70	75	7	6	FFF	Male	15	Computer Engineering	45	34	54	69	90	8	7	GGG	Female	18	Computer Engineering	54	67	67	91	90	9	8	HHH	Female	15	Computer Engineering	38	AB	70	80	82	10	9	III	Female	16	Computer Engineering	76	78	89	95	91	11	10	JJJ	Male	16	Computer Engineering	80	80	83	97	90	12	11	KKK	Male	17	Computer Engineering	AB	50	67	91	75	13	12	LLL	Female	16	Computer Engineering	39	AB	60	70	90	14	13	MMM	Female	16	Computer Engineering	50	39	54	69	75	15	15	LLL	Male	18	Computer Engineering	53	57	45	91	78	
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Calculate Total, Average, No of Subjects (Absent), Maximum, Minimum using Functions and percentage using Formulae																																																																																																																																																																																												
Step 1: Open the workbook with Student details Step 2: Add a new Column “Total” after “Subject5” Step 3: All Excel formulas and Functions start with an = sign, followed by the function name/Formulae and a section in parentheses to provide ranges or arguments. You can type your range in, or you can select it using your mouse or input device. - Select the Second Cell in newly created Column “Total”. - Type the formula in the formula bar “=SUM(Cell Range)” and Press Enter. The function output displays in the cell. - Use Mouse to Select the Result Cell, Click hold fill handle and drag to fill formula in the cells beneath that till last row.	Step 1: Open the file “PTC” Created in google Drive. Step 2: Add a new Column “Total” after “Subject 5”. Step 3: Select the Second Cell in newly created Column. Type = SUM(Cell Range) - Select the Second Cell in newly created Column “Total”. - Type the formula in the formula bar “=SUM(Cell Range)” and Press Enter. The function output displays in the cell. - Use Mouse to Select the Result Cell, Click hold fill handle and drag to fill formula in the cells beneath that till last row.																																																																																																																																																																																											



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Cell Range is range of cell in which relevant data available -F2:J2 Step 5: Using the same method as in Step 3, you can calculate the Percentage of Marks in Another Column using Formulae Percentage "= (Cell with Total Marks secure by student/Sum of Maximum Marks of all subject) *100%" For eg. = (K2/500) *100% Output: <table><tr><th>Sr.no</th><th>Name</th><th>Gender</th><th>Age</th><th>Department</th><th>Subject1</th><th>Subject2</th><th>Subject3</th><th>Subject4</th><th>Subject5</th><th>Total</th><th>No of Subjects (Absent)</th><th>Maximum</th><th>Minimum</th><th>Average</th></tr><tr><td>1</td><td>AAA</td><td>Male</td><td>15</td><td>Computer Engineering</td><td>75</td><td>45</td><td>50</td><td>60</td><td>91</td><td>351</td><td>0</td><td>91</td><td>45</td><td>70.2</td></tr><tr><td>2</td><td>BBB</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>45</td><td>54</td><td>53</td><td>88</td><td>90</td><td>331</td><td>0</td><td>90</td><td>45</td><td>66.2</td></tr><tr><td>3</td><td>CCC</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>37</td><td>38</td><td>39</td><td>70</td><td>75</td><td>259</td><td>0</td><td>75</td><td>37</td><td>51.8</td></tr><tr><td>4</td><td>DDD</td><td>Female</td><td>17</td><td>Computer Engineering</td><td>45</td><td>50</td><td>67</td><td>AB</td><td>90</td><td>252</td><td>1</td><td>90</td><td>45</td><td>63</td></tr><tr><td>5</td><td>EEE</td><td>Male</td><td>15</td><td>Computer Engineering</td><td>55</td><td>53</td><td>50</td><td>70</td><td>75</td><td>313</td><td>0</td><td>75</td><td>53</td><td>63.4</td></tr><tr><td>6</td><td>FFF</td><td>Male</td><td>15</td><td>Computer Engineering</td><td>45</td><td>34</td><td>54</td><td>69</td><td>90</td><td>292</td><td>0</td><td>90</td><td>34</td><td>59.4</td></tr><tr><td>7</td><td>GGG</td><td>Female</td><td>18</td><td>Computer Engineering</td><td>54</td><td>67</td><td>67</td><td>91</td><td>90</td><td>369</td><td>0</td><td>91</td><td>54</td><td>73.8</td></tr><tr><td>8</td><td>HHH</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>35</td><td>45</td><td>70</td><td>80</td><td>82</td><td>272</td><td>1</td><td>82</td><td>35</td><td>64.4</td></tr><tr><td>9</td><td>III</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>75</td><td>78</td><td>89</td><td>95</td><td>91</td><td>429</td><td>0</td><td>95</td><td>75</td><td>85.8</td></tr><tr><td>10</td><td>JJJ</td><td>Male</td><td>15</td><td>Computer Engineering</td><td>60</td><td>80</td><td>83</td><td>97</td><td>90</td><td>430</td><td>0</td><td>97</td><td>60</td><td>86</td></tr><tr><td>11</td><td>KKK</td><td>Male</td><td>17</td><td>Computer Engineering</td><td>48</td><td>49</td><td>50</td><td>67</td><td>91</td><td>285</td><td>1</td><td>91</td><td>48</td><td>70.2</td></tr><tr><td>12</td><td>LLL</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>30</td><td>AB</td><td>50</td><td>70</td><td>90</td><td>250</td><td>1</td><td>90</td><td>30</td><td>64.75</td></tr><tr><td>13</td><td>MMM</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>50</td><td>39</td><td>54</td><td>69</td><td>75</td><td>287</td><td>0</td><td>75</td><td>39</td><td>57.4</td></tr><tr><td>14</td><td>NNN</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>45</td><td>54</td><td>55</td><td>69</td><td>90</td><td>313</td><td>0</td><td>90</td><td>45</td><td>63.4</td></tr><tr><td>15</td><td>LLL</td><td>Male</td><td>18</td><td>Computer Engineering</td><td>55</td><td>57</td><td>45</td><td>91</td><td>78</td><td>326</td><td>0</td><td>91</td><td>45</td><td>64.8</td></tr></table>	Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5	Total	No of Subjects (Absent)	Maximum	Minimum	Average	1	AAA	Male	15	Computer Engineering	75	45	50	60	91	351	0	91	45	70.2	2	BBB	Female	15	Computer 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6	FFF	Male	15	Computer Engineering	45	34	54	69	90	292	0	90	34	59.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
7	GGG	Female	18	Computer Engineering	54	67	67	91	90	369	0	91	54	73.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
8	HHH	Female	15	Computer Engineering	35	45	70	80	82	272	1	82	35	64.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
9	III	Female	15	Computer Engineering	75	78	89	95	91	429	0	95	75	85.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
10	JJJ	Male	15	Computer Engineering	60	80	83	97	90	430	0	97	60	86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
11	KKK	Male	17	Computer Engineering	48	49	50	67	91	285	1	91	48	70.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
12	LLL	Female	15	Computer Engineering	30	AB	50	70	90	250	1	90	30	64.75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
13	MMM	Female	15	Computer Engineering	50	39	54	69	75	287	0	75	39	57.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
14	NNN	Female	15	Computer Engineering	45	54	55	69	90	313	0	90	45	63.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
15	LLL	Male	18	Computer Engineering	55	57	45	91	78	326	0	91	45	64.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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1	AAA	Male	15	Computer Engineering	75	45	50	60	91	351	0	91	45	70.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
2	BBB	Female	15	Computer Engineering	45	54	53	88	90	331	0	90	45	66.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
3	CCC	Female	15	Computer Engineering	37	38	39	70	75	259	0	75	37	51.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
4	DDD	Female	17	Computer Engineering	45	50	67	AB	90	252	1	90	45	63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
5	EEE	Male	15	Computer Engineering	55	53	50	70	75	313	0	75	53	63.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
6	FFF	Male	15	Computer Engineering	45	34	54	69	90	292	0	90	34	59.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
7	GGG	Female	18	Computer Engineering	54	67	67	91	90	369	0	91	54	73.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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10	JJJ	Male	15	Computer Engineering	60	80	83	97	90	430	0	97	60	86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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15	LLL	Male	18	Computer Engineering	55	57	45	91	78	324	0	91	45	64.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Ex.No.05 : Sorting, Filtering and creation of different Charts, Print Preview, Printing																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Aim: To (i) Sort, (ii) Filter, (iii) Creation of different Charts, (iv) Print Preview, (v) Printing of data on given Worksheet																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Filter/Select all Male Student in the department.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Step 1: Open the workbook with Student details Step 2: Select the Gender Column Using Mouse. Step 3: Go to Data Tab → Click filter button from Sort and filter Sub Group. A filter control appears next to the column heading. Click the filter Control. Filter menu occurs It will display the unique values in the Column. From that select "Male" & Click OK button	Step 1: Switch on the Computer/Mobile with Internet Connection. Step 2: Open the file Created in google Drive. Step 3: Select the Gender Column Using Mouse																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																



Output:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5	Total	No of Subjects (Absent)	Max	Min	Average	
1	1	AAA	Male	16	Computer Engineering	75	45	50	90	91	351	0	91	45	70.2	
2	5	EEE	Male	16	Computer Engineering	59	53	60	70	75	317	0	75	53	63.4	
3	6	FFF	Male	15	Computer Engineering	45	34	54	89	90	292	0	90	34	58.4	
4	10	JJJ	Male	16	Computer Engineering	80	80	83	97	90	430	0	97	80	86	
5	11	KKK	Male	17	Computer Engineering	AB	50	67	91	75	283	1	91	50	70.75	
6	15	LLL	Male	18	Computer Engineering	53	57	45	91	78	324	0	91	45	64.8	

Google Sheet

Step 4: Go to Data → Click Create filter. A dropdown list icon will be created. Click the dropdown list. It will display the unique values. From that deselect "Female".

Output:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5	Total	No of Subjects (Absent)	Max	Min	Average	
1	1	AAA	Male	16	Computer Engineering	75	45	50	90	91	351	0	91	45	70.2	
2	5	EEE	Male	16	Computer Engineering	59	53	60	70	75	317	0	75	53	63.4	
3	6	FFF	Male	15	Computer Engineering	45	34	54	89	90	292	0	90	34	58.4	
4	10	JJJ	Male	16	Computer Engineering	80	80	83	97	90	430	0	97	80	86	
5	11	KKK	Male	17	Computer Engineering	AB	50	67	91	75	283	1	91	50	70.75	
6	15	LLL	Male	18	Computer Engineering	53	57	45	91	78	324	0	91	45	64.8	

Filter/Select all Students whose Total is between 300 to 400

Step 4: Select the Total column.

Step 5: Go to Data Tab → Click filter button. A dropdown list will be created.

A filter control appears next to the column heading. Click the filter Control. It will display a menu in that select number filter.

Another Menu will open in that select "between". A custom Auto filter dialog box will popup.

In that dialog box Set following values for Parameters Show rows where

Total is greater than or equal to: **300**

Select option: **and**

Is less than or equal to : **400** and Click Ok

Output:

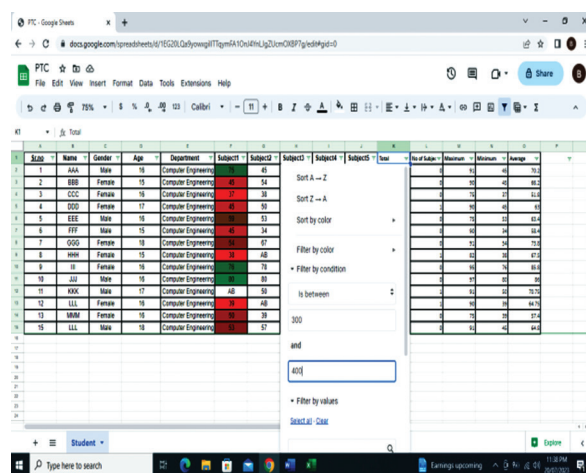
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5	Total	No of Subjects (Absent)	Max	Min	Average	
1	1	AAA	Male	16	Computer Engineering	75	45	50	90	91	351	0	91	45	70.2	
2	2	BBB	Female	15	Computer Engineering	45	54	53	89	90	331	0	90	45	66.2	
3	5	EEE	Male	16	Computer Engineering	59	53	60	70	75	317	0	75	53	63.4	
4	7	GGG	Female	18	Computer Engineering	54	67	67	91	90	369	0	91	54	73.8	
5	15	LLL	Male	18	Computer Engineering	53	57	45	91	78	324	0	91	45	64.8	

Step 5: Select the Total column.

Step 6: Go to Data → Click create filter. A dropdown list will be created. Click the dropdown list. It will display a menu in that select filter by Condition.

A new box below menu with list of Conditions will be available in that select "is Between" now 2 more box will open.

In that box Enter 300 and 400.

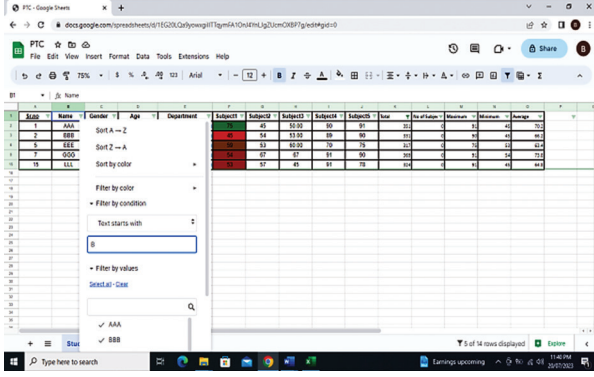


And Click Ok

Output:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5	Total	No of Subjects (Absent)	Max	Min	Average	
1	1	AAA	Male	16	Computer Engineering	75	45	50	90	91	351	0	91	45	70.2	
2	2	BBB	Female	15	Computer Engineering	45	54	53	89	90	331	0	90	45	66.2	
3	5	EEE	Male	16	Computer Engineering	59	53	60	70	75	317	0	75	53	63.4	
4	7	GGG	Female	18	Computer Engineering	54	67	67	91	90	369	0	91	54	73.8	
5	15	LLL	Male	18	Computer Engineering	53	57	45	91	78	324	0	91	45	64.8	

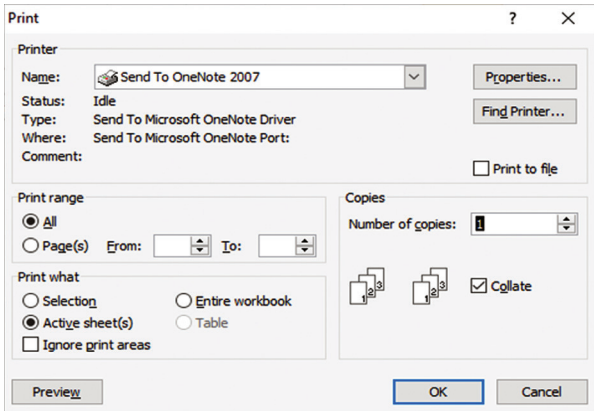
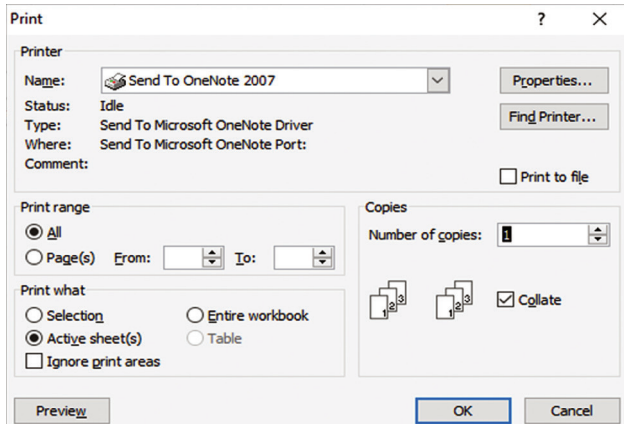


Excel														Google Sheet																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Filter/Select all Students whose name starts with 'B'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Step 7: Select the Name column. Step 8: Go to Data → Click filter. A dropdown list will be created. A filter control appears next to the column heading. Click the filter Control. It will display a menu in that select Text filter. Another Menu will open, in that menu select "Begins With". A custom Auto filter dialog box will popup. Show rows where Name Begins with : Enter the value B and Click Ok Output: <table border="1"><thead><tr><th>Sr.no</th><th>Name</th><th>Gender</th><th>Age</th><th>Department</th><th>Subject1</th><th>Subject2</th><th>Subject3</th><th>Subject4</th><th>Subject5</th><th>Total</th><th>No of Subjects (Absent)</th><th>Maximum</th><th>Minimum</th><th>Average</th></tr></thead><tbody><tr><td>2</td><td>BBB</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>45</td><td>54</td><td>53</td><td>89</td><td>90</td><td>331</td><td>0</td><td>90</td><td>45</td><td>66.2</td></tr></tbody></table>														Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5	Total	No of Subjects (Absent)	Maximum	Minimum	Average	2	BBB	Female	15	Computer Engineering	45	54	53	89	90	331	0	90	45	66.2	Step 7: Select the Name column. Step 8: Go to Data → Click filter. A dropdown list will be created. Click the dropdown list. It will display a menu in that select filter by Condition. A Drop down box with list of Conditions will be available in that select "Text Contains" now Another box will open Enter B in the box  And Click Ok Output: <table border="1"><thead><tr><th>Sr.no</th><th>Name</th><th>Gender</th><th>Age</th><th>Department</th><th>Subject1</th><th>Subject2</th><th>Subject3</th><th>Subject4</th><th>Subject5</th><th>Total</th><th>No of Subjects (Absent)</th><th>Maximum</th><th>Minimum</th><th>Average</th></tr></thead><tbody><tr><td>2</td><td>BBB</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>45</td><td>54</td><td>53</td><td>89</td><td>90</td><td>331</td><td>0</td><td>90</td><td>45</td><td>66.2</td></tr></tbody></table>														Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5	Total	No of Subjects (Absent)	Maximum	Minimum	Average	2	BBB	Female	15	Computer Engineering	45	54	53	89	90	331	0	90	45	66.2																																																																																																																																																																																																																																																																																																																																																																																																		
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Sort/Arrange the Students Based on Total and Age																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Step 9: Select the Department column. Go to Data → Click Sort button on Sort and Filter Group. Sort Dialog box will popup. In that Set following Parameter Sort by: Total Sort on: Values Click Add Level In that Set Then by: Age Sorton: Values Click Ok Output: <table border="1"><thead><tr><th>Sr.no</th><th>Name</th><th>Gender</th><th>Age</th><th>Department</th><th>Subject1</th><th>Subject2</th><th>Subject3</th><th>Subject4</th><th>Subject5</th><th>Total</th><th>No of Subjects (Absent)</th><th>Maximum</th><th>Minimum</th><th>Average</th></tr></thead><tbody><tr><td>2</td><td>JJJ</td><td>Male</td><td>18</td><td>Computer Engineering</td><td>80</td><td>80</td><td>83</td><td>97</td><td>90</td><td>430</td><td>0</td><td>97</td><td>80</td><td>88</td></tr><tr><td>9</td><td>III</td><td>Female</td><td>18</td><td>Computer Engineering</td><td>78</td><td>89</td><td>95</td><td>91</td><td>429</td><td>0</td><td>95</td><td>78</td><td>88.3</td></tr><tr><td>4</td><td>GGG</td><td>Female</td><td>18</td><td>Computer Engineering</td><td>57</td><td>67</td><td>91</td><td>90</td><td>385</td><td>0</td><td>91</td><td>54</td><td>78.8</td></tr><tr><td>1</td><td>AAA</td><td>Male</td><td>16</td><td>Computer Engineering</td><td>45</td><td>50</td><td>90</td><td>91</td><td>376</td><td>0</td><td>91</td><td>45</td><td>70.2</td></tr><tr><td>2</td><td>BBB</td><td>Female</td><td>15</td><td>Computer Engineering</td><td>45</td><td>54</td><td>53</td><td>89</td><td>90</td><td>331</td><td>0</td><td>90</td><td>45</td><td>66.2</td></tr><tr><td>7</td><td>LLL</td><td>Male</td><td>18</td><td>Computer Engineering</td><td>53</td><td>57</td><td>45</td><td>91</td><td>78</td><td>324</td><td>0</td><td>91</td><td>45</td><td>64.8</td></tr><tr><td>8</td><td>EEE</td><td>Male</td><td>16</td><td>Computer Engineering</td><td>50</td><td>53</td><td>60</td><td>70</td><td>75</td><td>317</td><td>0</td><td>75</td><td>53</td><td>61.8</td></tr><tr><td>6</td><td>FFF</td><td>Male</td><td>15</td><td>Computer Engineering</td><td>45</td><td>34</td><td>54</td><td>69</td><td>90</td><td>292</td><td>0</td><td>90</td><td>34</td><td>61.4</td></tr><tr><td>13</td><td>MMM</td><td>Female</td><td>16</td><td>Computer Engineering</td><td>39</td><td>39</td><td>54</td><td>69</td><td>75</td><td>275</td><td>0</td><td>75</td><td>39</td><td>57.4</td></tr><tr><td>11</td><td>KKK</td><td>Male</td><td>17</td><td>Computer Engineering</td><td>69</td><td>60</td><td>67</td><td>91</td><td>75</td><td>362</td><td>1</td><td>91</td><td>60</td><td>70.75</td></tr><tr><td>12</td><td>HHH</td><td>Female</td><td>19</td><td>Computer Engineering</td><td>78</td><td>AB</td><td>70</td><td>80</td><td>82</td><td>310</td><td>1</td><td>82</td><td>70</td><td>67.3</td></tr><tr><td>3</td><td>CCC</td><td>Female</td><td>16</td><td>Computer Engineering</td><td>37</td><td>38</td><td>39</td><td>70</td><td>75</td><td>259</td><td>0</td><td>75</td><td>37</td><td>51.8</td></tr><tr><td>14</td><td>LLL</td><td>Female</td><td>16</td><td>Computer Engineering</td><td>46</td><td>AB</td><td>69</td><td>70</td><td>90</td><td>285</td><td>1</td><td>90</td><td>69</td><td>64.75</td></tr><tr><td>15</td><td>4</td><td>DDD</td><td>Female</td><td>17</td><td>Computer Engineering</td><td>45</td><td>50</td><td>67</td><td>AB</td><td>90</td><td>253</td><td>1</td><td>90</td><td>49</td><td>63</td></tr></tbody></table>														Sr.no	Name	Gender	Age	Department	Subject1	Subject2	Subject3	Subject4	Subject5	Total	No of Subjects (Absent)	Maximum	Minimum	Average	2	JJJ	Male	18	Computer Engineering	80	80	83	97	90	430	0	97	80	88	9	III	Female	18	Computer Engineering	78	89	95	91	429	0	95	78	88.3	4	GGG	Female	18	Computer Engineering	57	67	91	90	385	0	91	54	78.8	1	AAA	Male	16	Computer Engineering	45	50	90	91	376	0	91	45	70.2	2	BBB	Female	15	Computer Engineering	45	54	53	89	90	331	0	90	45	66.2	7	LLL	Male	18	Computer Engineering	53	57	45	91	78	324	0	91	45	64.8	8	EEE	Male	16	Computer Engineering	50	53	60	70	75	317	0	75	53	61.8	6	FFF	Male	15	Computer Engineering	45	34	54	69	90	292	0	90	34	61.4	13	MMM	Female	16	Computer Engineering	39	39	54	69	75	275	0	75	39	57.4	11	KKK	Male	17	Computer Engineering	69	60	67	91	75	362	1	91	60	70.75	12	HHH	Female	19	Computer Engineering	78	AB	70	80	82	310	1	82	70	67.3	3	CCC	Female	16	Computer Engineering	37	38	39	70	75	259	0	75	37	51.8	14	LLL	Female	16	Computer Engineering	46	AB	69	70	90	285	1	90	69	64.75	15	4	DDD	Female	17	Computer Engineering	45	50	67	AB	90	253	1	90	49	63	Step 9: Select the Header along with data. Go to Data → Click Sort Range → Advanced Range sorting options. Sort Range Dialog box will popup. In that select the option Data has Header Row. 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Excel	Google Sheet								
iii) Creation of Charts									
Display the Gender Ratio in Computer Department using Pie Chart(Embedded)									
Step 10: Count the Male, Female Students in the Department. Step 11: Summarize the data beneath the existing Student Details Data <table><tr><td>Male</td><td>6</td></tr><tr><td>Female</td><td>8</td></tr></table> Step 12: Select the Summarized Data. Go to Insert → Charts Subsection → Click Pie → Select first Chart Type in 2D Pie. Embedded Chart get displayed in the Same Sheet Step 13: Select the Embedded Chart by clicking on the Chart. So that Chart tools Menu will get displayed. Step 14: Goto Layout Menu → Click Chart Title → Select Above Chart. Step 15: Change the default Chart Title in the Chart with “Gender Ratio” Step 16: Goto Layout Menu → Click Data Labels → Click More Data Label Option from dropdown List. Step 17: Format Data Labels Dialog box will popup. In that Label Contains Subsection Select Category Name, Percentage & Label Position: Center. Click Close. The Chart Will contain the Category & Percentage at Center Output:	Male	6	Female	8	Step 10: Count the Male, Female Students in the Department. Step 11: Summarize the data beneath the existing Student Details Data <table><tr><td>Male</td><td>6</td></tr><tr><td>Female</td><td>8</td></tr></table> Step 12: Select the Summarized Data. Go to Insert → Chart An Embedded Chart & Chart Editor will be opened in the Same Sheet. Step 13: In the Chart Editor we can Select Chart Type : Pie Chart Step 14: Goto Customize Tab in Chart Editor → Select Chart and Axis Title In the List box Displayed Select “Chart Title” and Enter the Title “Gender Ratio” in the Box Below Label Title Text. Step 15: Goto Customize Tab in Chart Editor → Select Legend Set Position as Labeled Output:	Male	6	Female	8
Male	6								
Female	8								
Male	6								
Female	8								
iv) Print Preview:									
Using Print Preview check whether the all data are within the Margin. Margin width is equal in all side.									



Excel	Google Sheet
Step 18: Click Office Button → Click Print → Select Print Preview. Step 19: In the Preview Page. Click Print Preview and select the option Show Margins. Step 20: If any side of data is outside border adjust it using Mouse Step 21: Go to Page Setup. Select the margins TAB and Set all borders of equal width. (i.e., Top :1”, Bottom = 1”, Left = 1”, Right = 1”	Step 16: Go to File → Print. It will show the Preview and Margins. Step 17: In the Margins Drop Down Select Custom Numbers. Change the width Equal in all side. (i.e.,1” in all sides of Preview Page.
v) Print: Print 2 Copies of all pages in Landscape orientation.	
Step 22: Click Office Button → Click Print → Select Print Preview. Step 23: In the Preview Page Go to Page Setup. Select the Page TAB and Set Orientation to Landscape. Step 24: In the Preview Page .Click Print. Step 25: In the Pop up Print dialog box. Select the Local Printer Name Enter Number of Copies to 2& Click Ok Output: 	Step 18: Go to File →Print. It will show the Preview. Step 19: In the Page Select the Page Orientation to Landscape. Click Next. Step 20: In the Pop up Print dialog box. Select the Local Printer Name Enter Number of Copies to 2 & Click Ok Output: 
Result : Hence an Excel Workbook Sorting, Filtering,Chart creation, Print Preview, Printing of data on given Worksheet were done.	Result : Hence using google sheet Sorting, Filtering,Chart creation, Print Preview, Printing of sheet were done.





UNIT IV

INFORMATION PRESENTATION

Information presentation refers to the process of conveying and organizing information in a way that is clear, engaging, and easily understandable to the intended audience. Information presentation can take various forms, including oral presentations, written reports, slide decks, infographics, interactive websites, and multimedia content. The choice of presentation format depends on the nature of the information, the audience, and the desired outcome.

MS POWERPOINT:

Microsoft PowerPoint is a widely used software application for creating and delivering presentations. Here is an introduction to PowerPoint and its benefits:

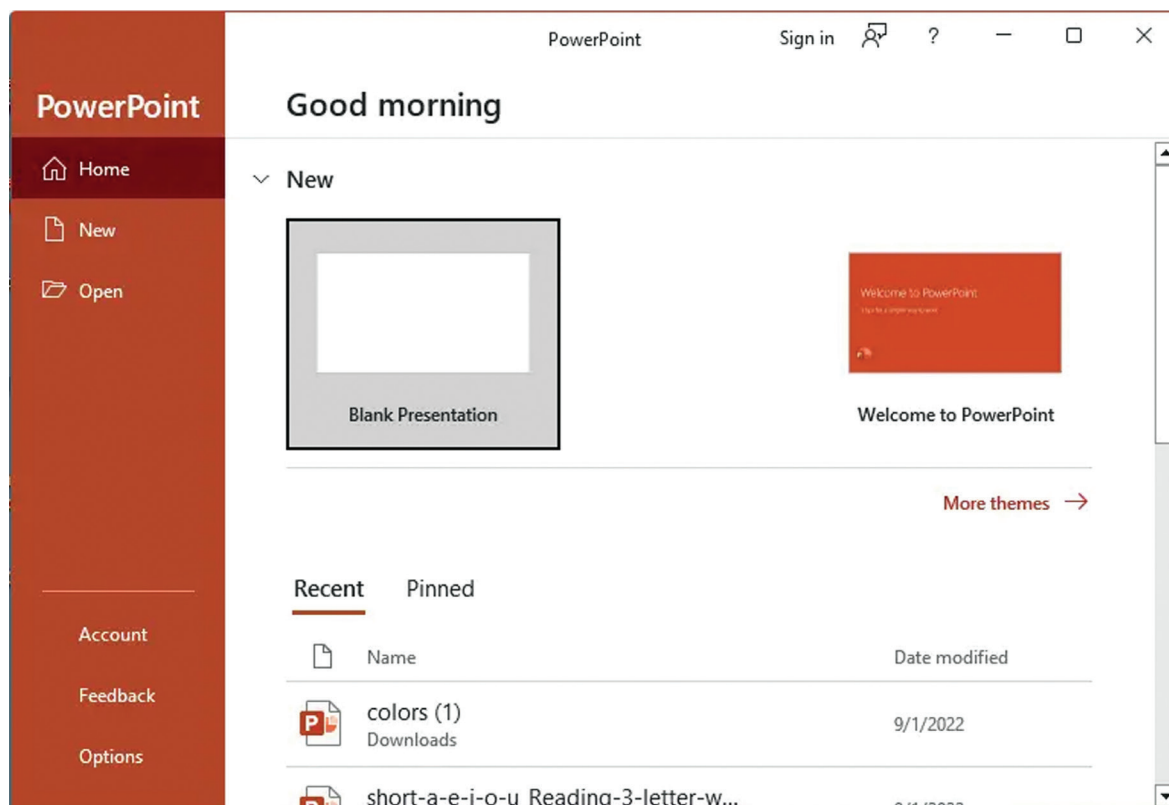
Presentation Creation: PowerPoint allows users to create visually appealing and professional-looking presentations with ease.

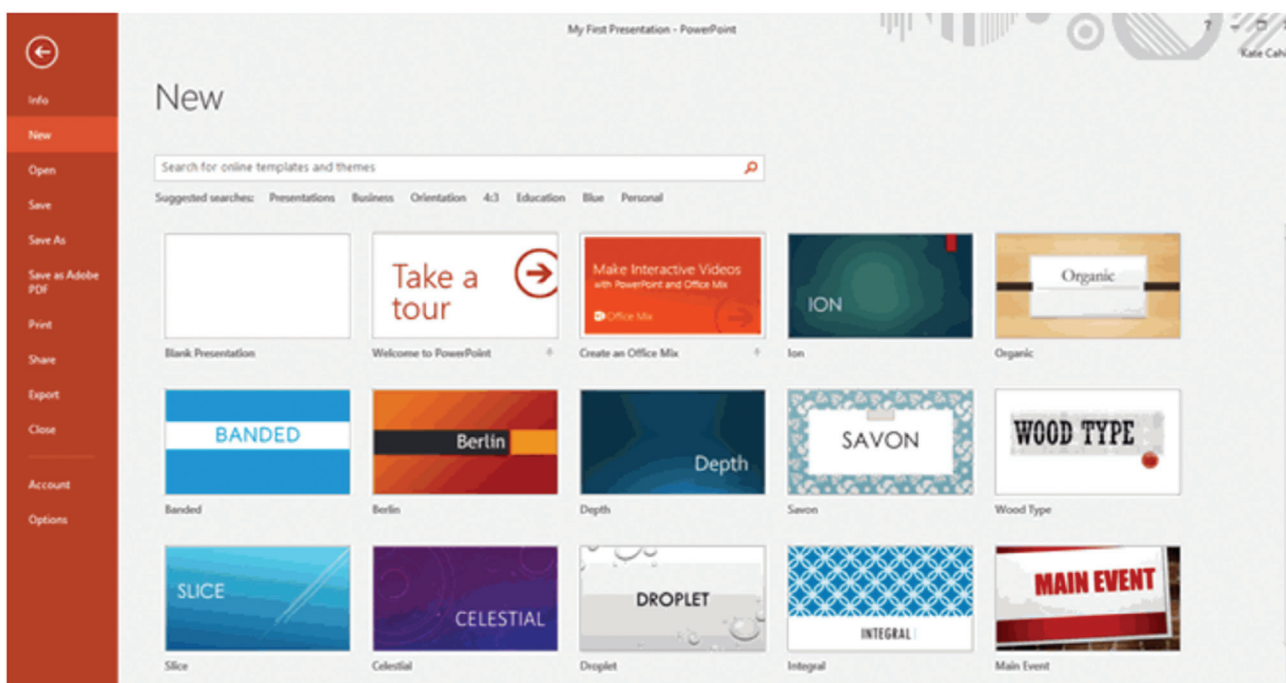
Visual Enhancements: PowerPoint enables the integration of multimedia elements such as images, videos, and audio files into presentations.

Slide Organization and Structure: PowerPoint offers a slide-based structure that allows users to organize their content logically.

Animation and Transitions: PowerPoint provides animation and transition effects that can be applied to individual elements or entire slides.

Collaboration and Sharing: PowerPoint offers collaboration features that allow multiple users to work on a presentation simultaneously.





Presenter Tools: PowerPoint includes various tools to assist presenters during the delivery of their presentations.

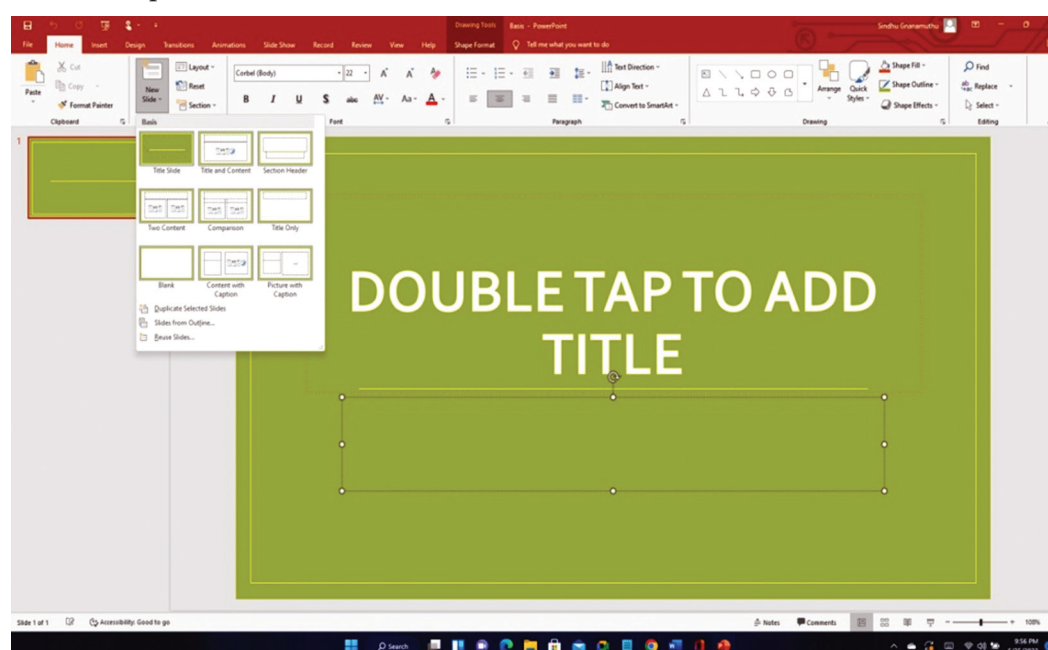
Audience Engagement: PowerPoint supports interactive elements like hyperlinks, buttons, and quizzes, which can be included to engage the audience and encourage participation.

Wide Compatibility: PowerPoint files can be saved in various formats, such as PPT, PPTX, PDF, or as video files. This compatibility ensures that presentations can be accessed and viewed across different devices and platforms.

Integration with Other Tools: PowerPoint seamlessly integrates with other Microsoft Office applications, such as Word and Excel.

Professional and Personal Use: PowerPoint is extensively used in business settings for sales presentations, training sessions, project updates, and meetings.

Overall, Microsoft PowerPoint provides a versatile and powerful platform for creating, editing and delivering presentations.

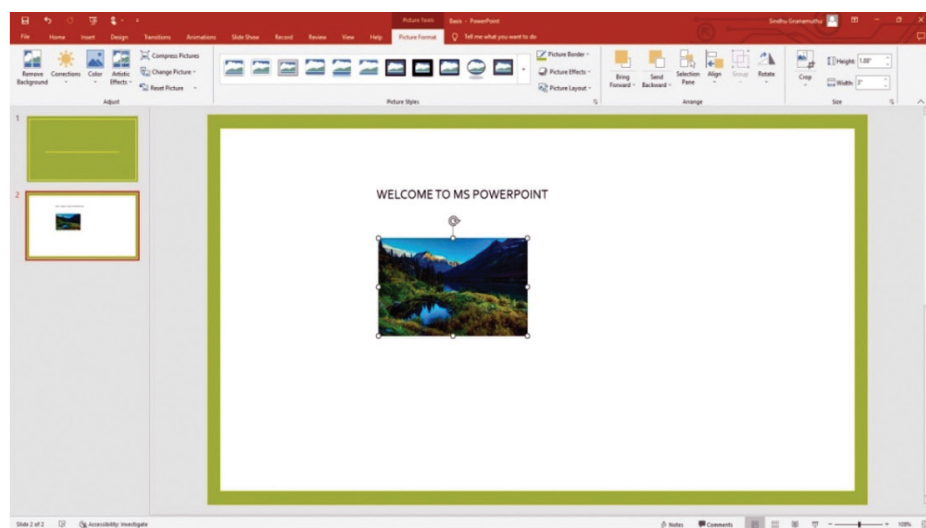
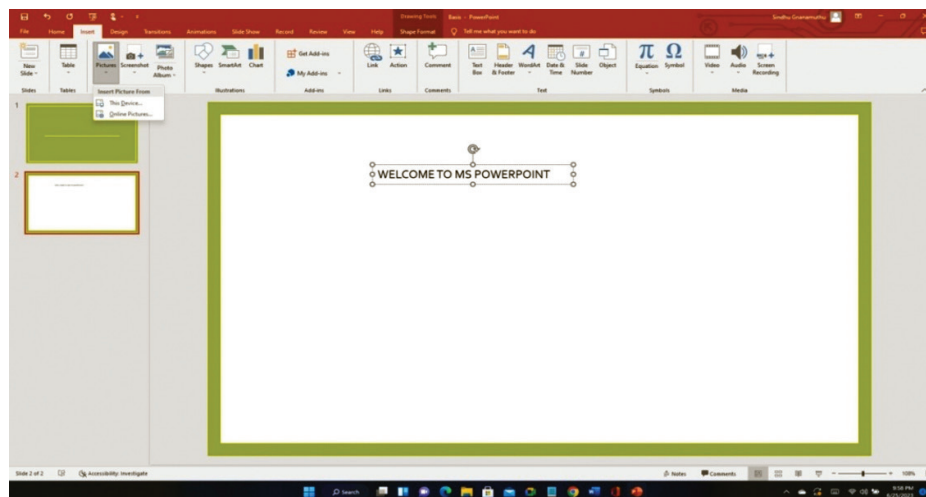
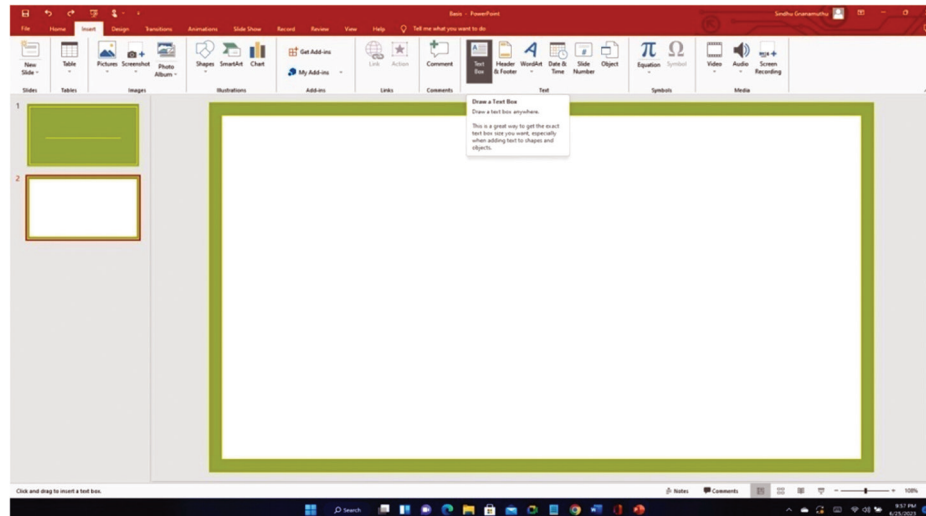


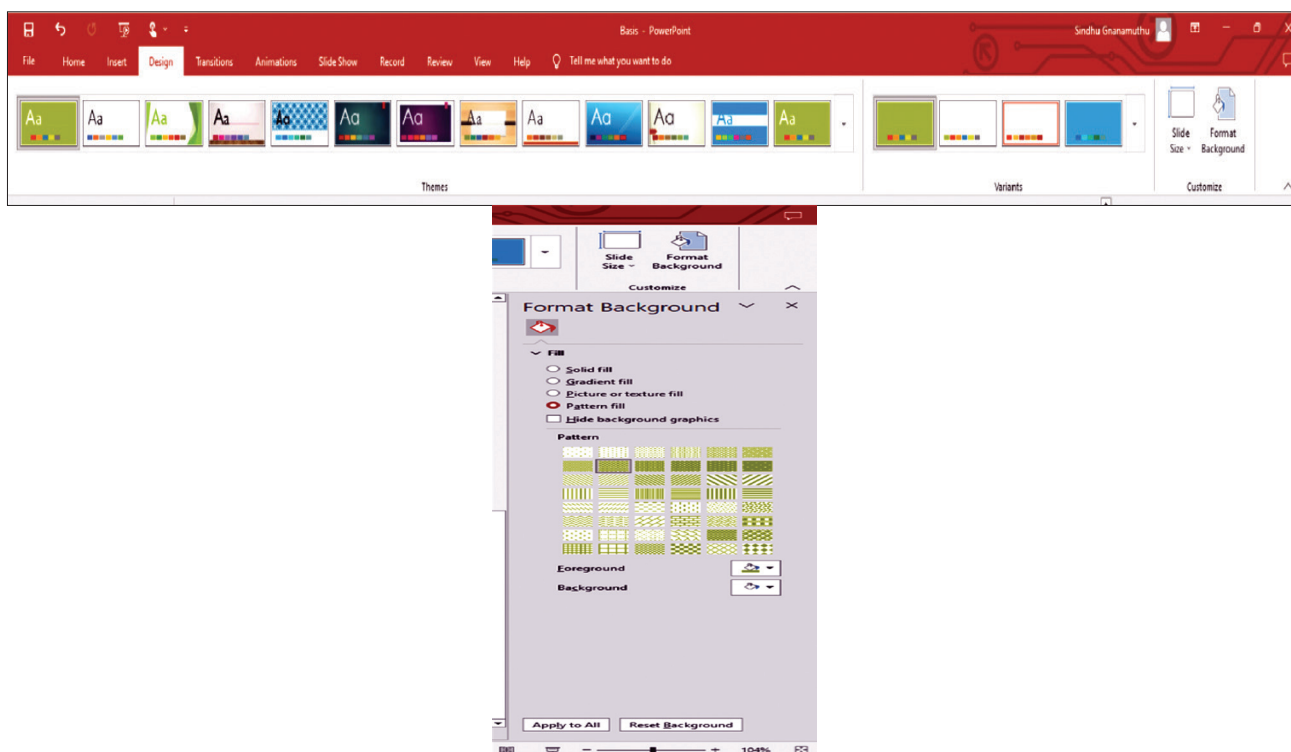
CREATION OF PRESENTATION:

Launch PowerPoint: Open the PowerPoint application on your computer. You will typically find it in the Microsoft Office or Office Suite folder.

Choose a Presentation Template (Optional):

To choose a template, click on “New Presentation” or “New” and browse through the available templates.



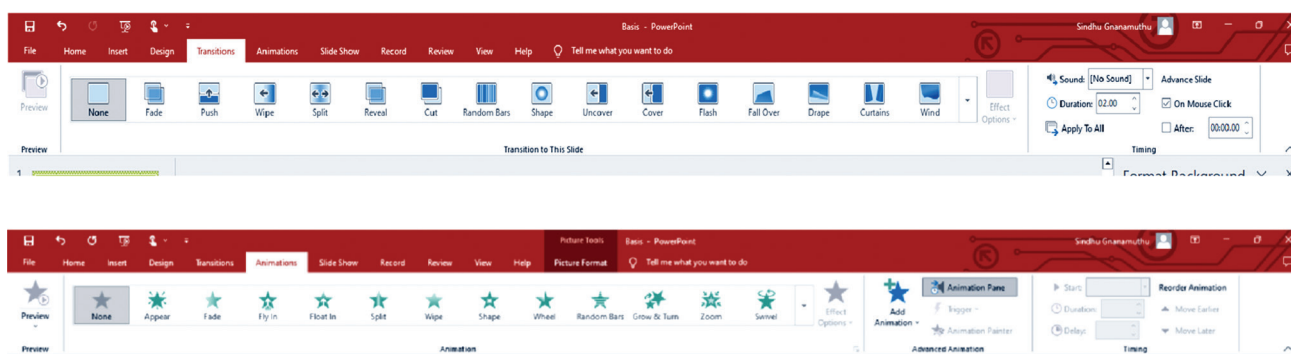


Add Slides: Once you have a new presentation open, you can start adding slides. Click on the “Insert” tab in the top menu, and then click on “New Slide.” Choose the slide layout that best fits your content (e.g., title slide, content slide, picture with caption, etc.). Repeat this step to add more slides to your presentation.

Customize Slide Layout: Select a slide and customize its layout as needed. You can change the text size, font, and color, add bulleted or numbered lists, and adjust the alignment of text boxes. To modify the slide layout, click on the “Home” tab in the top menu and use the various formatting options available.

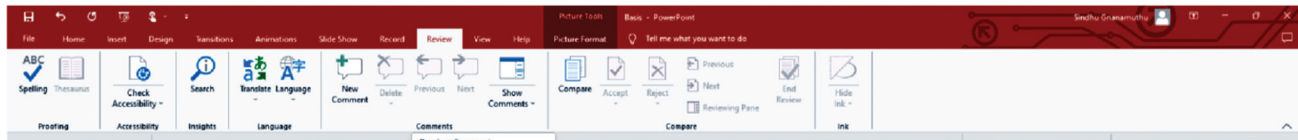
Insert Content: Populate your slides with text, images, charts, graphs, and other content to convey your message. To add text, click on a text box or use the “Text Box” button in the “Insert” tab. To insert images or other media, click on the “Pictures” or “Media” button in the “Insert” tab and select the desired file from your computer.

Format and Design: Use PowerPoint’s formatting and design tools to enhance the appearance of your presentation. You can apply themes, change the color scheme, add background images or patterns, and format shapes and objects.

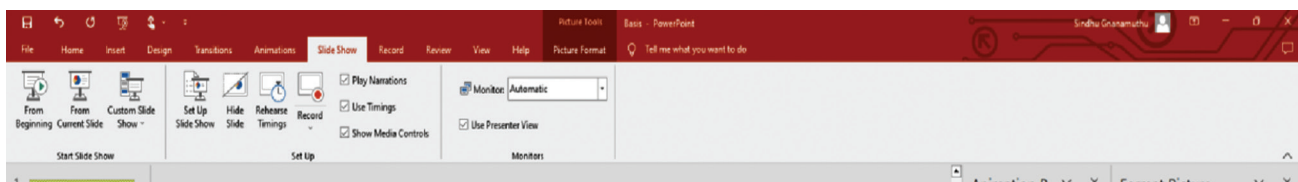


Add Transitions and Animation: To make your presentation more engaging, you can add transitions between slides and animate individual elements. Click on the “Transitions” tab to select slide transitions, and use the “Animations” tab to apply animation effects to text, images, or other objects.

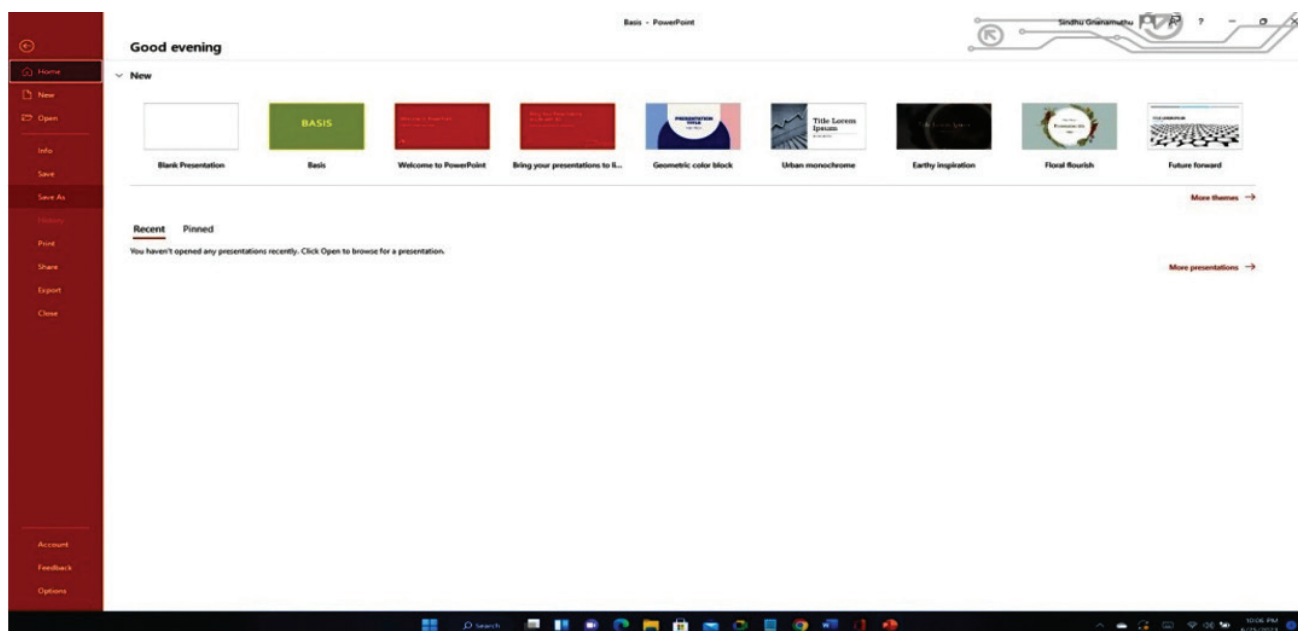
Review and Edit: Review your presentation to ensure accuracy, consistency, and flow. Check for spelling and grammar errors, adjust the slide order if needed, and make any necessary edits or refinements. Use the “Review” tab for proofreading tools like spell check and thesaurus.



Preview and Test: Before presenting, preview your slideshow to ensure everything appears as intended. Play the slideshow by clicking the “Slide Show” button in the bottom right corner or pressing F5 on your keyboard.



Save and Share: Save your presentation by clicking on the “Save” or “Save As” button in the top left corner. Choose a name and location for the file on your computer. If you want to share the presentation with others, you can save it in different file formats such as PPTX or PDF. Use the “Share” or “Export” options to send the presentation via email, upload to cloud storage, or share it on online platforms.



That's it! You have successfully created a presentation in Microsoft PowerPoint.

FORMATING OF PRESENTATION:

Launch MS PowerPoint: Open the PowerPoint application on your computer.

Choose a Presentation: Start a new presentation or open an existing one.

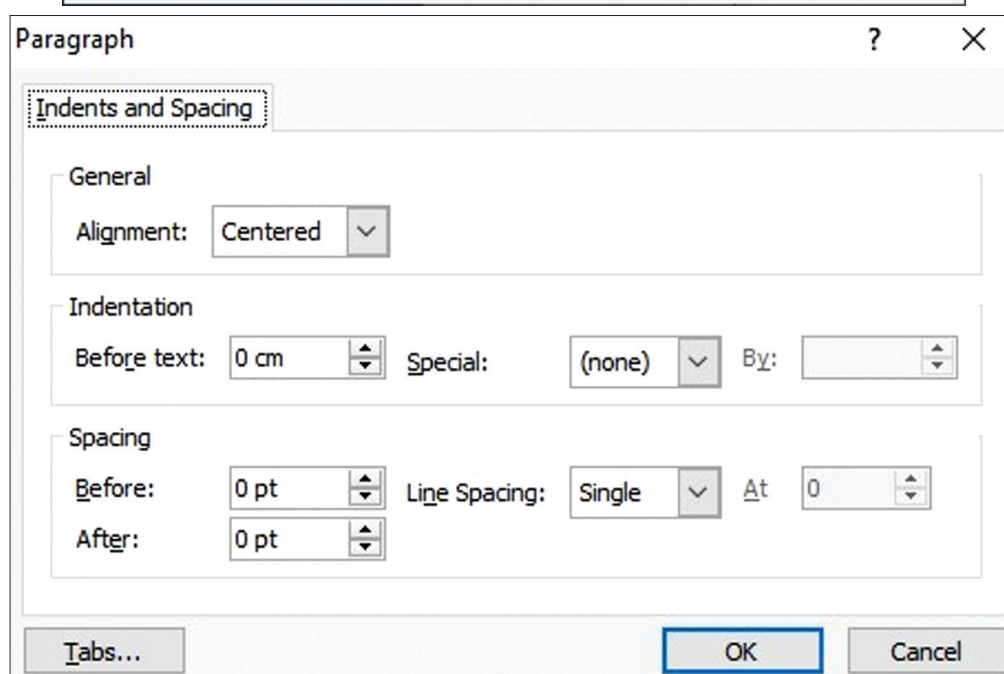
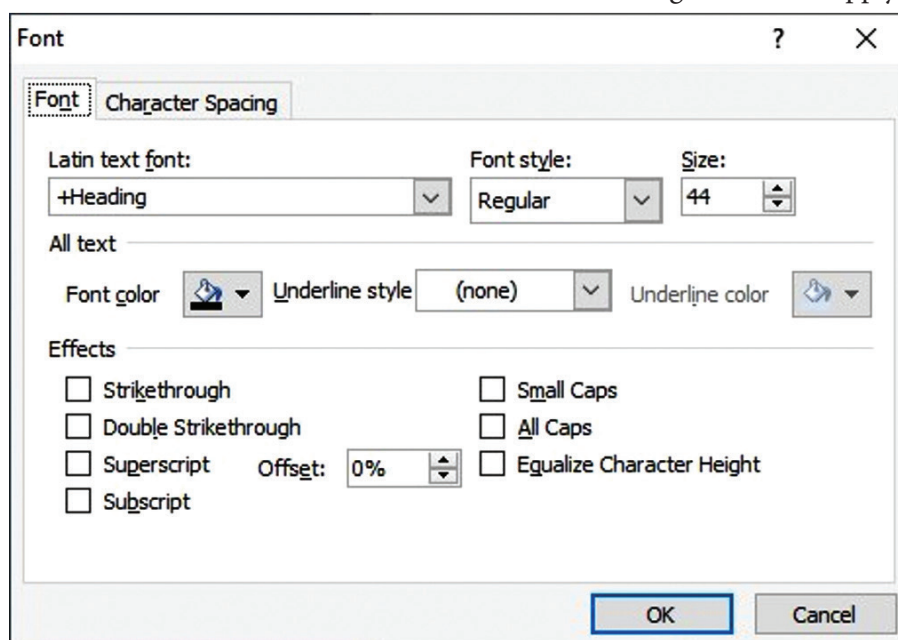
Select Text: Click on the text box or highlight the text you want to format.

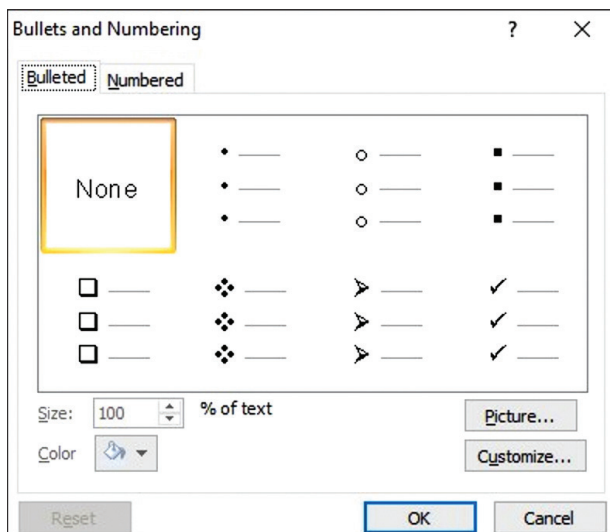
Font Formatting: To change the font type, size, or color, locate the “Font” section in the Home tab. Click on the respective dropdown menus or buttons to select your desired options.

Bold, Italic, and Underline: In the “Font” section, you’ll find the buttons for bold (B), italic (I), and underline (U). Select the text and click on the corresponding button(s) to apply the formatting.

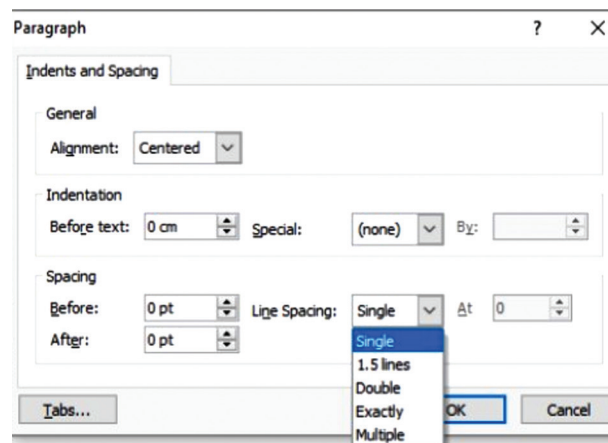
Text Alignment: In the “Paragraph” section, you’ll find alignment buttons (left align, center align, right align, and justify). Select the text and click on the desired alignment button.

Bullets and Numbering: To add bullet points or numbering to your text, select the text and go to the “Paragraph” section. Click on the “Bullets” or “Numbering” buttons to apply the formatting.

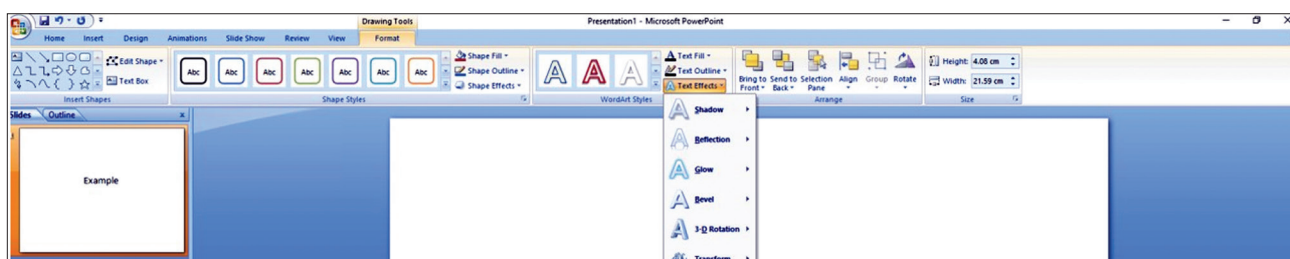




Line Spacing: In the “Paragraph” section, you’ll also find options for line spacing. Click on the “Line Spacing” button and choose the desired spacing from the dropdown menu.



Text Effects: To apply text effects, go to the “Drawing Tools” or “Format” tab (depending on your PowerPoint version). Look for the “Text Effects” or “WordArt Styles” button. Select the text and choose from various text effects available.



Shape Formatting: If you want to format a shape, click on the shape to select it. In the “Drawing Tools” or “Format” tab, you’ll find options for changing the fill color, outline color, shape style, and more.

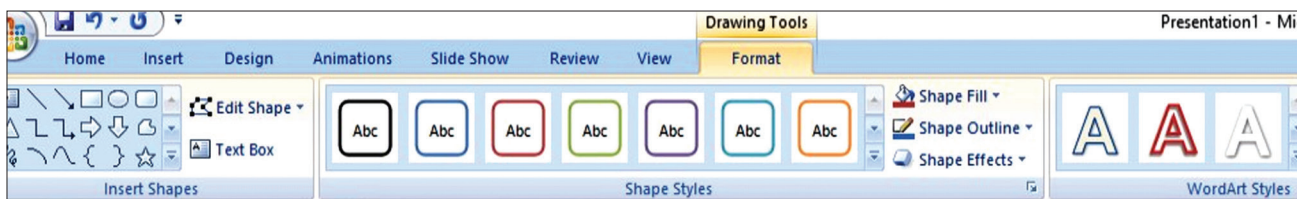
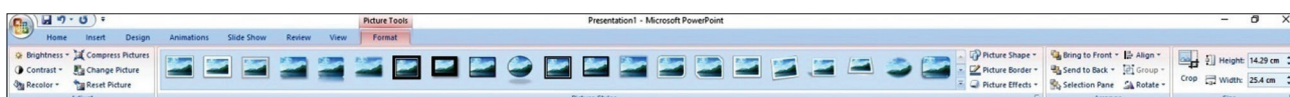
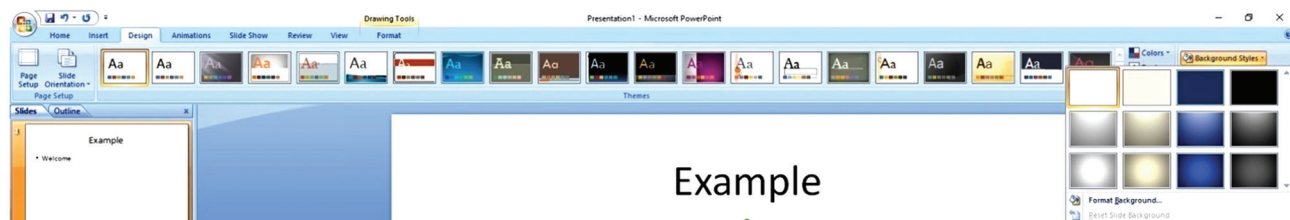


Image Formatting: To format an image, select the image and go to the “Picture Tools” or “Format” tab. From there, you can adjust the image’s brightness, contrast, color, add borders, crop it, and apply various artistic effects.



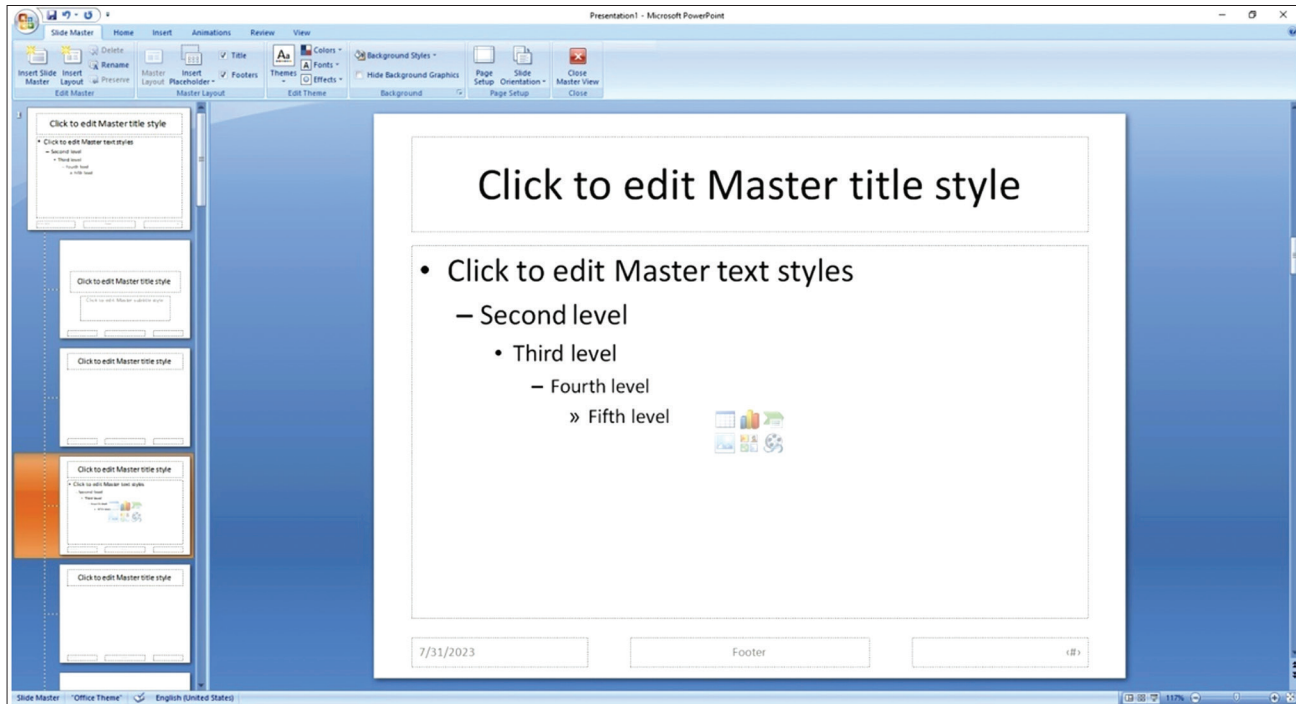
Slide Background: To change the background of a slide, go to the “Design” tab. Look for the “Background Styles” or “Format Background” button. Choose a predefined background or customize it by selecting colors, gradients, patterns, or pictures.



Example



Figure 1.10: Microsoft PowerPoint 2010 ribbon, Drawing Tools



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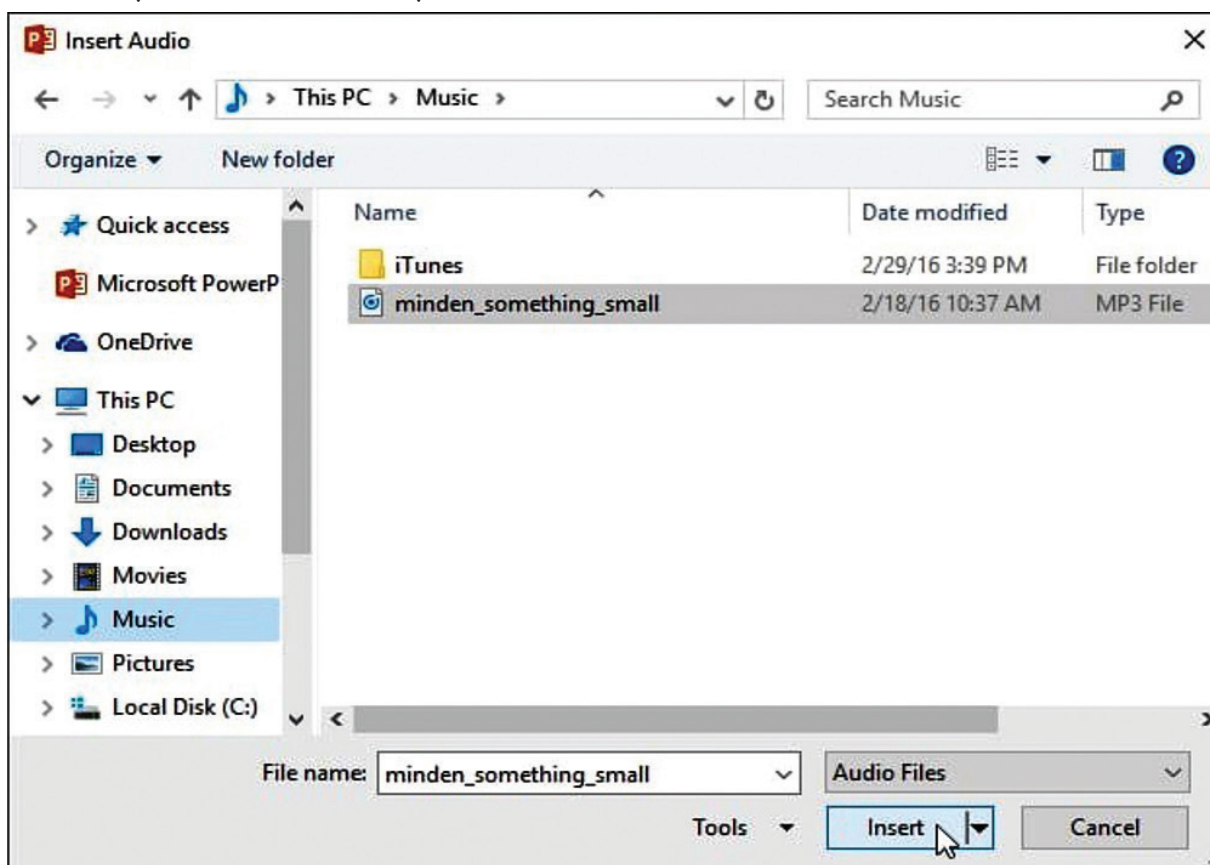
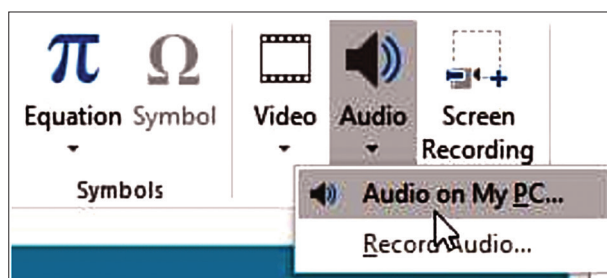
Audio Options: From the dropdown menu, choose the audio option that suits your needs:

Audio on My PC: Select this option if you have an audio file saved on your computer.

Online Audio: Choose this option to search for audio files available online.

Record Audio: Select this option to record audio using your computer's microphone. Inserting Audio File: If you chose "Audio on My PC," browse

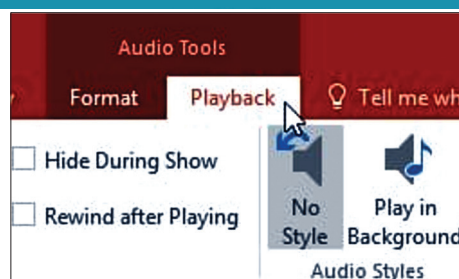
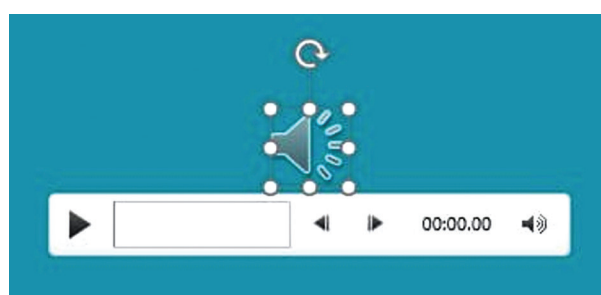
your computer to locate the audio file, select it, and click the "Insert" button. The audio file will be added to your slide.



Adjust Audio Settings: After inserting the audio, you'll see a speaker icon on your slide. Click on it to reveal the "Audio Tools" tab. Here, you can control the audio settings, such as playback options, volume, and looping.

Playback Options: In the "Audio Tools" tab, you can set the audio to play automatically or when clicked. Choose the desired option from the "Start" dropdown menu.

Volume and Looping: Adjust the volume by moving the volume slider or selecting the volume percentage from the dropdown menu. If you want the audio to play continuously, check the "Loop until Stopped" box.





Adding Video:

Launch MS PowerPoint: Open the PowerPoint application on your computer.

Choose a Presentation: Start a new presentation or open an existing one.

Slide Selection: Select the slide where you want to add the video or create a new slide specifically for the video.

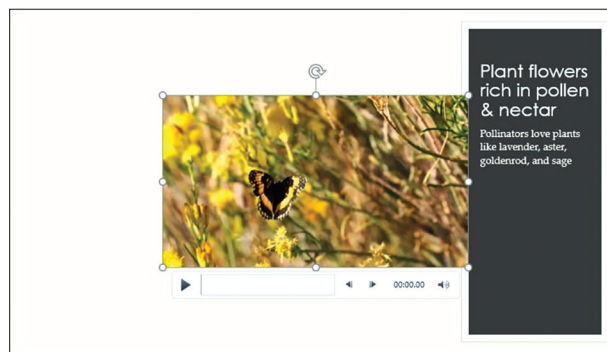
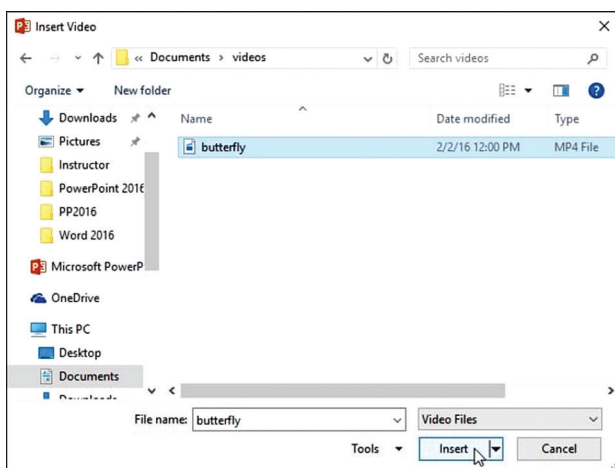
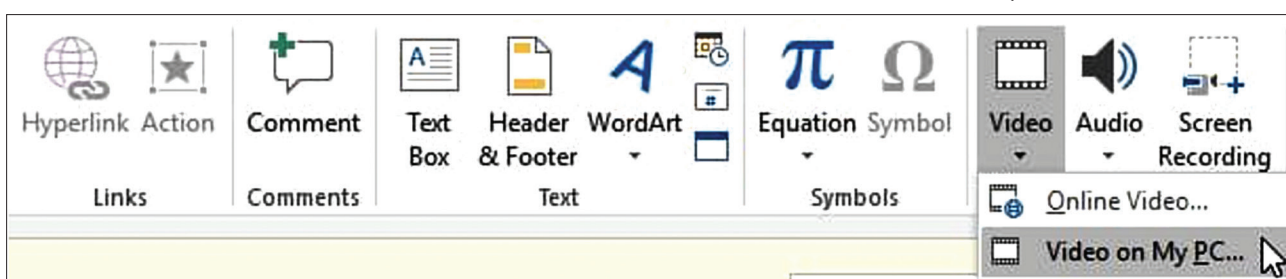
Insert Video: Go to the “Insert” tab and click on the “Video” button. A dropdown menu will appear.

Video Options: From the dropdown menu, choose the video option that suits your needs:

Video on My PC: Select this option if you have a video file saved on your computer.

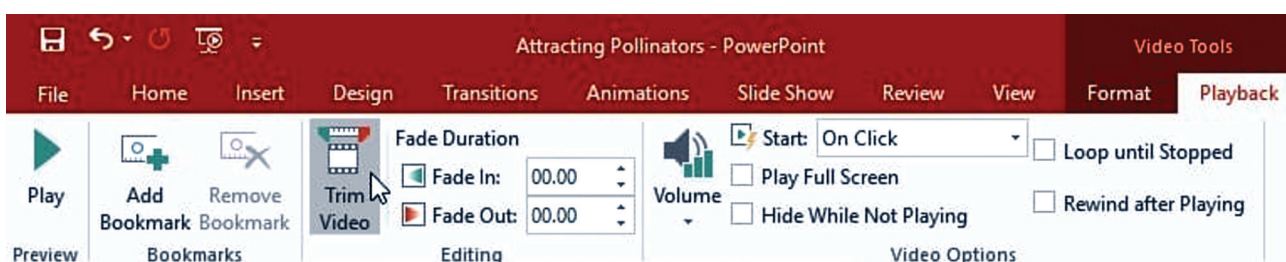
Online Video: Choose this option to search for and insert videos available online.

Inserting Video File: If you chose “Video on My PC,” browse your computer to locate the video file, select it, and click the “Insert” button. The video file will be added to your slide.



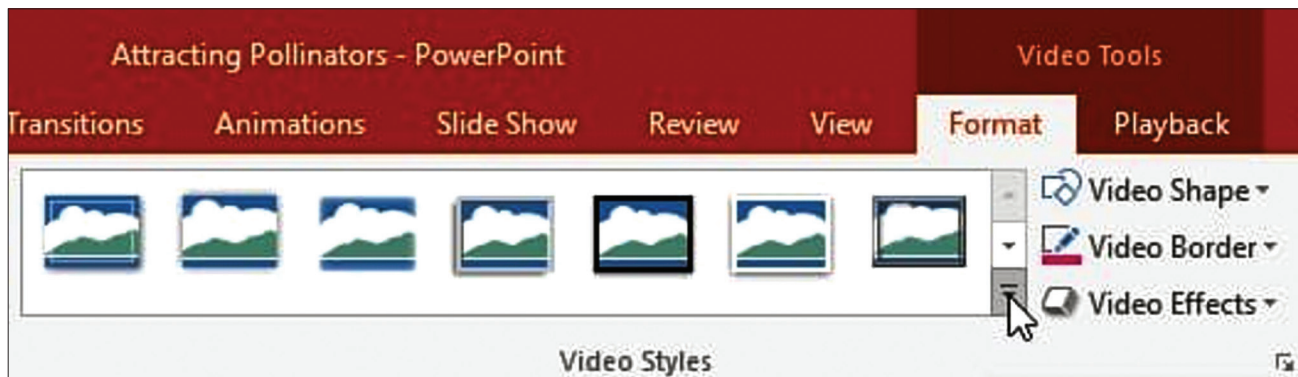
Adjust Video Settings: After inserting the video, you’ll see a video player on your slide. Click on it to reveal the “Video Tools” tab. Here, you can control the video settings, such as playback options, volume, and video styles.

Playback Options: In the “Video Tools” tab, you can set the video to play automatically or when clicked. Choose the desired option from the “Start” dropdown menu.



Video Controls: You can control the video playback using the playback controls on the video player, such as play, pause, and seek.

Video Styles: In the “Video Tools” tab, you can apply various video styles to enhance the appearance of the video on your slide.



Remember to test your audio and video playback during your presentation to ensure everything works as expected.

ADDING SLIDE ANIMATION:

Launch MS PowerPoint: Open the PowerPoint application on your computer.

Choose a Presentation: Start a new presentation or open an existing one.

Select a Slide: Click on the slide where you want to add animations or create a new slide.

Access the Animation Tab: Go to the “Animations” tab in the PowerPoint ribbon at the top of the screen. This tab contains various options for adding animations to your slide elements.

Select an Element: Click on the element you want to animate. It can be a text box, image, shape, or any other object on your slide.

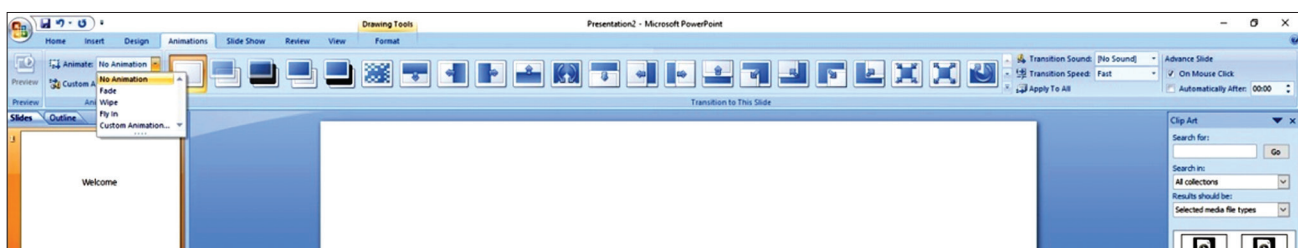
Choose an Animation: In the “Animations” tab, you’ll find a variety of animation options. Click on the “Add Animation” button to reveal a dropdown menu with different animation effects.

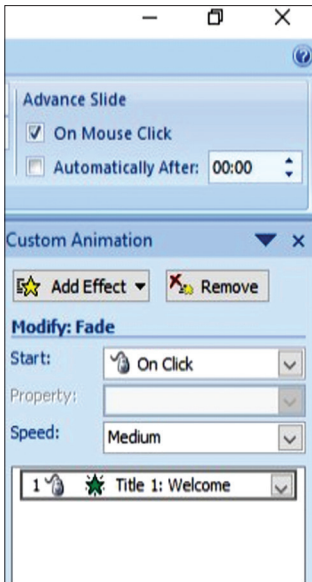
Preview Animation: As you hover over each animation effect in the dropdown menu, PowerPoint provides a live preview of how the animation will look on your slide. This allows you to preview different animation effects before applying them.

Apply Animation: Click on the animation effect you want to apply to your selected element. The animation will be added to the element, and a number will appear next to it indicating the animation sequence.

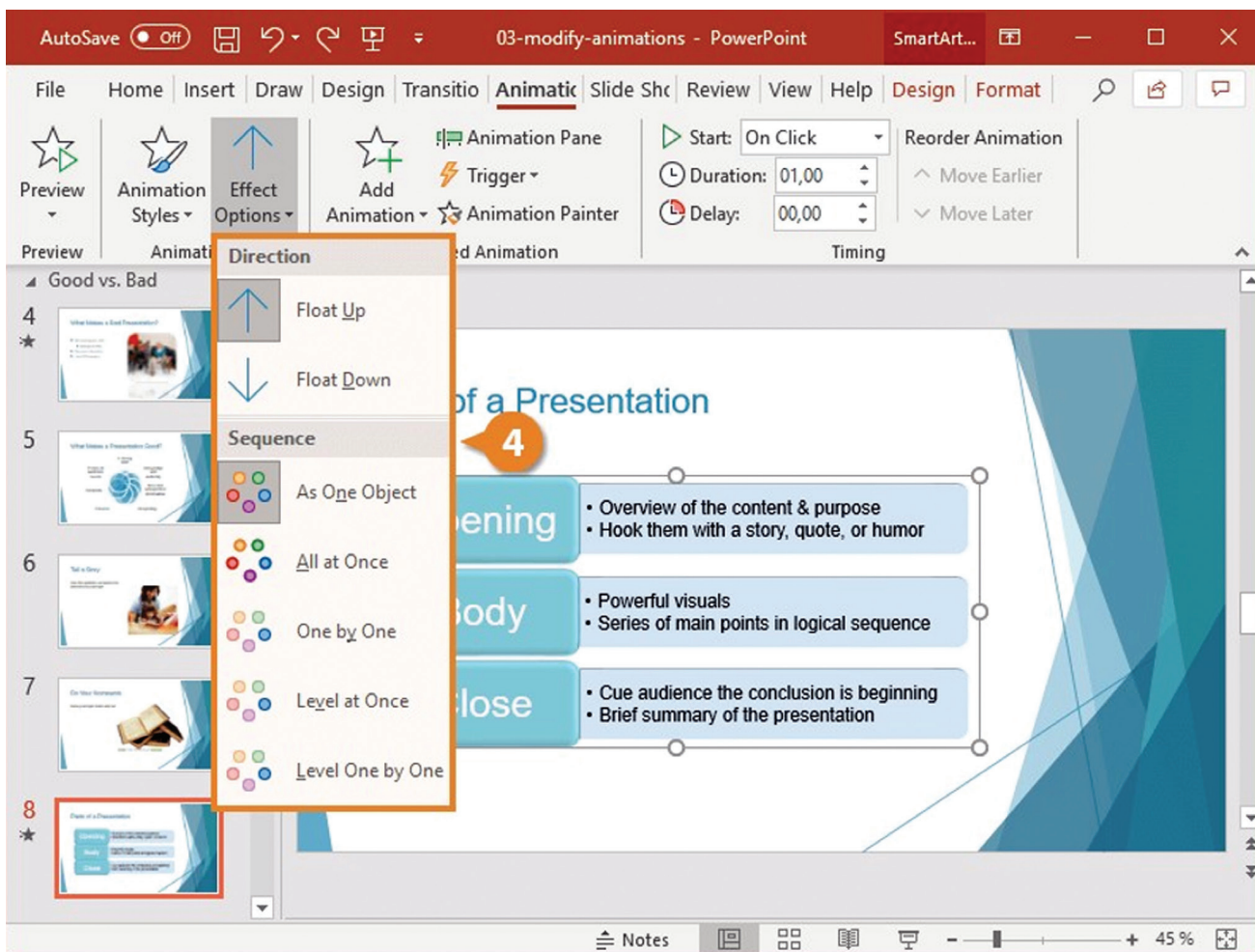
Customize Animation: After applying an animation, you can customize its properties by clicking on the “Animation Pane” button in the “Animations” tab. The Animation Pane allows you to manage multiple animations on the slide and adjust their timing, order, and other settings.

Animation Pane: In the Animation Pane, you’ll see a list of all the animations applied to the slide. You can reorder them by dragging and dropping, adjust the duration and delay, and specify the start options for each animation.

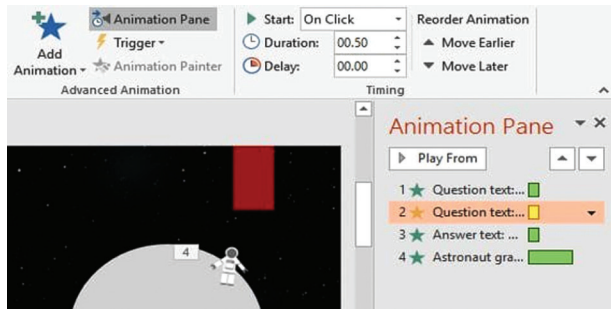




Animation Options: To further customize an animation, right-click on the animation in the Animation Pane and select “Effect Options” from the context menu. This opens a dialog box with specific options for that animation effect.



Timing Options: In the Animation Pane, you can also set the timing options for animations. Click on the “Timing” button next to an animation to access options such as triggering animations on a click or automatically after a specified time delay.



Animation Preview: To see how the animations will look in your presentation, click on the “Preview” button in the “Animations” tab. This allows you to view the animations in real-time and makes any necessary adjustments.

Multiple Animations: You can apply multiple animations to a single element or apply different animations to different elements on the same slide. Use the Animation Pane to manage and control the sequence and timing of multiple animations.

Slide Transition: In addition to individual element animations, you can also add slide transitions between slides. Go to the “Transitions” tab in the PowerPoint ribbon and choose a transition effect from the options provided. This adds a transition effect when moving from one slide to the next.

Remember to preview your animations and transitions to ensure they enhance your presentation and convey your message effectively.

SHORTCUTS:

Here are some commonly used shortcut keys in MS PowerPoint:

General Actions:

Ctrl + N: Create a new presentation.

Ctrl + O: Open an existing presentation.

Ctrl + S: Save the current presentation. Ctrl + P: Print the current presentation.

Ctrl + Z: Undo the last action.

Ctrl + Y: Redo the last undone action.

Ctrl + X: Cut the selected item.

Ctrl + C: Copy the selected item.

Ctrl + V: Paste the copied or cut item.

Ctrl + A: Select all items on the current slide.

Ctrl + F: Find text or objects in the presentation.

F5: Start the presentation from the beginning.

Slide Navigation:

Ctrl + Home: Go to the first slide.

Ctrl + End: Go to the last slide.

Ctrl + Page Up: Go to the previous slide.

Ctrl + Page Down: Go to the next slide.

Slide Number + Enter: Go to a specific slide by entering its number.

Text Formatting:

Ctrl + B: Bold the selected text.

Ctrl + I: Italicize the selected text.

Ctrl + U: Underline the selected text.

Ctrl + Shift + >: Increase the font size.

Ctrl + Shift + <: Decrease the font size.

Ctrl + Shift + F: Change the font of the selected text.

Slide Show:

F5: Start the presentation from the beginning.

Shift + F5: Start the presentation from the current slide.

N: Go to the next slide.

P: Go to the previous slide.

W: Hide or show the pen and pointer tools.

B: Display a black screen.

W: Display a white screen.

Esc: End the slide show.

Object Handling:

Ctrl + D: Duplicate the selected object.

Ctrl + G: Group the selected objects.

Ctrl + Shift + G: Ungroup the selected group of objects.

Ctrl + Shift + N: Bring the selected object to the front.

Ctrl + Shift + B: Send the selected object to the back.

These are just a few examples of shortcut keys available in MS PowerPoint. Using shortcut keys can help you navigate and work more efficiently within the application.

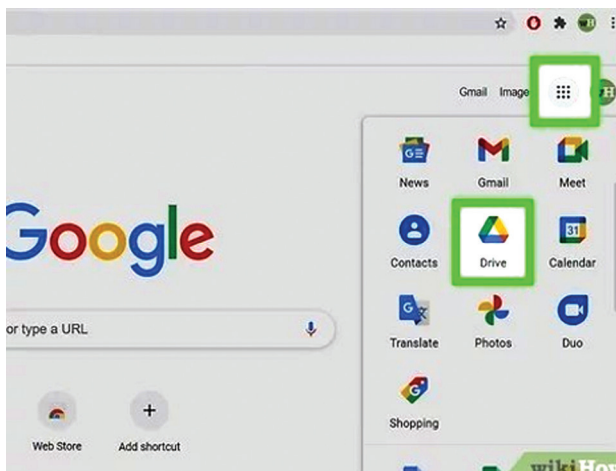
CREATION OF PRESENTATION WITH GOOGLE SLIDES:

Google Slides is an online presentation app that lets you create and format presentations and work with other people.

1. Go to Google's home page and click on the grid in the upper right hand corner. From there, click on the Drive icon. You will be redirected to a log in page if you are signed out, if not you will be taken to your Drive.

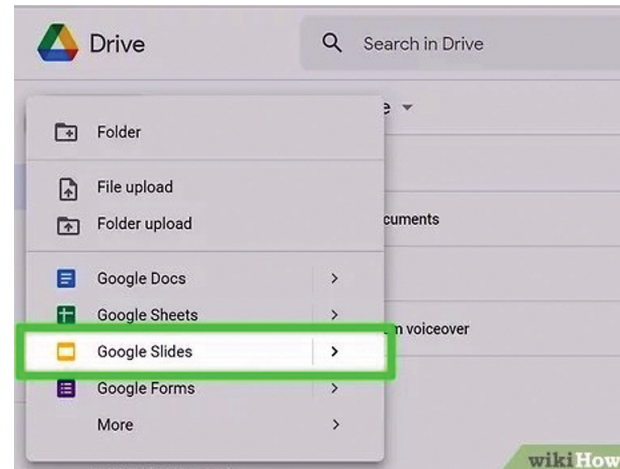
You can also just type in <https://slides.google.com>, log in if you haven't already, and will be taken to the Slides page.

If you don't have a Google account, learn to create one now!



2. From your Drive, click the blue New button on the left side of the page. Select "Google Slides" from the drop-down menu.

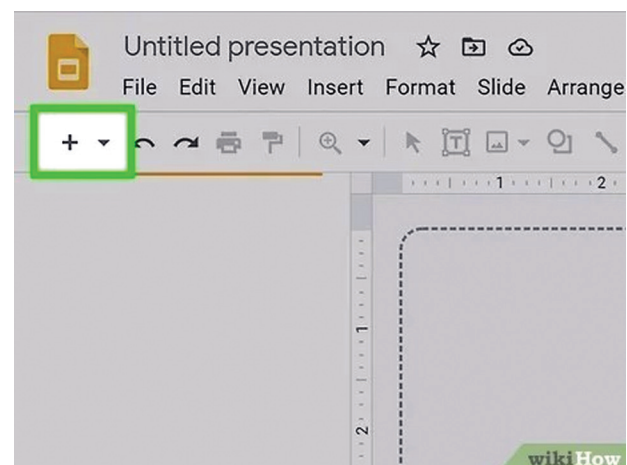
For more options, hover over the arrow on the right edge of the Google Slides option, where a smaller drop-down menu will appear. From here you can select to create a presentation from a template or a blank slide.



3. If you are on the slides page, select an option from the top of the page to create a new slide.

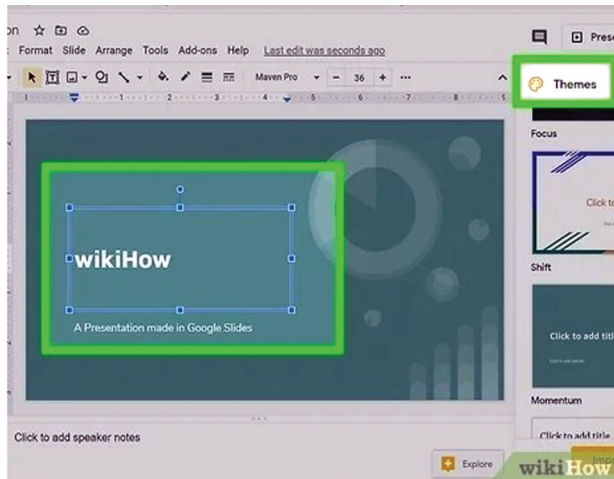
You can press the white square with a plus sign for a blank slide, or click one of the templates.

Click on the Template Gallery option, where more templates will show up.



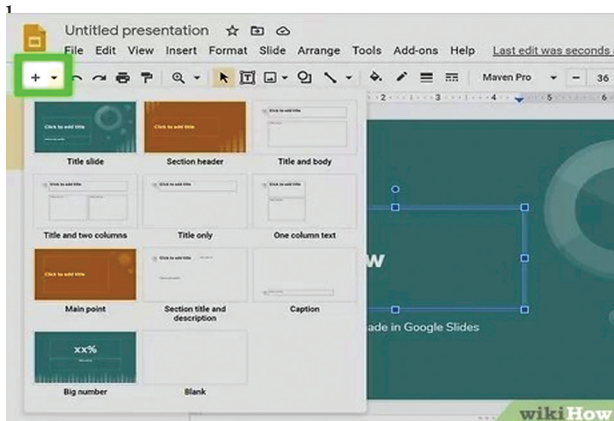
4. Name your slide and select a theme. You will also be prompted to select a theme for your presentation. This demonstration will use the "Luxe" theme. To name it, click the "Untitled" text on the top to rename it. This will appear in the browser bar when you or someone is viewing the presentation.

Be sure to add a title and subtitle by clicking where you are prompted to add text.



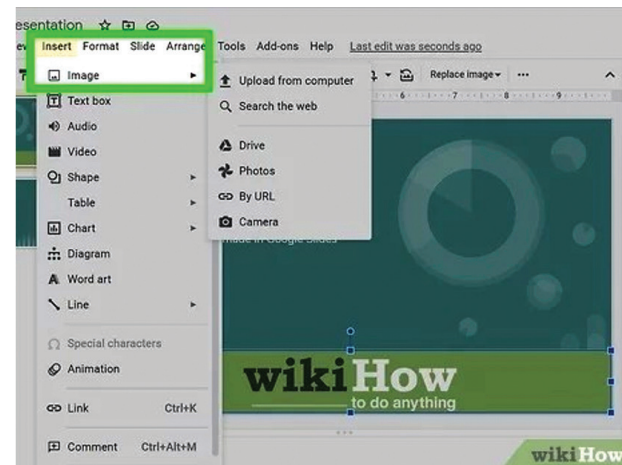
5. **Add new slides.** At the upper left hand corner, there is a small + button. Click on this to create the default title and body slide. If you want a different structure, click the small down arrow right next to it. This will lead to a large drop-down menu of many different layouts for various purposes.

You can also change a pre-existing slide's layout by clicking the layout option on the upper editing

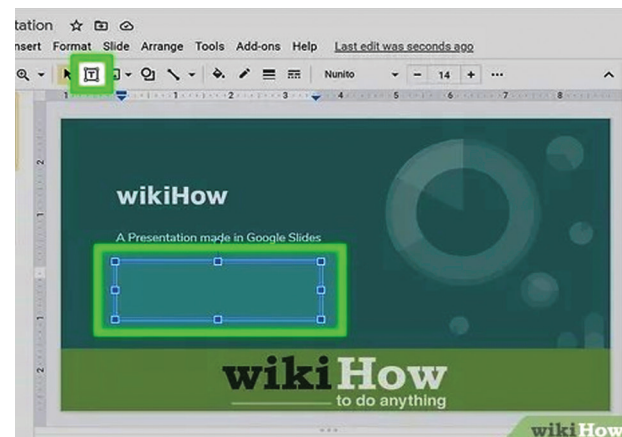


6. **Insert images.** Go to the upper editing bar and click insert. From there, find Images in the drop-down menu. A window will pop up with various image options: you can upload your own image from your computer, take a picture with your webcam, paste an image URL, find an image from your Google photo albums, find a picture from your drive, or search for one online with Google, LIFE, or stock images.

7. **Add text.** If you want to add a text box, click the box with a T in the upper editing bar (this is if you don't already have an open space with a "click to add text" prompt). You can edit the text's



font and size, make it bold, underlined, or italic, all of which are right next to each other in the editing bar. There are also options with alignment and line spacing in the editing bar. Click on more, located at the right edge of the bar, to adjust indent and add a numbered and/or bulleted list.

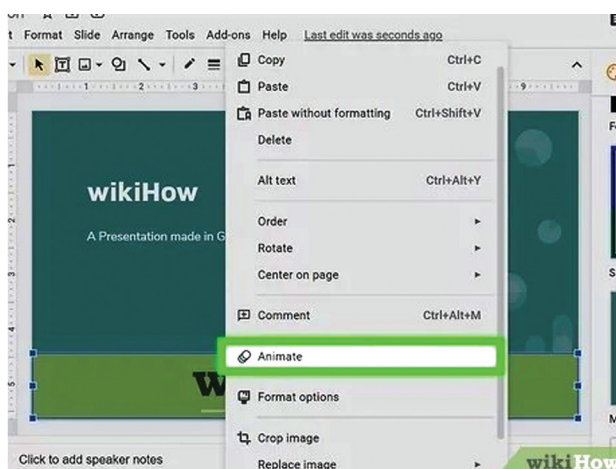


8. **Animate.** Right click text or a picture, preferably the one you want to animate first, and navigate to the bottom of the drop-down menu where it says Animate. Your selected element should be highlighted in blue. From there, click on the rectangle that says Fade in, which is the default animation. Select an animation from the drop down menu. Beneath it is another rectangle that says On click, click on this to choose if you want the animation to occur manually or automatically. You can check if you want it to animate by paragraph, which is recommended for bulleted lists. Underneath that you can adjust the speed of each animation by dragging the bar. As you add animations to each element by clicking the blue "+" Select an object to animate", they will begin to pile up. Click on each one to edit it.

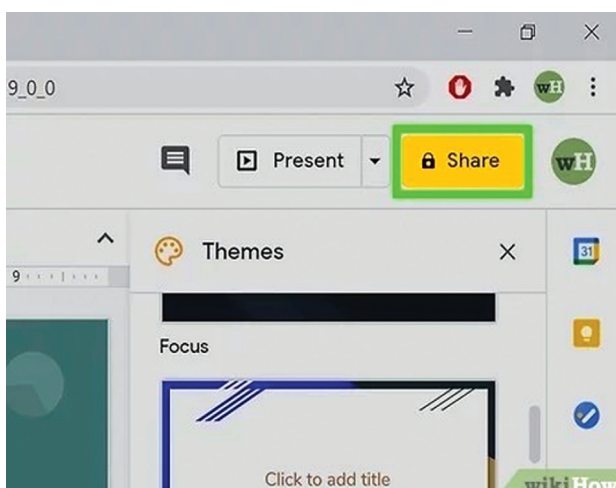
Change the transition from slide to slide by clicking the default “Slide: No transition” at the top of the sidebar. You can choose whether to apply to all slides or just one.

Preview your animations by clicking Play at the bottom of the sidebar.

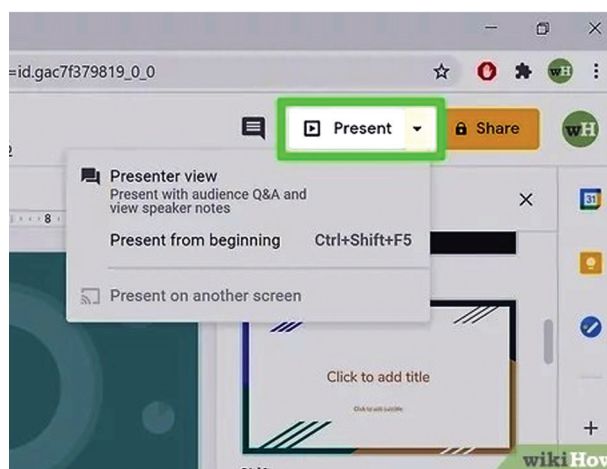
Remove an animation by clicking the small x on its rectangle, and drag each animation up or down to change the order.



9. When you are done editing, press the share button to edit permissions for your presentation. Search for people you want to share with by their names or email, and edit permissions by clicking the pencil icon next to it- they can either view it, edit it, or comment on it. Clicking the button also gives you your unique presentation link which can be accessed by clicking “Get shareable link”. When you are done, click Done.



10. View the finished product by clicking “Present” on the upper right hand corner. Navigate from slide to slide by using arrow keys or the arrows at the bottom of the screen. Click the squiggle at the bottom to turn on the laser pointer, the four outreaching arrows for fullscreen, name of the current slide to navigate to another one, and the gear for settings. You can also turn on presenter view, which allows you to accept audience Q&A and view speaker notes.



DESIGNING WITH CANVA:

Canva is a browser-based design tool that makes it easy to create great images.

Benefits of Canva:

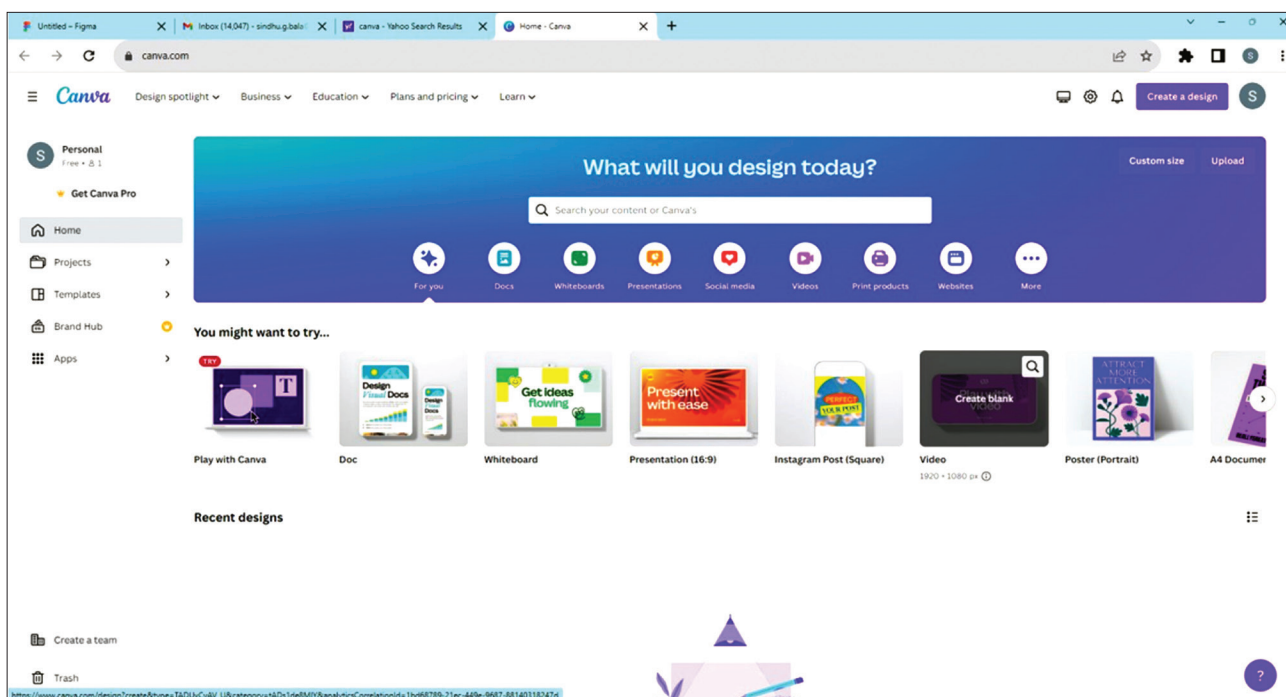
- Pre-sized social media images.
- Designer type templates get your graphics started.
- Lots of size and shape options.
- Search for stock images and pay a small fee to use – or use the free stuff.
- Save your images to edit or download later.
- Easy to make multiple, similar graphics from a template.

How to use Canva:

Step 1: Select Size and Shape

Head over to [Canva.com](https://www.canva.com). If it's your first time, you'll have to set up an account.

Click the 'create a design' button in the top right corner.



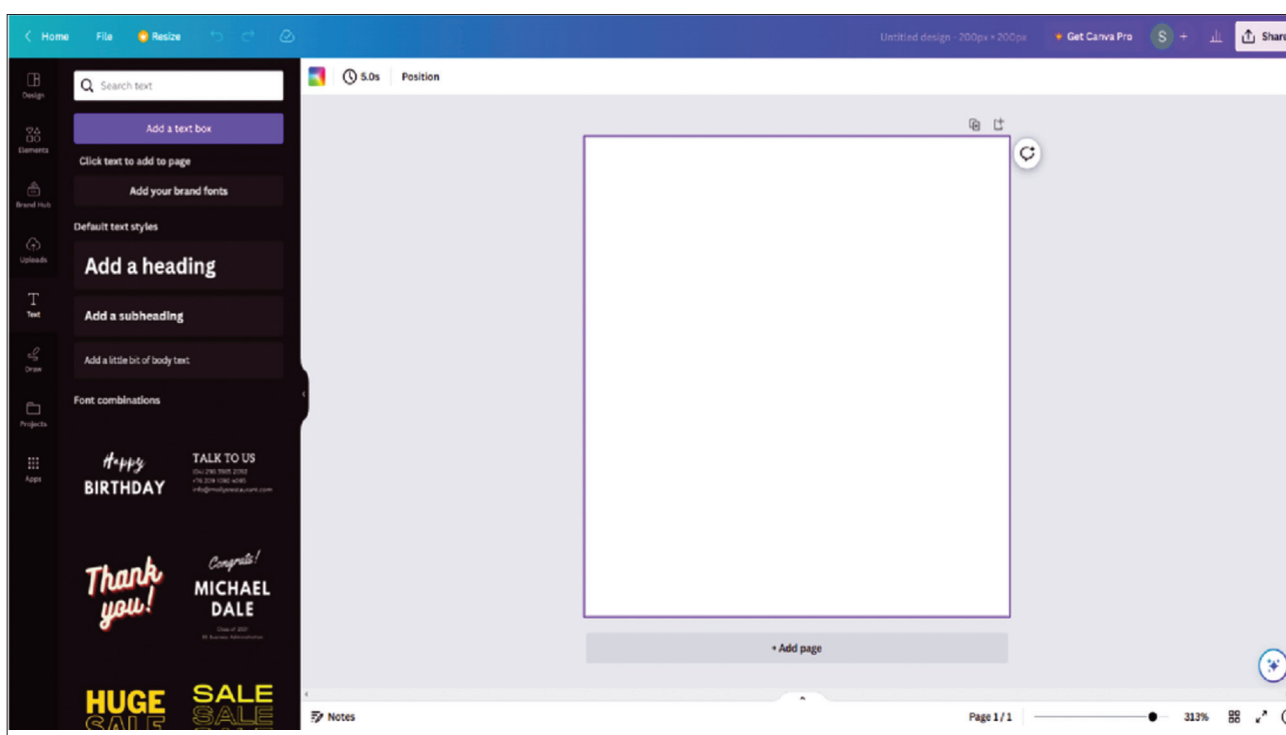
You can pick from 'custom dimensions' or a range of pre-selected sizes. Canva makes it easy to start your design by including templates for the optimal sizes on many social media platforms.

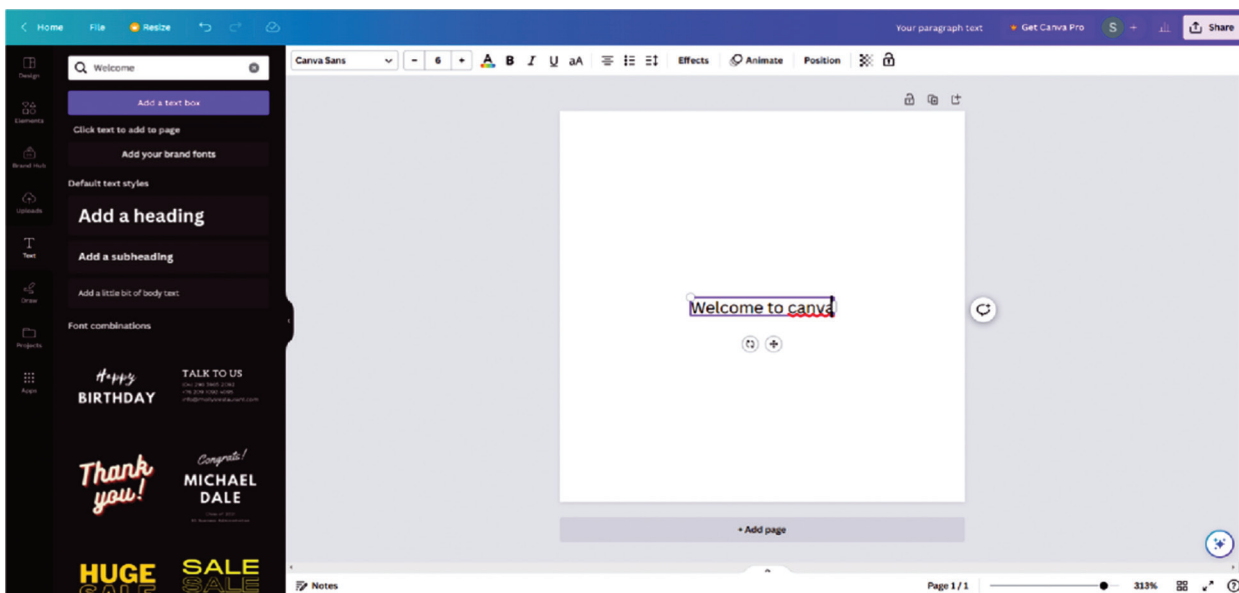
Step 2: Add Your Text

Go to 'text' on the left-hand menu and there are options to choose a simple text box. Or some font combinations and effects.

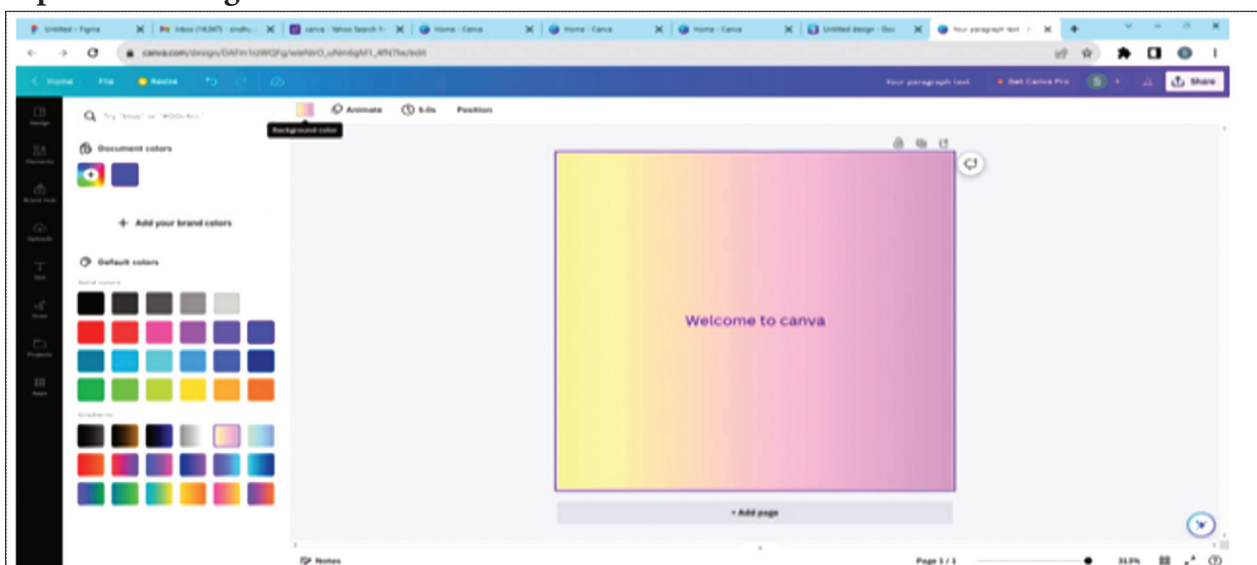
Choose a font combination idea to start with. Type in the quote you want to use. Select the one you want and then use the round dots in each corner to make it bigger.

Little purple lines will appear to help you get it in the center.



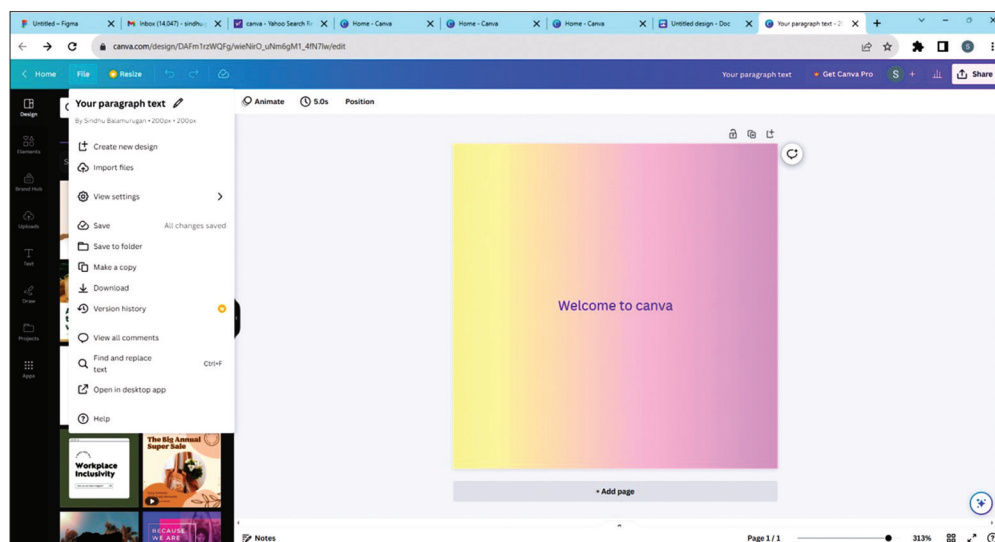


Step 3: Add background color:



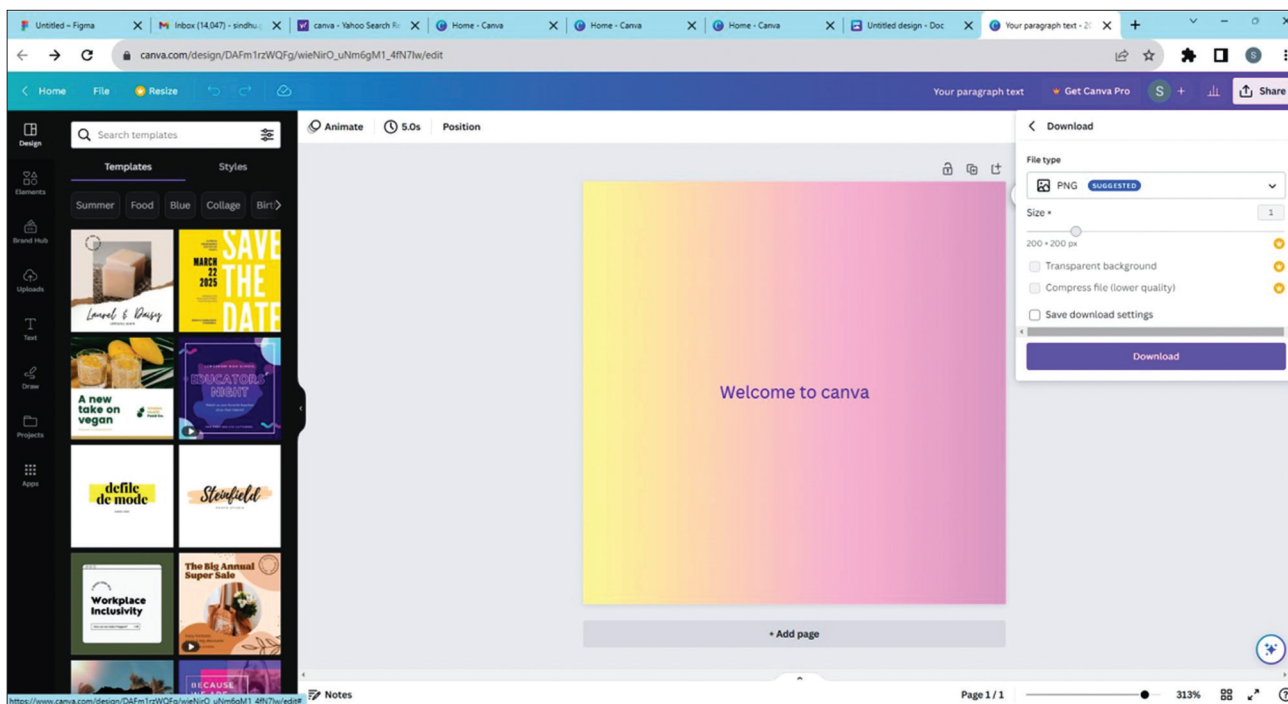
Step4: Finish and save:

Give your quote a name so you can spot file on the computer. It will default to the words on the screen or sometimes 'untitled'.



Then use the 'download' button to download it. Select your favorite format.

Your quote is ready to use!



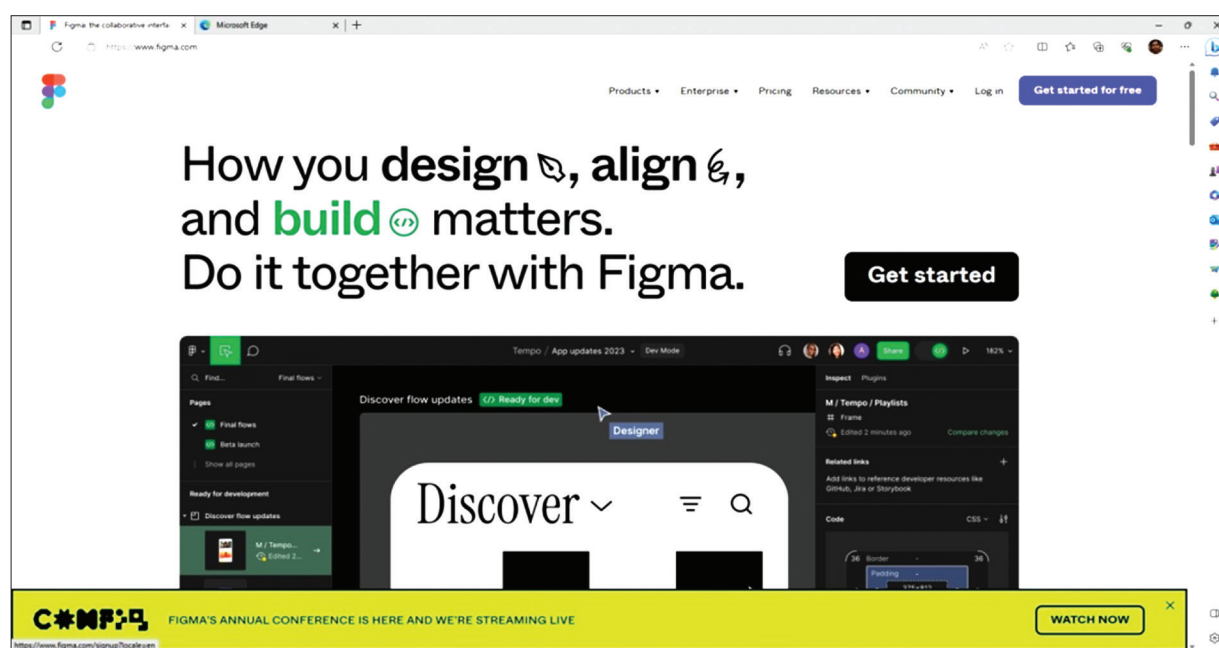
DESIGNING WITH FIGMA:

Figma is a powerful design tool that helps you to create anything: websites, applications, logos, and much more.

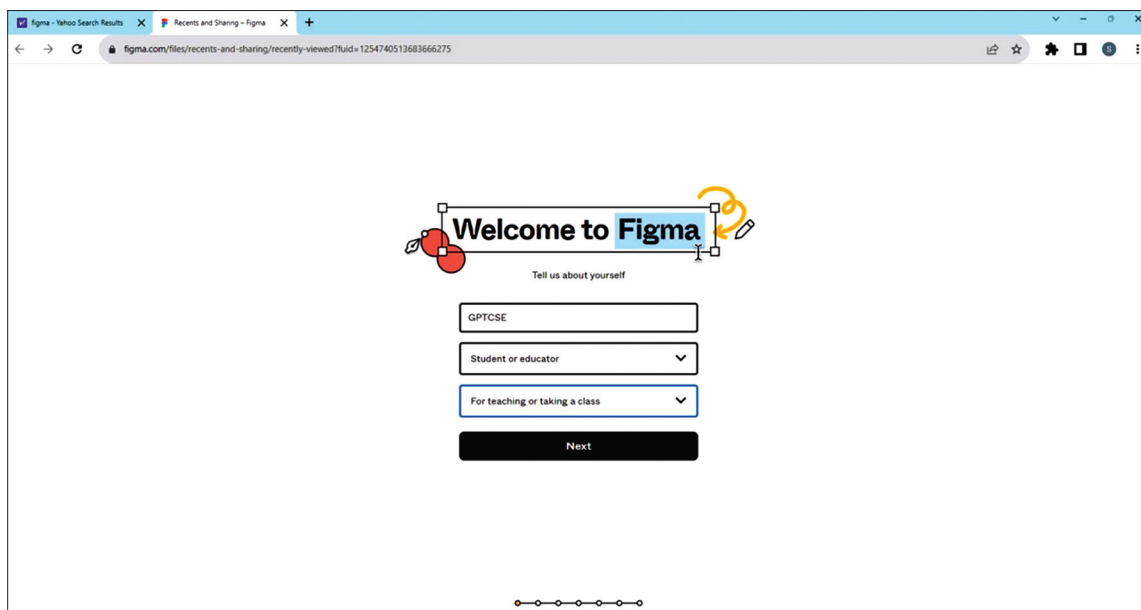
By learning to use Figma, you'll take your first steps into User Interface Design and User Experience Design. These skills are essential for building a great portfolio for yourself and potentially for your own company.

Introduction

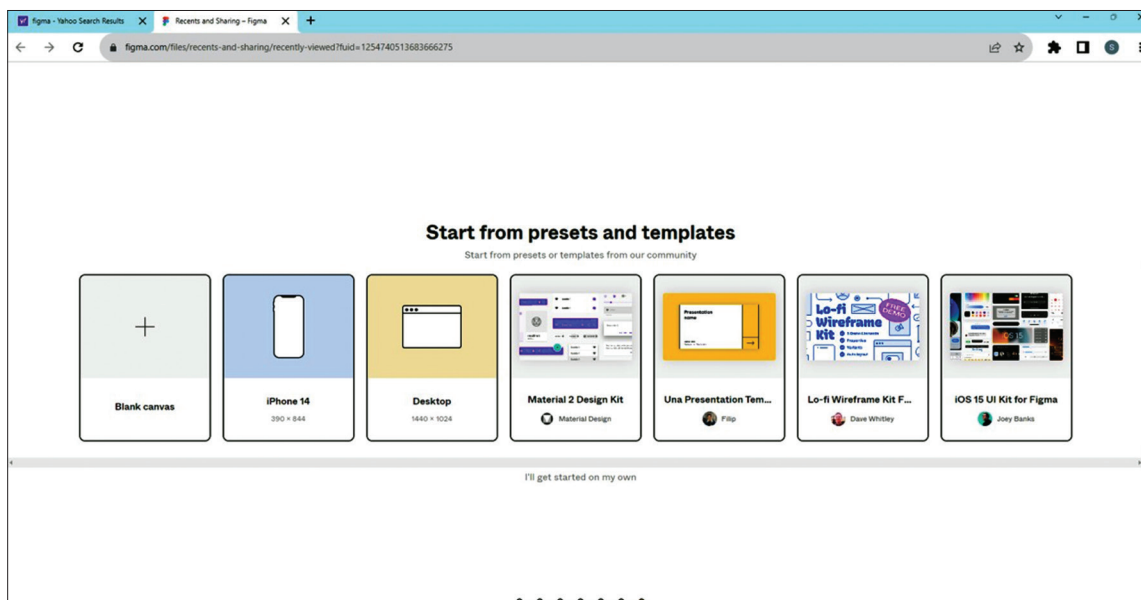
Let's begin by creating an account on the Figma Website. You can do this here: [Figma.com](https://www.figma.com).



Click “Get started for free” and sign with google account.

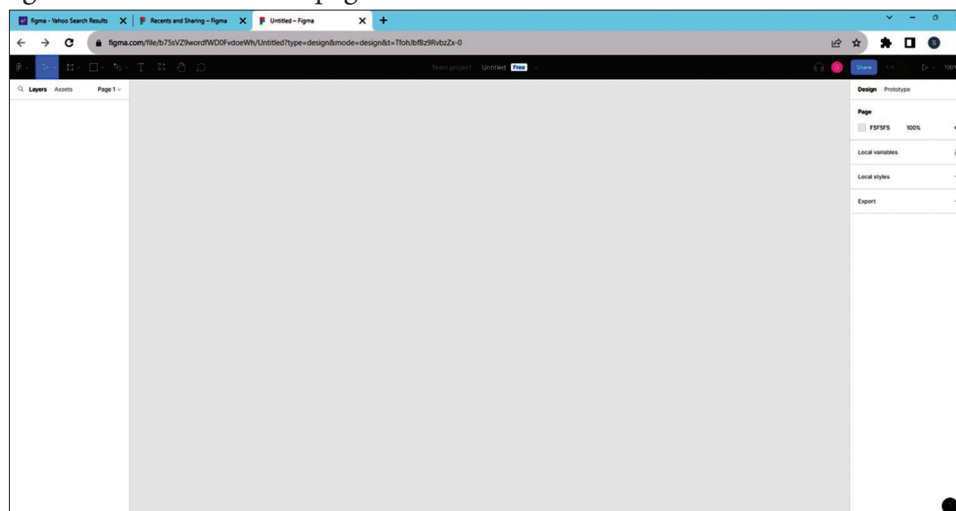


Start from presets and template.



Select 'Blank canvas'.

We are going to build our first draft page.

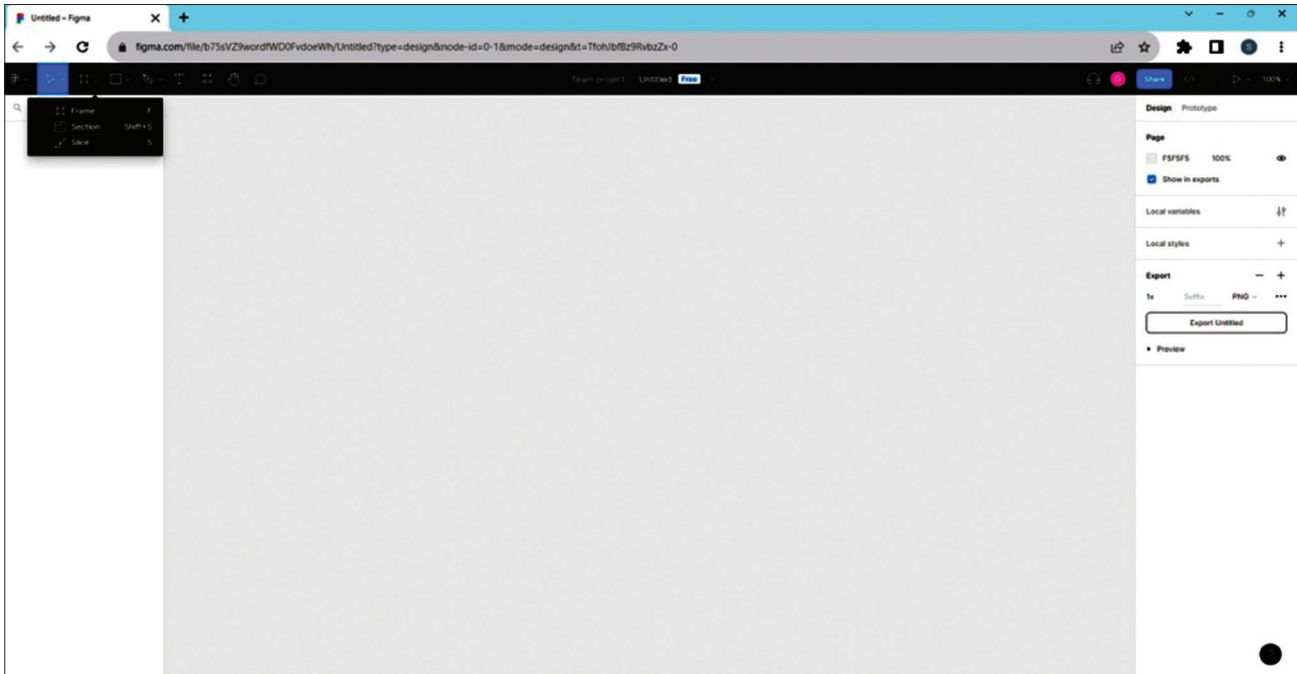


How to Make a Frame in Figma

First we will create a frame. This is the same as a page, and it's where our design will live. You can size a frame however you want depending on your requirements.

This example will be a website, so we will select the Desktop Frame – but you can also create mobile application frames, or even custom frames.

- Select the Frame tool from the top menu
- Select the Frame size on the right panel



How to Add Grids and Columns in Figma

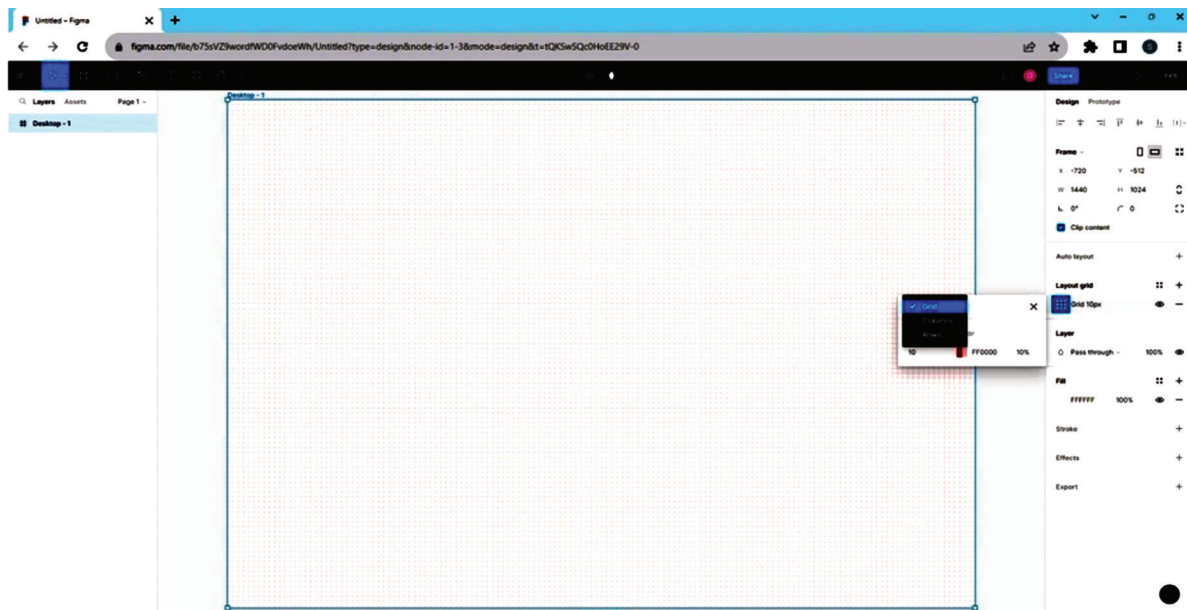
Before we start with the design, you will want to add grids that help you keep the alignment of content for your page consistent.

You can add grids to a frame and customize them. For example, I often prefer 12 grids as this is the default for website development.

- Select the frame you wish to grid
- Select Layout Grid on the right panel
- Select Columns and 12 units

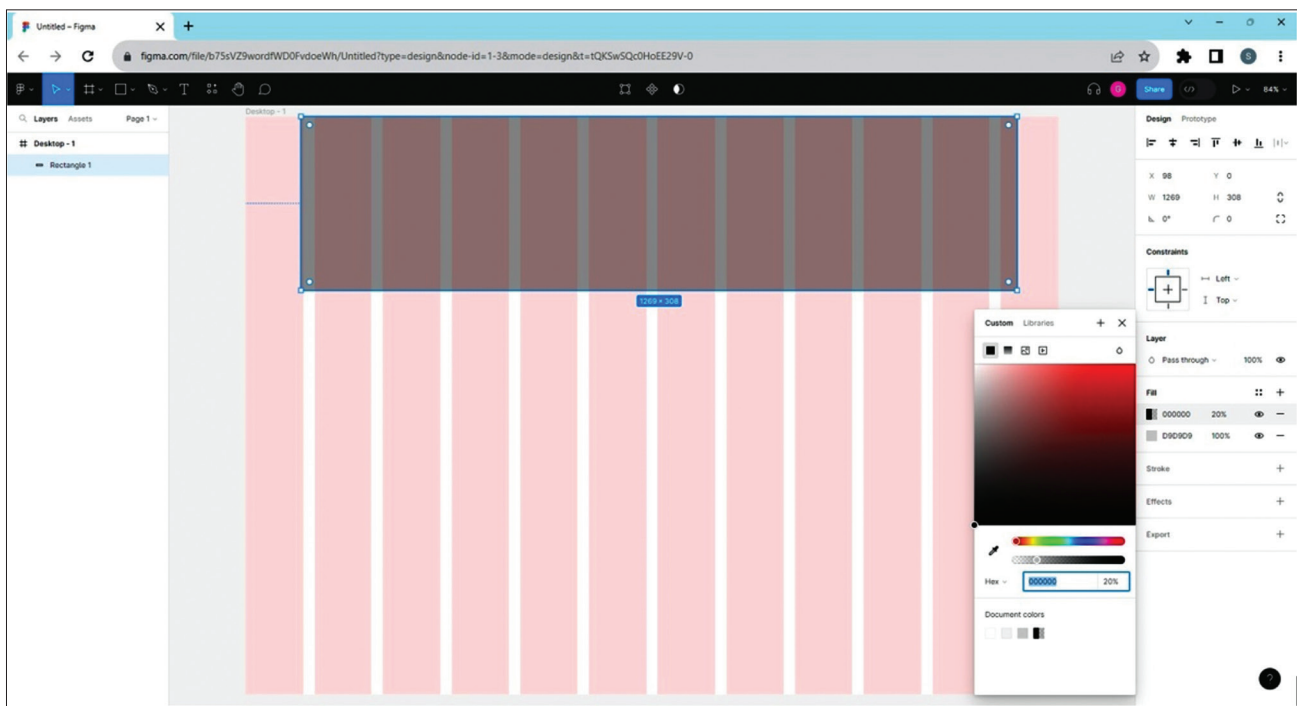
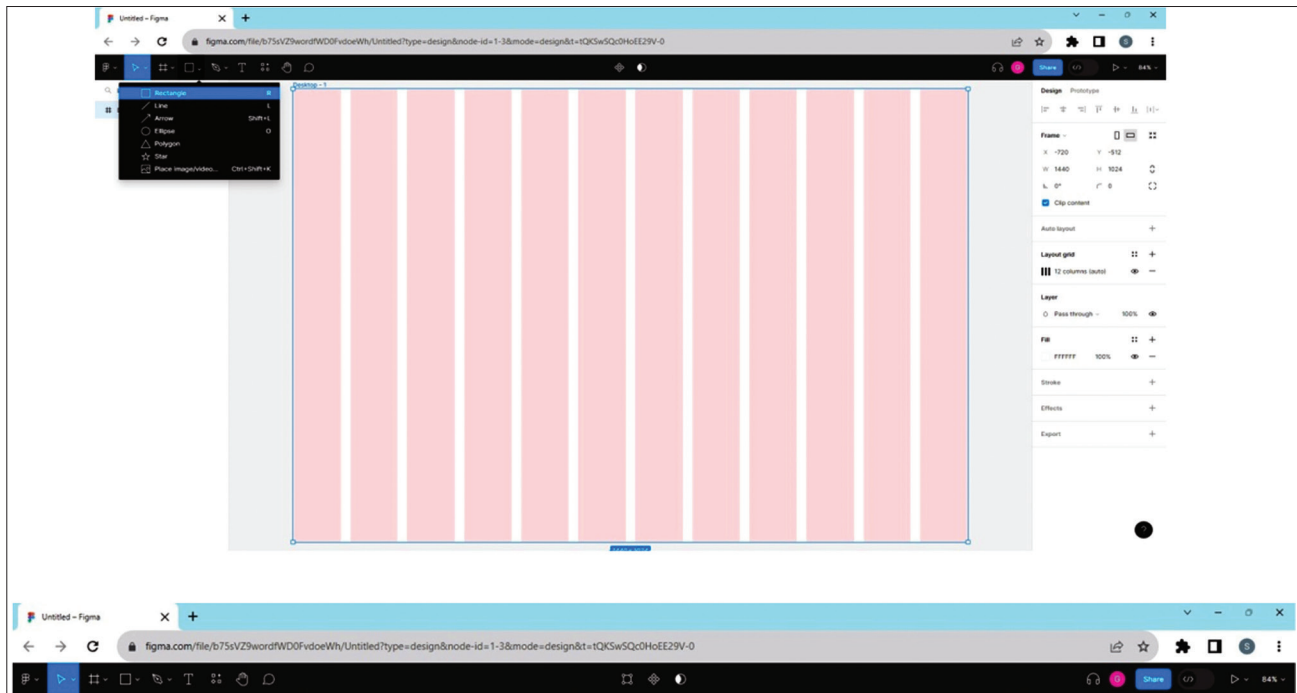
How to Use Shapes in Figma

Use the shapes and elements in Figma to create squares, circles, lines, and more. These are the fundamentals for creating a design on a page.



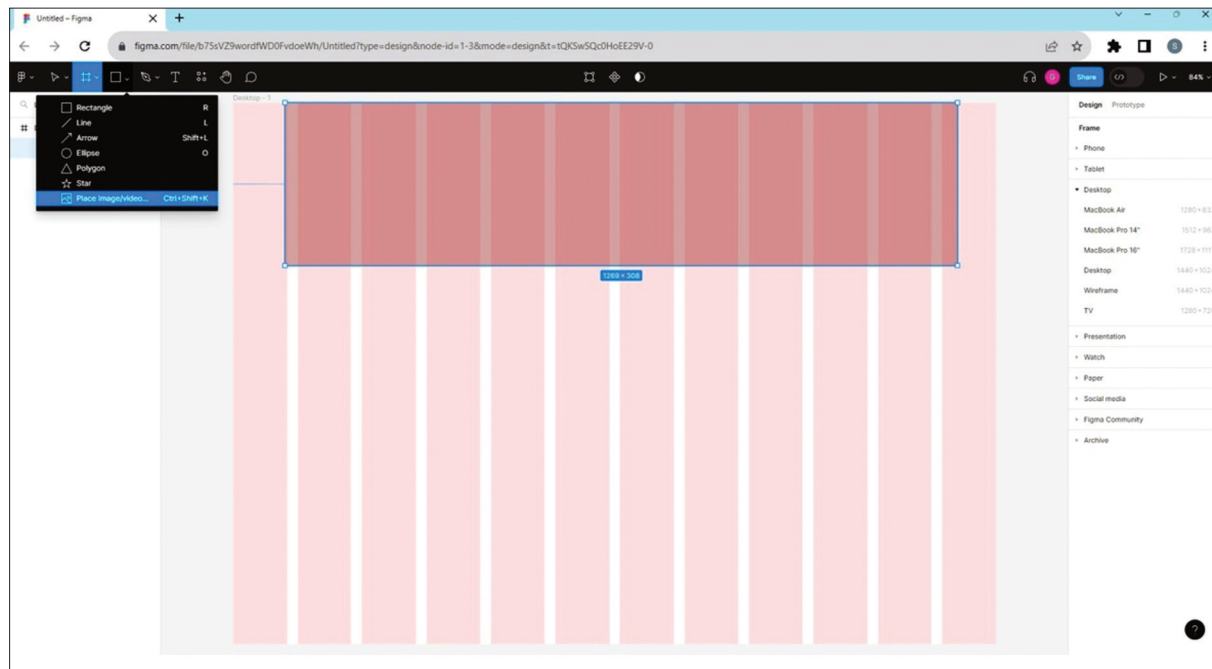
I'll start with a simple rectangle which we will use to create our hero navigation section for the top part of this home page.

- Select Square Shape tool
- Create a square
- Begin to shape and size it



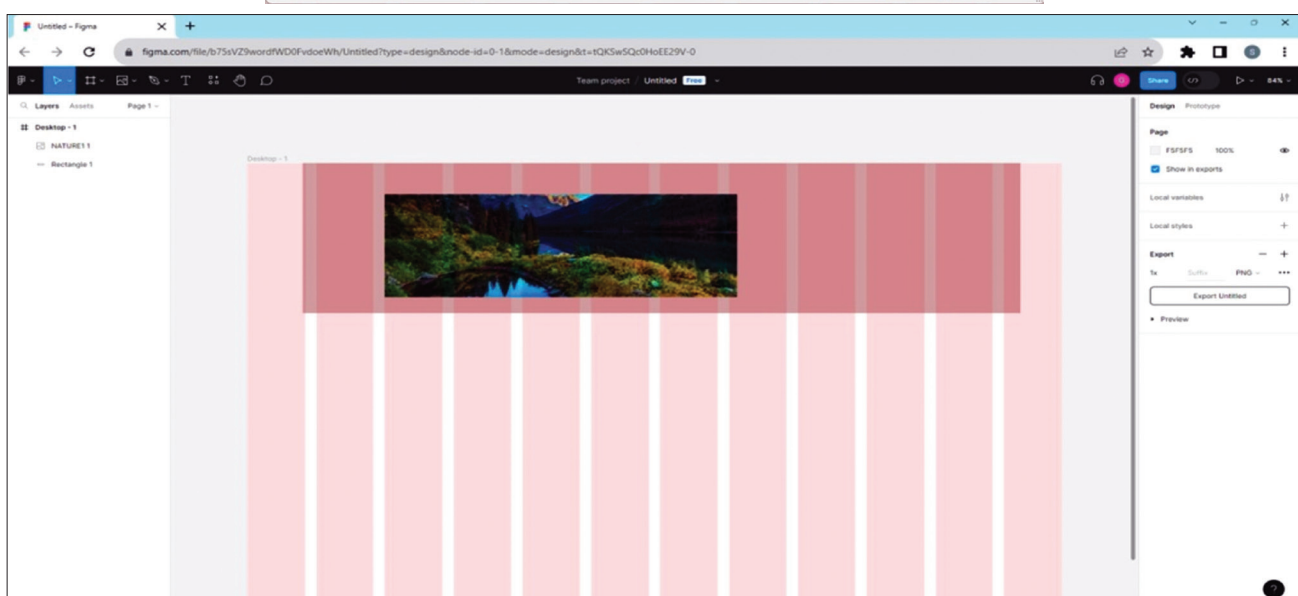
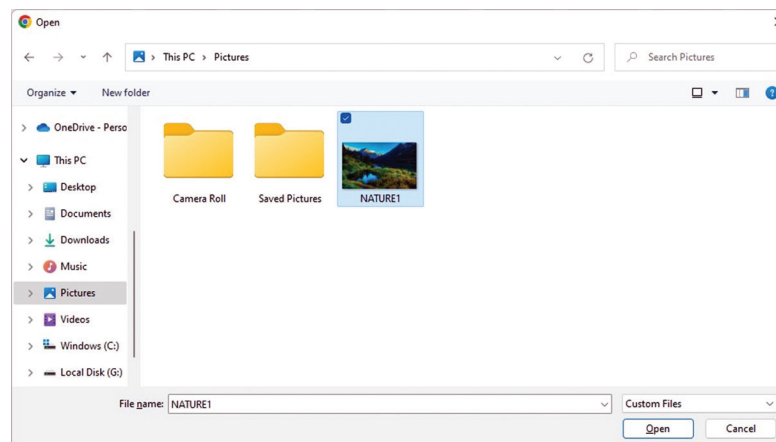
How to Add Images in Figma

You can add images from an online source or locally to your page. Images are an important part of designing a website, especially for the hero section.



Let's add a logo as our first image which we will add to the top left of the screen.

- Drag and drop an image from your local computer
- Import an image from the shapes image upload option
- Resize and place the image on the design



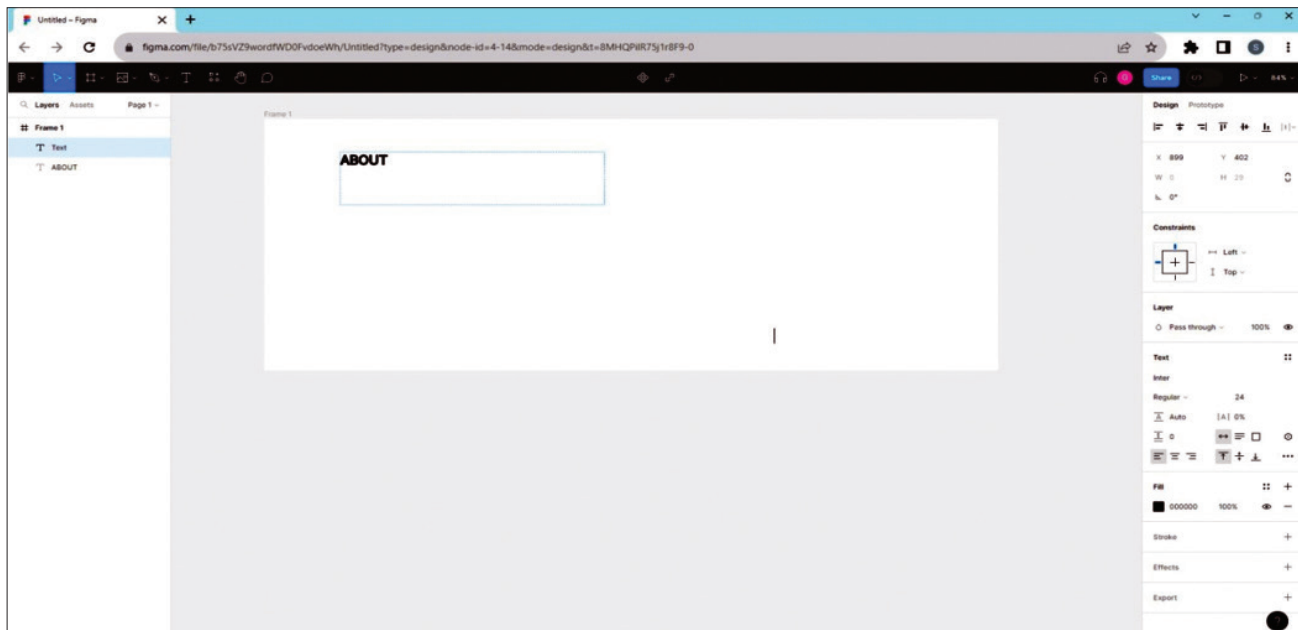


How to Add Text to a Design in Figma

To add text to a design, select the text tool and place it on the page. The font will default to Roboto, but you can change the font family, size, and color at any stage.

In this example we will use right panel to change the color and size of the font, and later the font family as well.

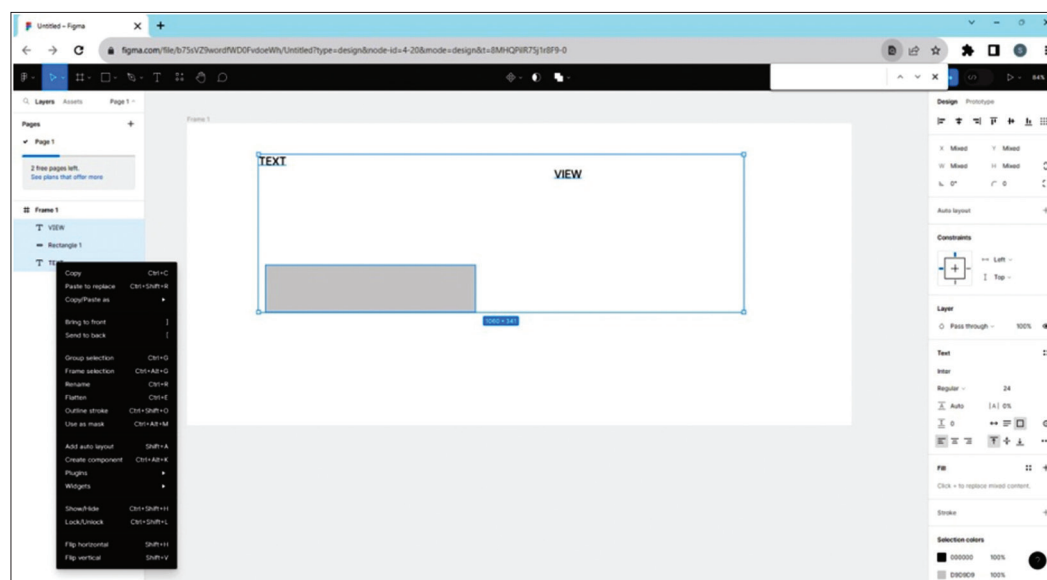
- Select the Text tool
- Add “About” text as the start of the navigation
- Ensure the size and color are 24 and white

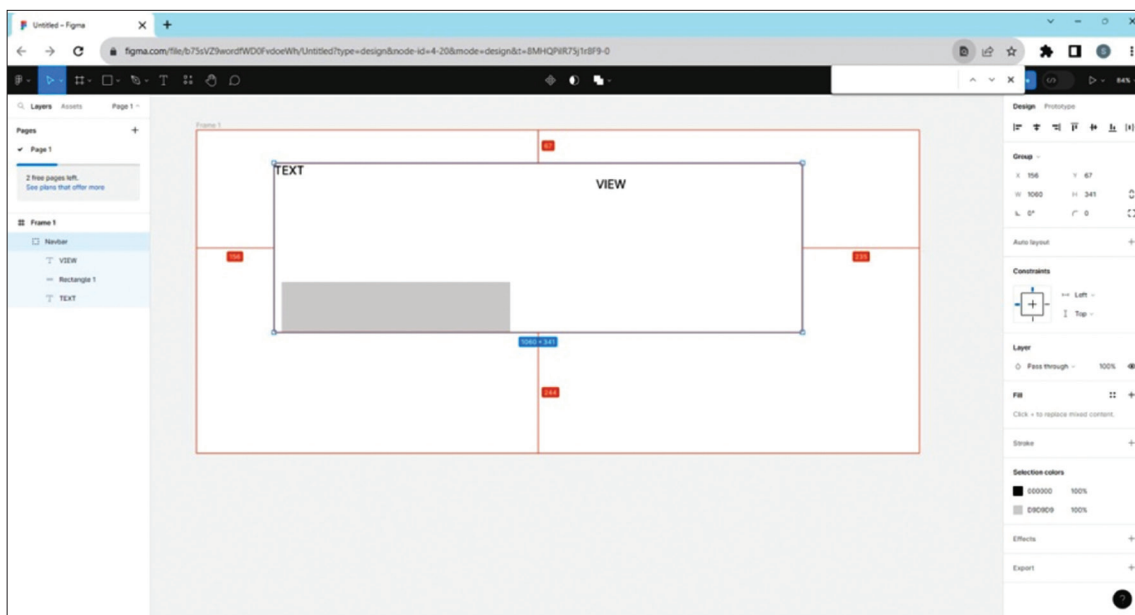


How to Label Elements and Create Groups in Figma

Working with lots of layers in Figma can get confusing, so label all your elements as soon as you create them. Even better is to group different sections and shapes with labels such as “Hero Background” or “Navbar”.

- Select your element/s and right click to group or press Ctrl + G
- Name your group
- Places groups inside groups for each section of your page to improve readability once your page gets large





Conclusion:

Figma is simple to start using, but there's a lot to learn to use it to its full potential. With the basics of shapes, images, and text, you can easily get started prototyping a website, designing a mobile application, and much more.

LAB EXERCISES:

Ex No 6: Creation of Presentation, editing, saving, Slide creation, Charts, Tables, Pictures, Smart Art, Slide Number, Header, Footer, Date, Shapes, Video and Sound, Slide Animation, Running a slide show, Print Preview using MS PowerPoint.

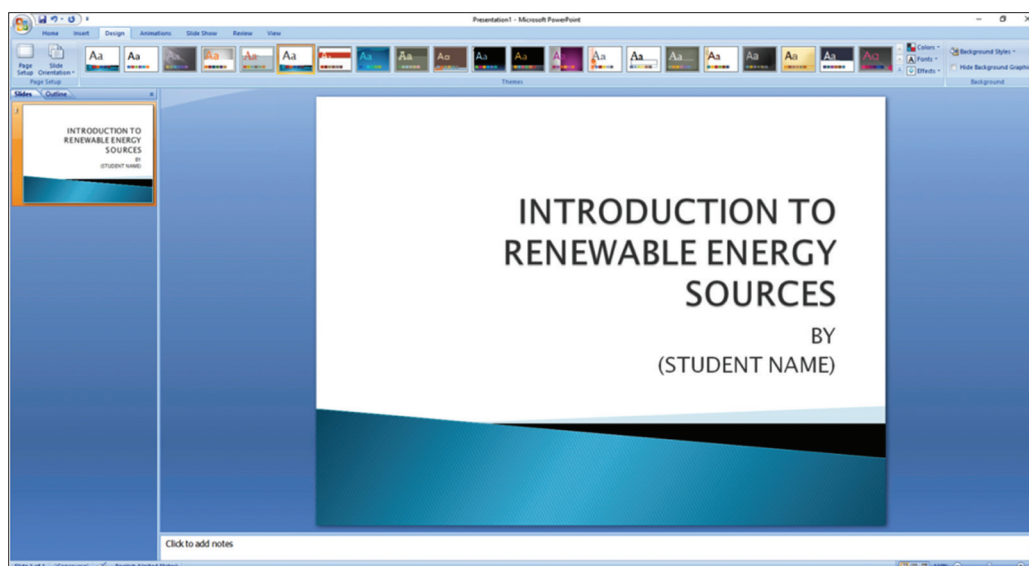
LAB EXERCISE: To do a presentation for "Introduction to Renewable Energy Sources" using MS PowerPoint.

AIM:

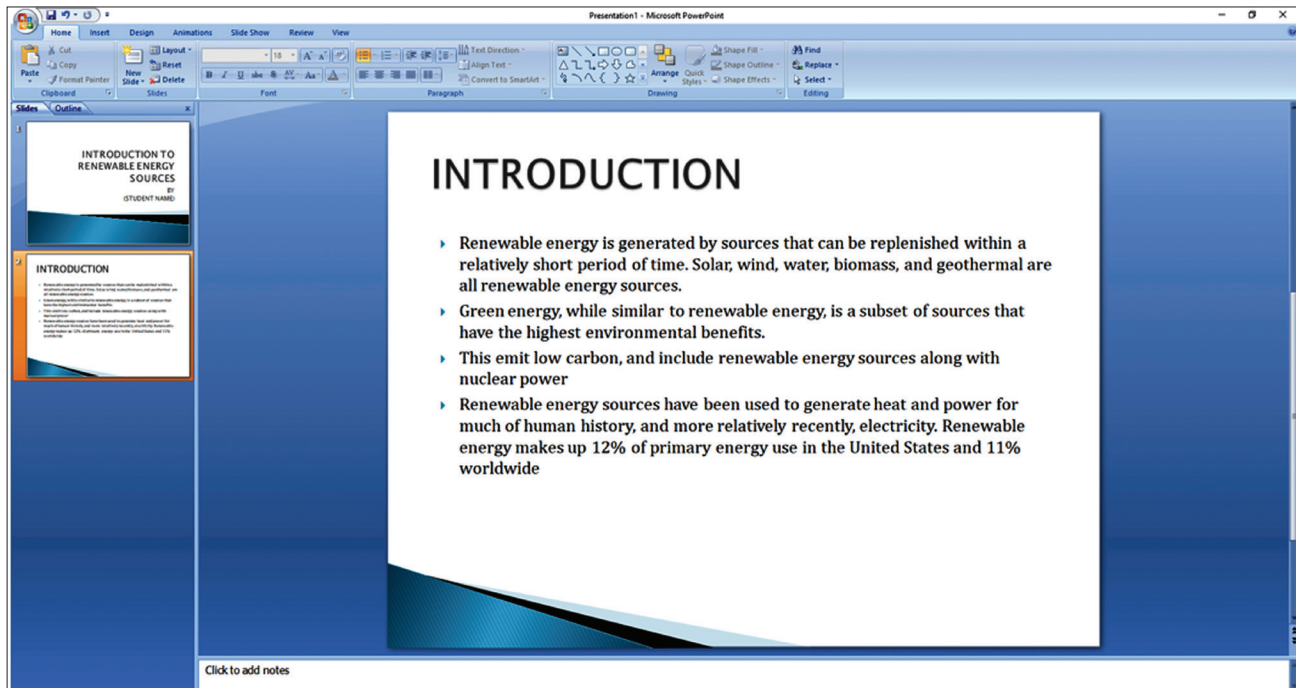
To create a presentation of minimum 5 slides for Renewable Energy Sources to present in a presentation using MS Powerpoint.

Procedure:

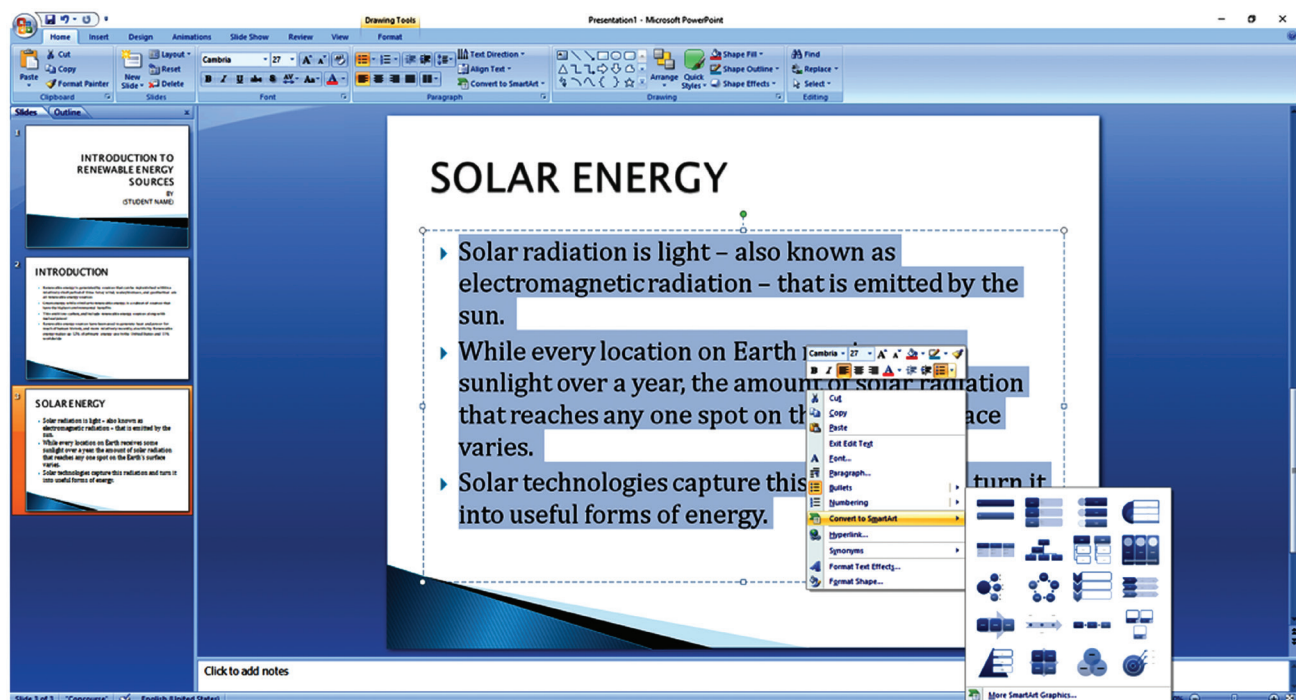
1. Launch Microsoft PowerPoint on your computer.
2. Choose a Presentation Template or start with a blank presentation and choose a "theme" from "Design" tab.
3. Click on the "New Slide" button in the toolbar. Add Slide 1 → Title Slide. Add title for the presentation, eg., "Introduction to Renewable Energy Sources.". Include your name and date (optional).

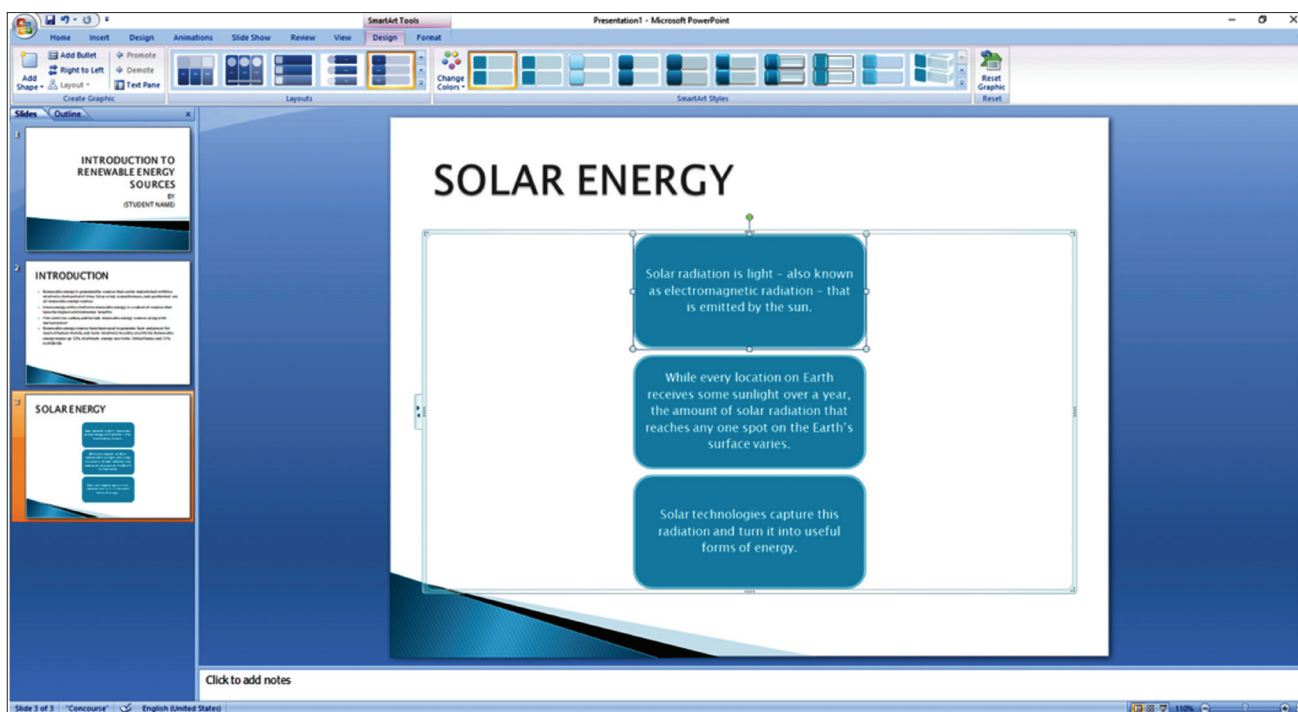


4. Add Slide 2 - Introduction.

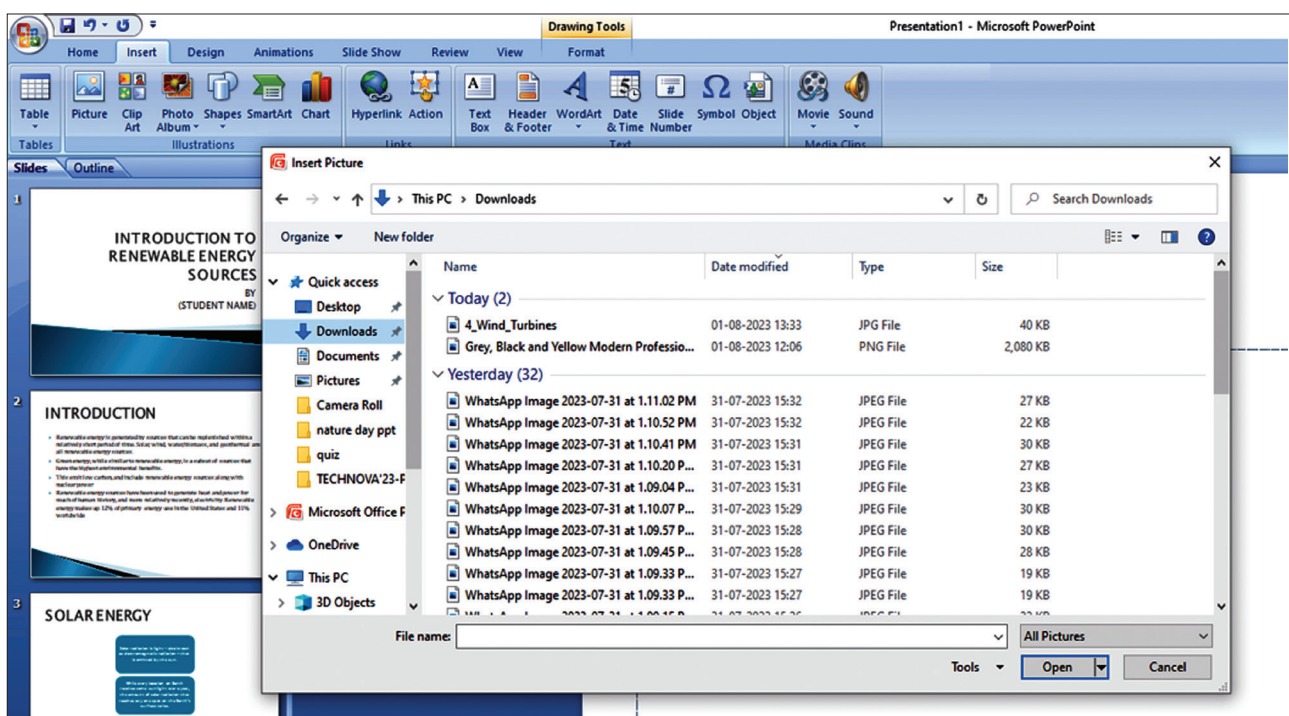


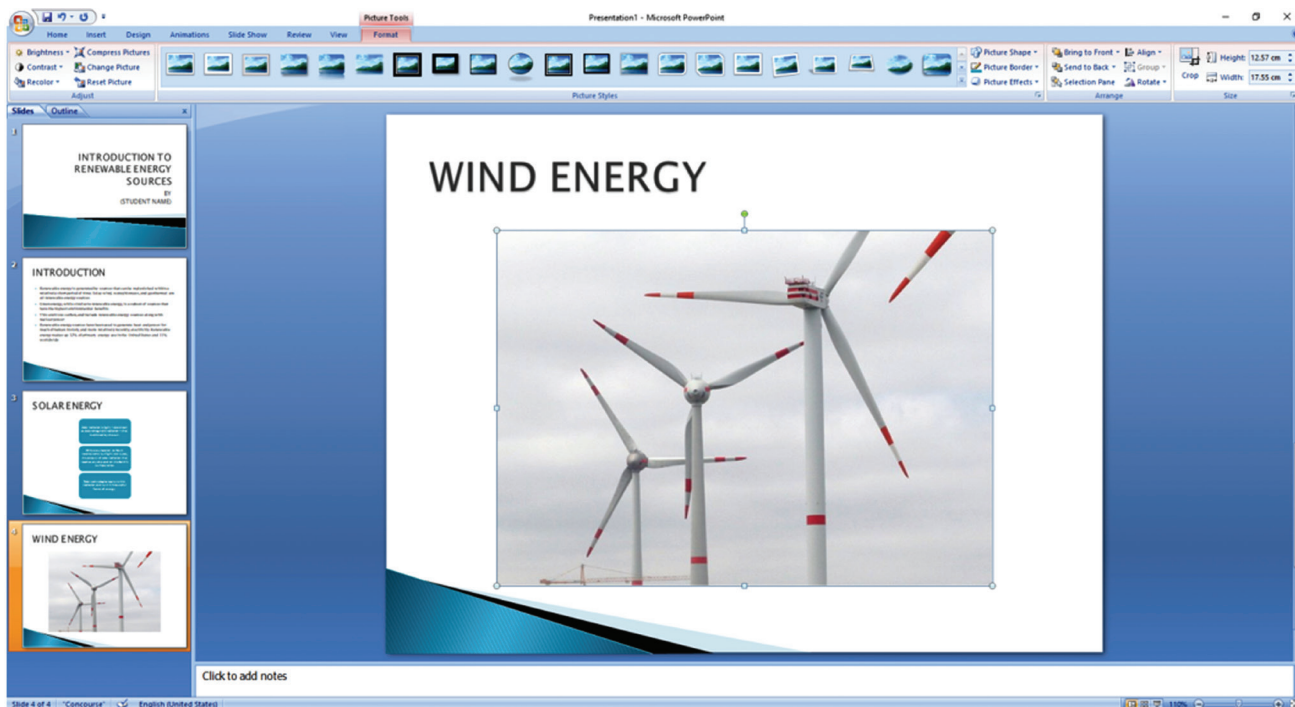
5. Add Slide 3 → Solar Energy and convert the contents into “Smart Art”. Go to the “Insert” tab and click on the “SmartArt” option. Choose a SmartArt graphic category, such as process, hierarchy, or relationship



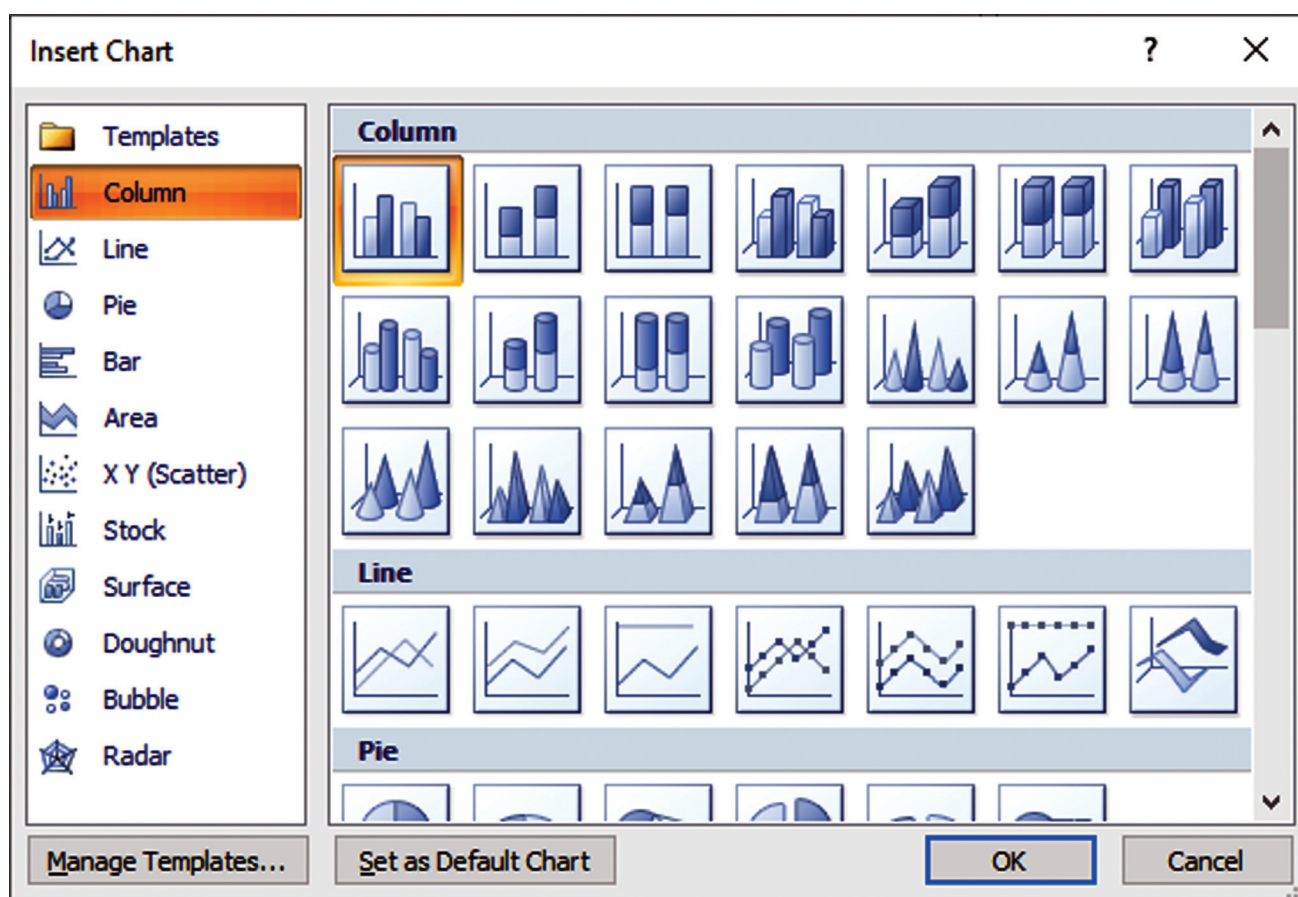


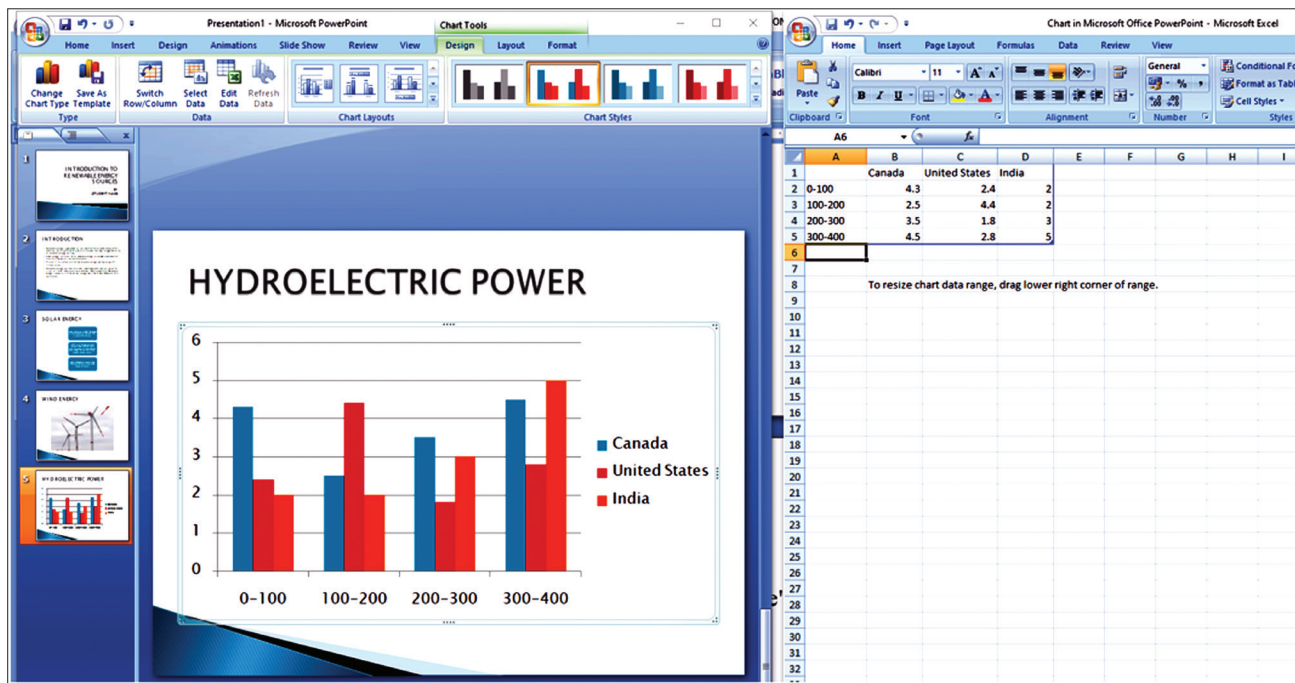
6. Add Slide 4 → Wind Energy. Go to the “Insert” tab and click on the “Pictures” option. Browse your computer for the image file and select it. PowerPoint will place the image on your slide. Use the sizing handles to adjust the image’s size and position, and use the image tools to apply effects, crop, or format the image





7. Add Slide 5 → Hydroelectric Power. Go to the “Insert” tab and click on the “Chart” option. Choose the type of chart you want to insert, such as a bar chart, pie chart, or line chart. Enter your data into the chart spreadsheet, and PowerPoint will generate the chart for you.



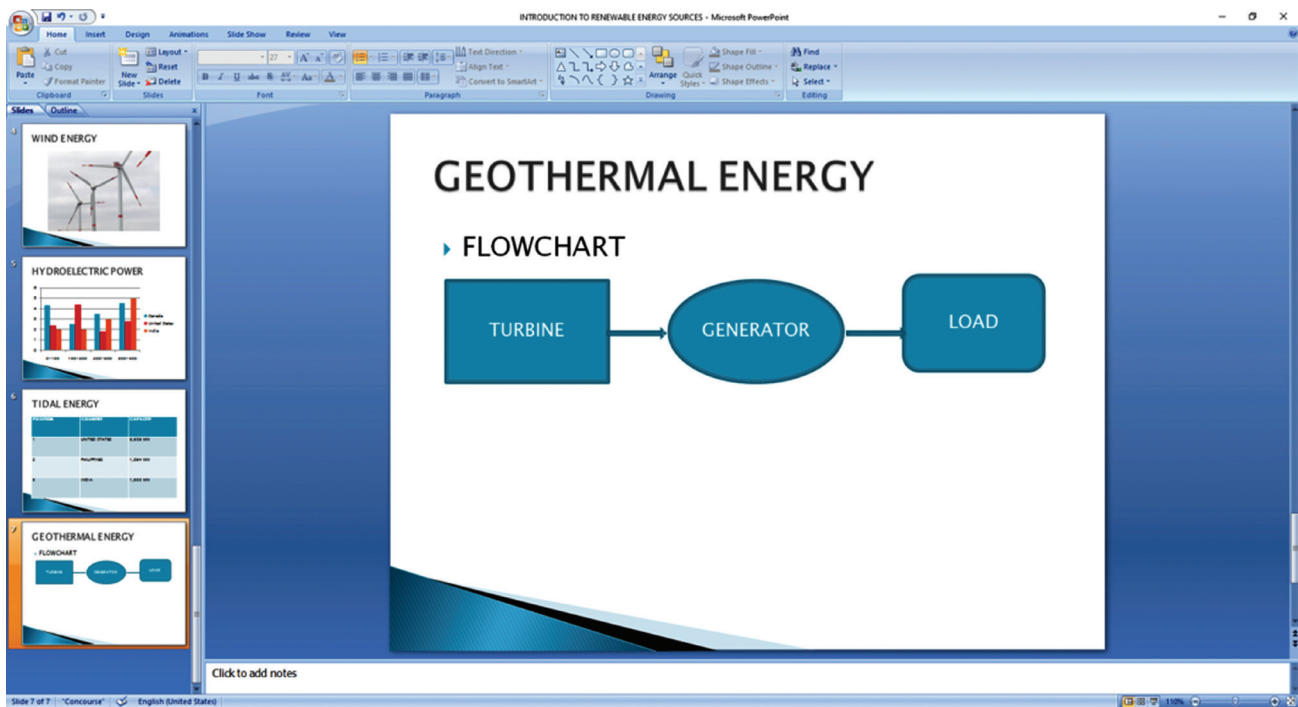


8. Add slide 6 → Tidal Energy. Go to the “Insert” tab and click on the “Table” option. Specify the number of rows and columns for your table, and PowerPoint will insert a blank table. Fill in the table cells with your desired content, and use the table tools to format the table’s appearance.

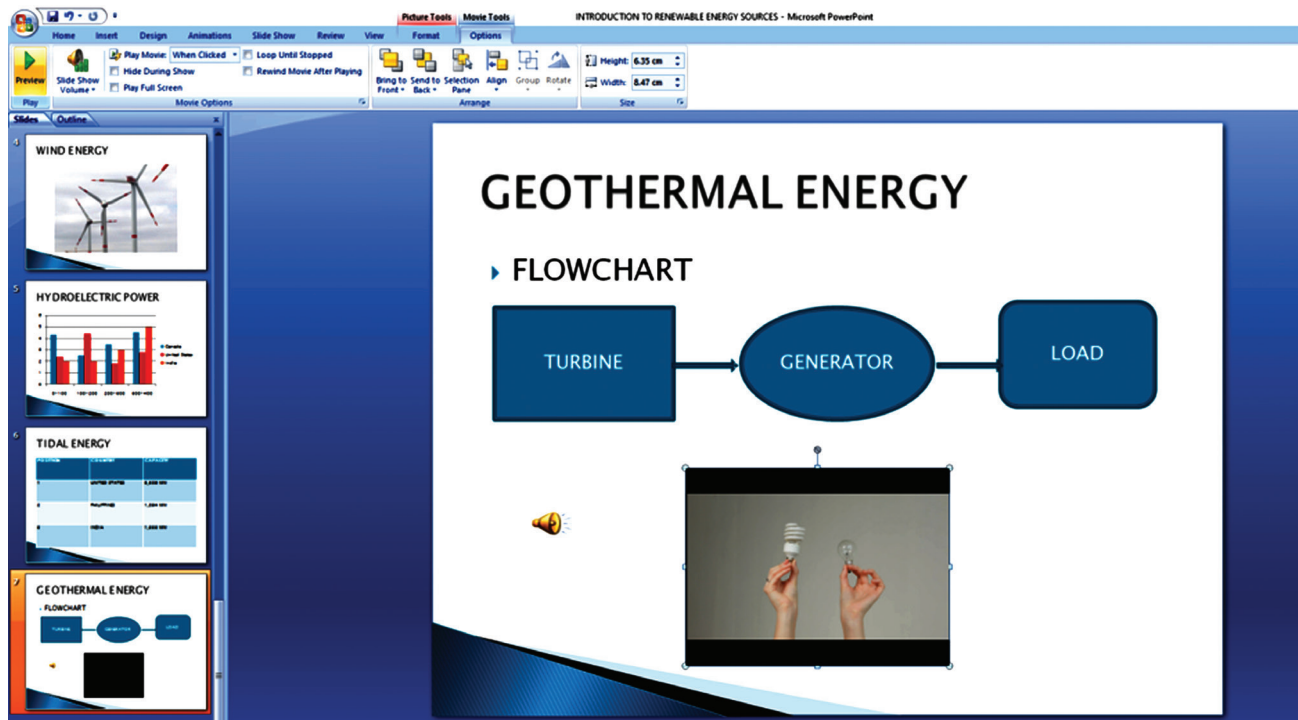
TIDAL ENERGY

POSITION	COUNTRY	CAPACITY
1	UNITED STATES	3,389 MW
2	PHILIPPINES	1,894 MW
3	INDIA	1,333 MW

9. Add Slide 7 → Geothermal Energy. Go to the “Insert” tab and click on the “Shapes” option. Choose the desired shape from the dropdown menu, and then click and drag on the slide to draw the shape.



10. In the above slide, go to the “Insert” tab in “and click on the “Video” or “Audio” option. Browse your computer for the media file and select it. Use media tools to control playback, adjust settings, or trim the media file



11. Add Slide Number, Header, Footer, Date: To add slide numbers, headers, footers, or the date to your slides, go to the “Insert” tab and click on the “Header & Footer” option. In the dialog box that appears, check the boxes for the elements you want to include and customize their settings as desired.

Header and Footer

Slide Notes and Handouts

Include on slide

☒ Date and time

☒ Update automatically

8/1/2023

Language: English (United States)

Calendar type: Western

☐ Fixed

8/1/2023

☒ Slide number

☒ Footer

copyrights reserved

☒ Don't show on title slide

Apply to All

Apply

Cancel

Preview

12. Add animations to your slides from the “Animations” tab. Apply entrance, exit, emphasis, or motion path animations to individual elements on the slide.



13. Save your presentation, click on the “File” tab, select “Save As,” and choose a location on your computer to save the file.

14. Go to the ‘View’ tab and click “Slide Show” to preview the presentation.



Result:

A presentation of 5 slides from Renewable Energy Source is created successfully.

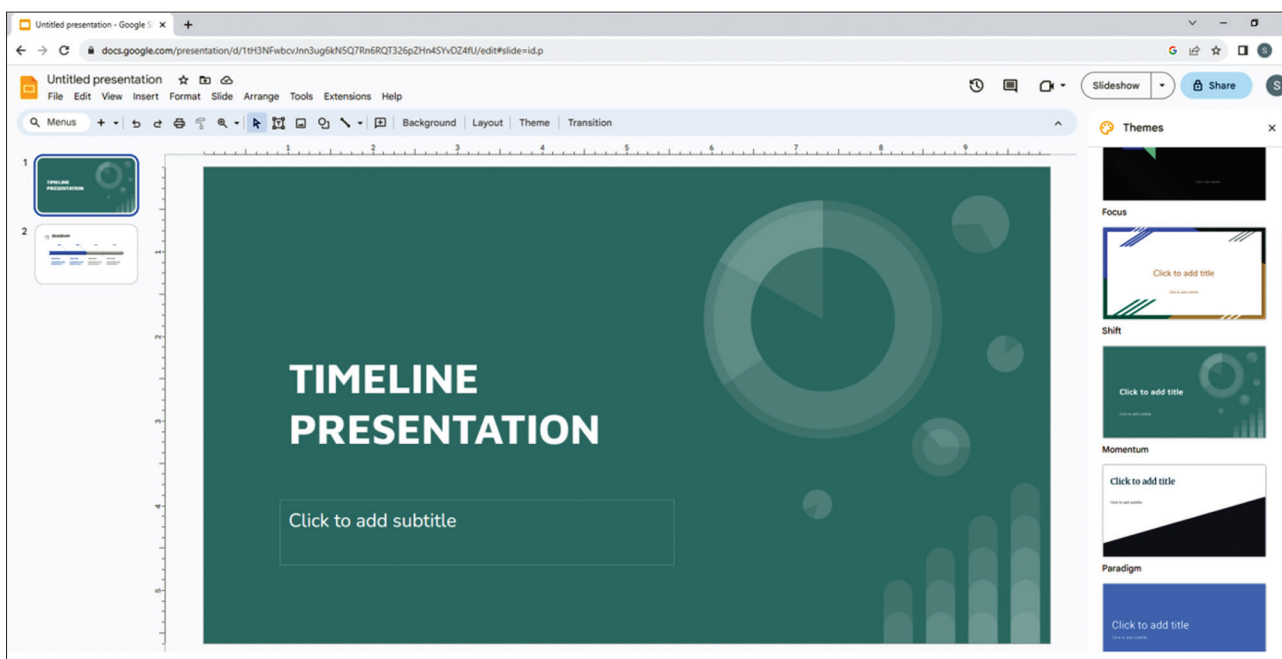
Ex No.6: Creation of Presentation, editing, saving, Slide creation, Charts, Tables, Pictures, Smart Art, Slide Number, Header, Footer, Date, Shapes, Video and Sound, Slide Animation, Running a slide show, Print Preview using Google Slide.

LAB EXERCISE: To create a Timeline using Google Slides.

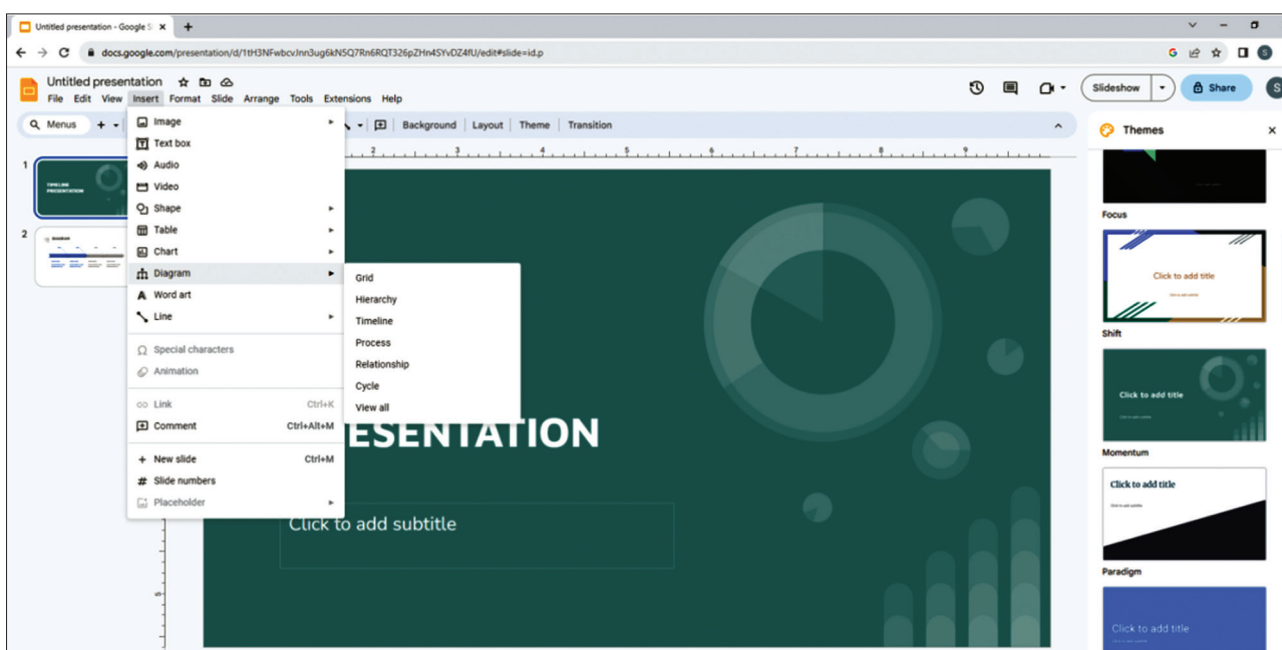
AIM: To create a Timeline using Google Slides.

PROCEDURE:

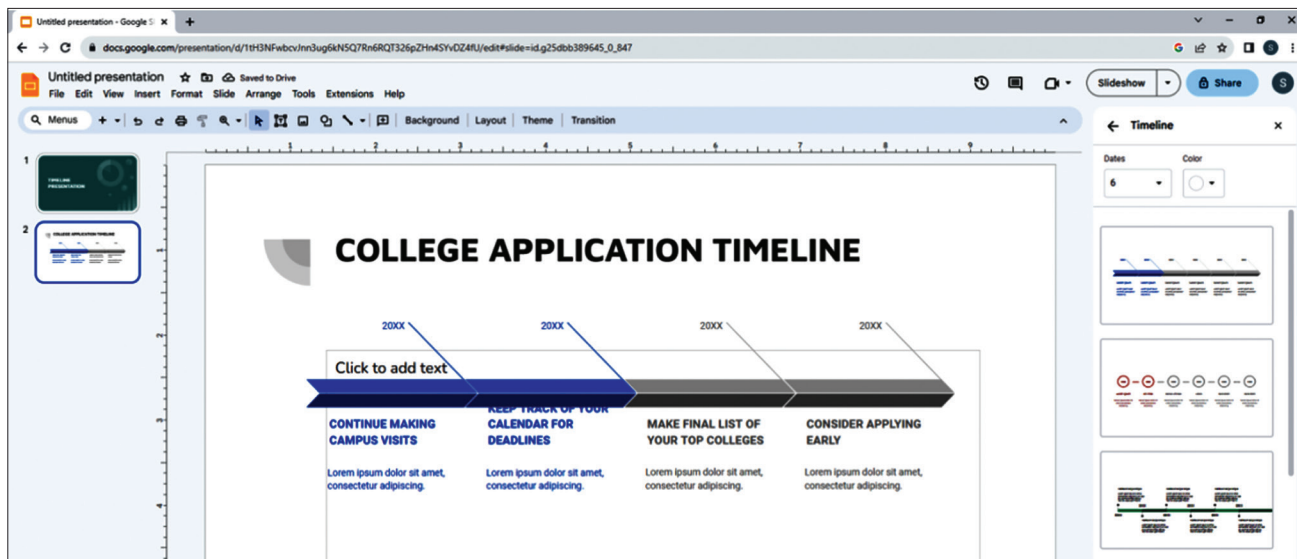
1. Open your Google Slides presentation. Add “Title Slide” with heading as “Timeline Presentation” and select a “theme” for the slide.



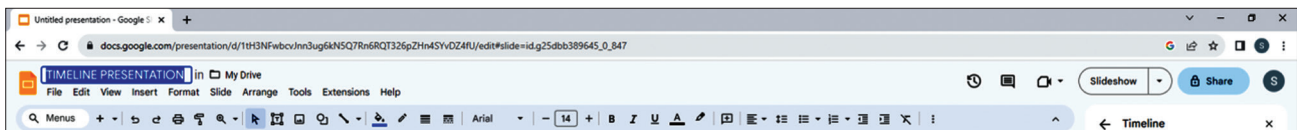
2. Add a new slide from “+” button. Select “Insert” and select “Diagram”. In the diagram select “Timeline”.



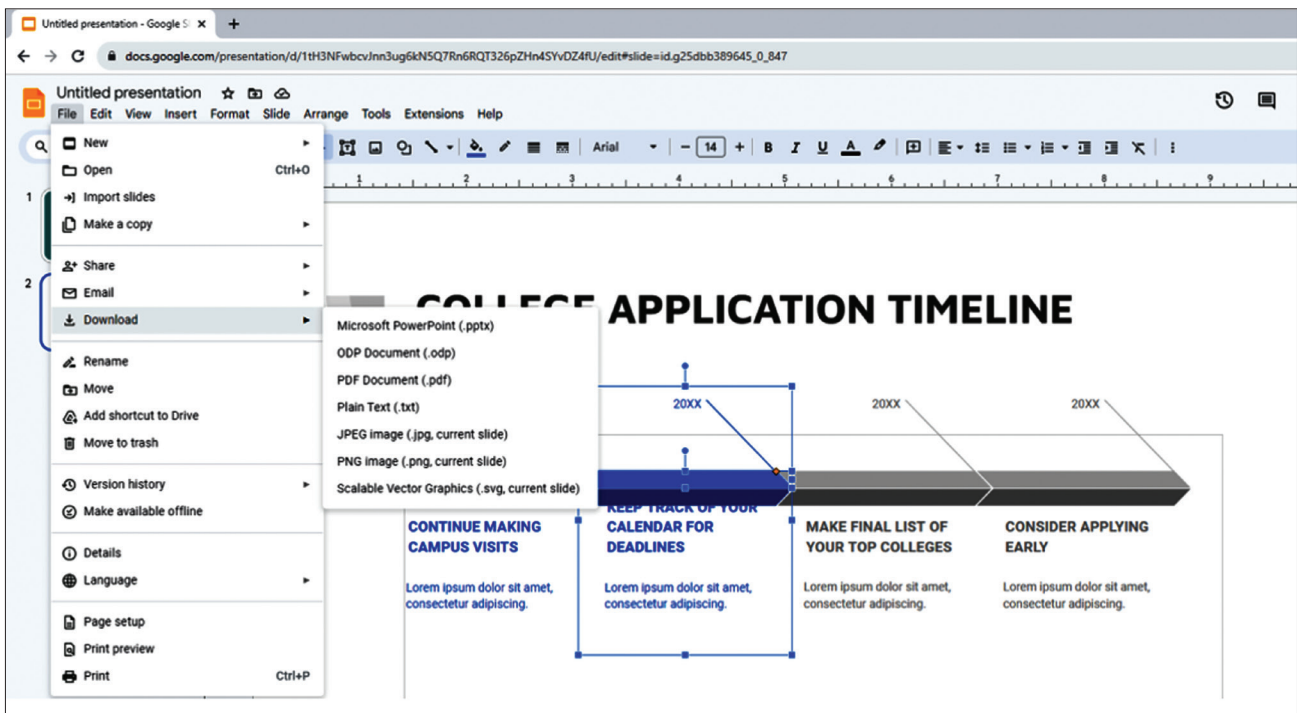
3. Select the Timeline template from the right sidebar. Configure your diagram by using the Dates and Color drop-down menus.
4. Edit the different field texts and add information to the timeline.



5. Rename the presentation.



6. Select "File" and select "Download". Select "Microsoft PowerPoint(.pptx)"



RESULT:

Thus the "Timeline" presentation has been designed successfully using Google Slides.

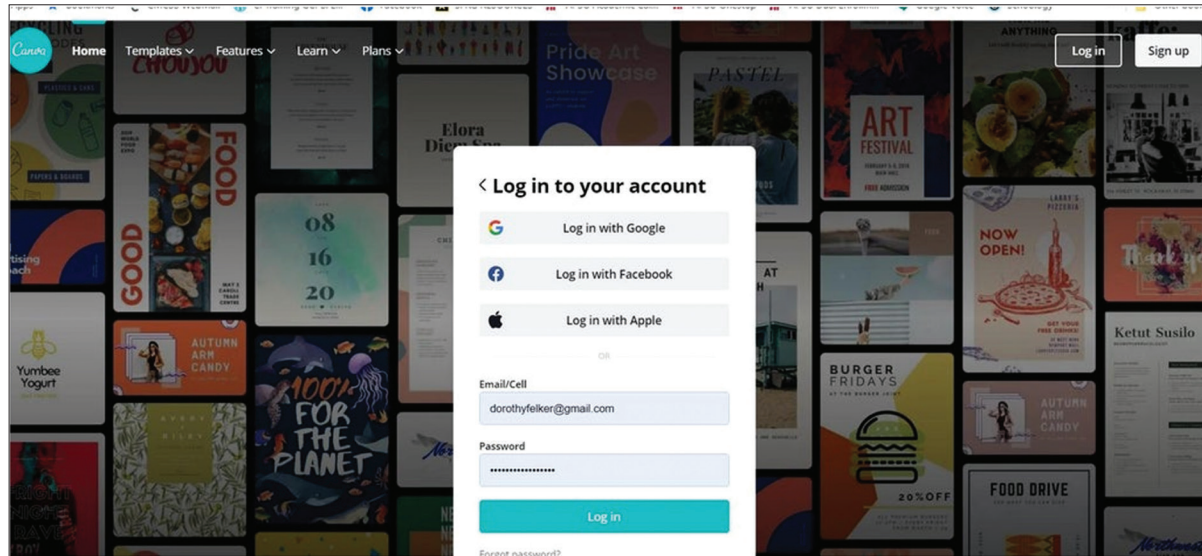
Ex No.7 (a) : Designing with Canva

LAB EXERCISE: To design Event poster with canva.

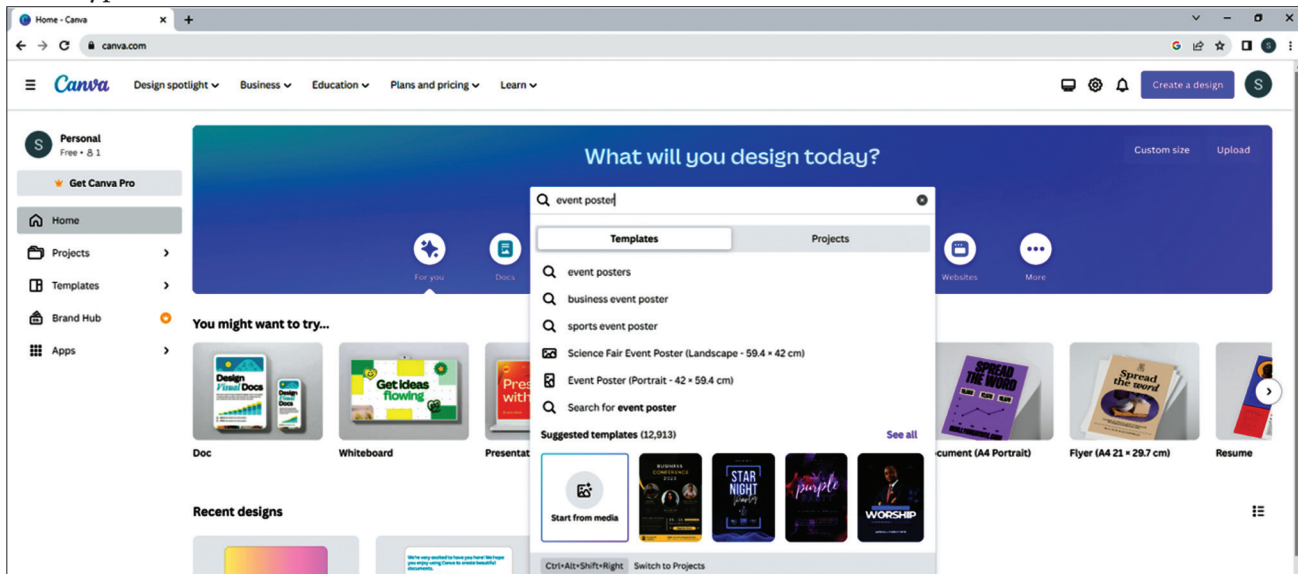
AIM: To design Event poster with canva.

PROCEDURE:

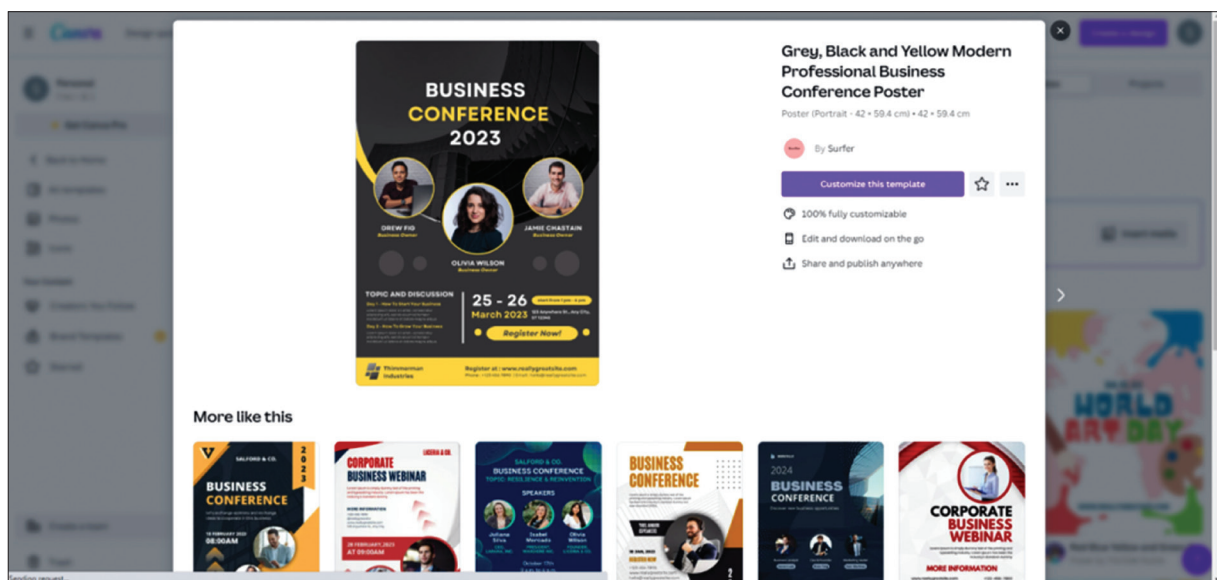
1. Sign Up for a Free CANVA Account.



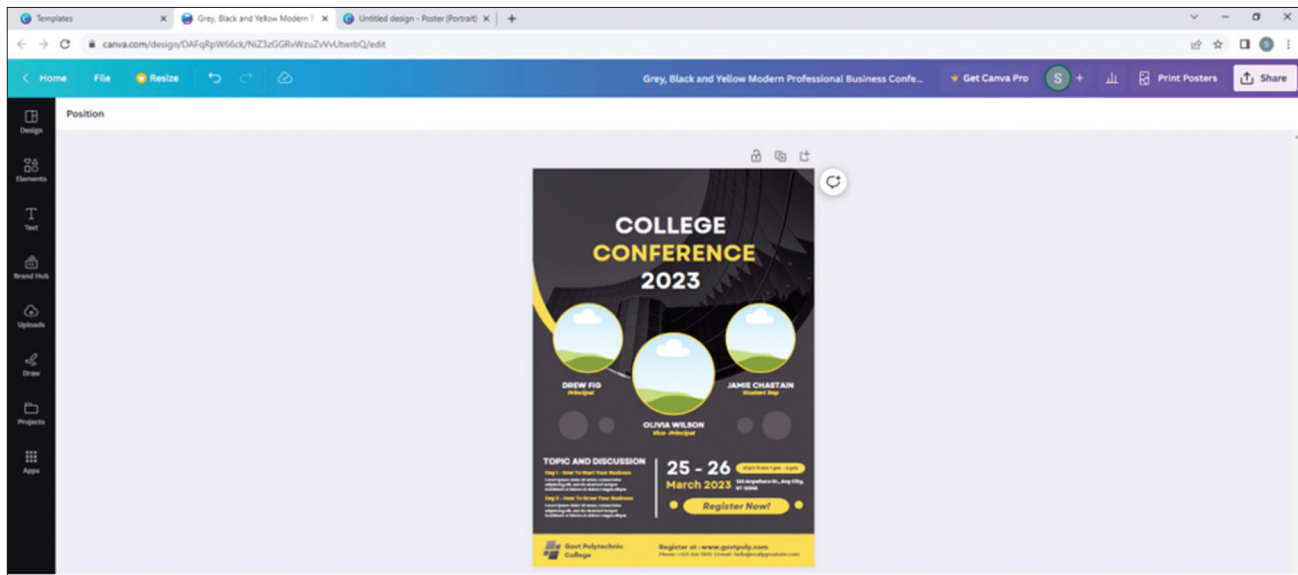
2: Type "Event Poster" in the Search Bar.



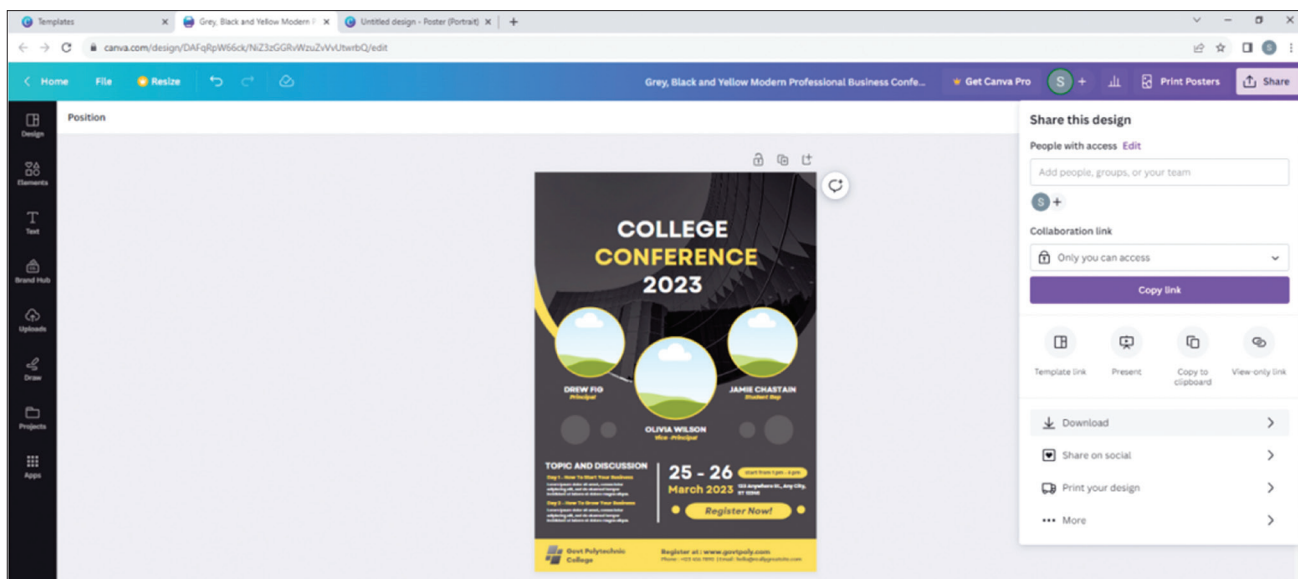
3: Select 'Business Conference Poster' template.



4: Select “customize this template”. And Edit the title and the needed information.



5: Click “Share” and select “download”.



6: Select file type as 'png' and download.



RESULT:

Thus the Event poster using canva is designed successfully.

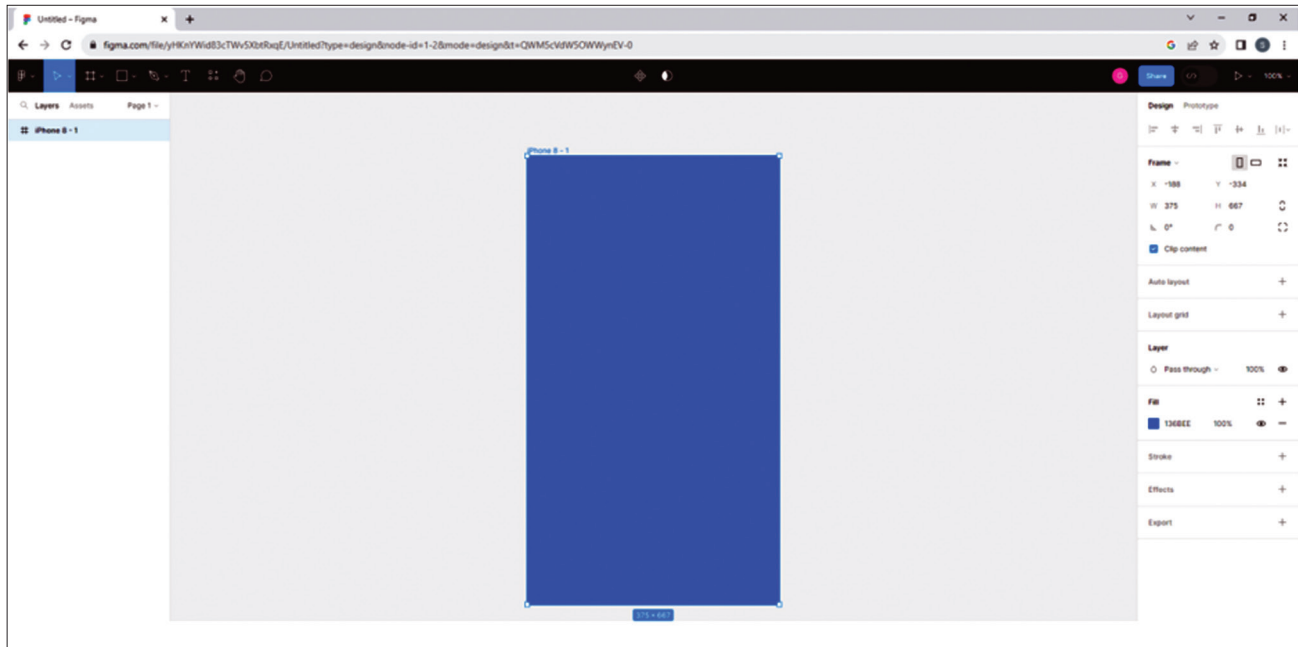
Ex No. 7 (b): Designing with Figma

LAB EXERCISE: Designing an mobile app screen with figma.

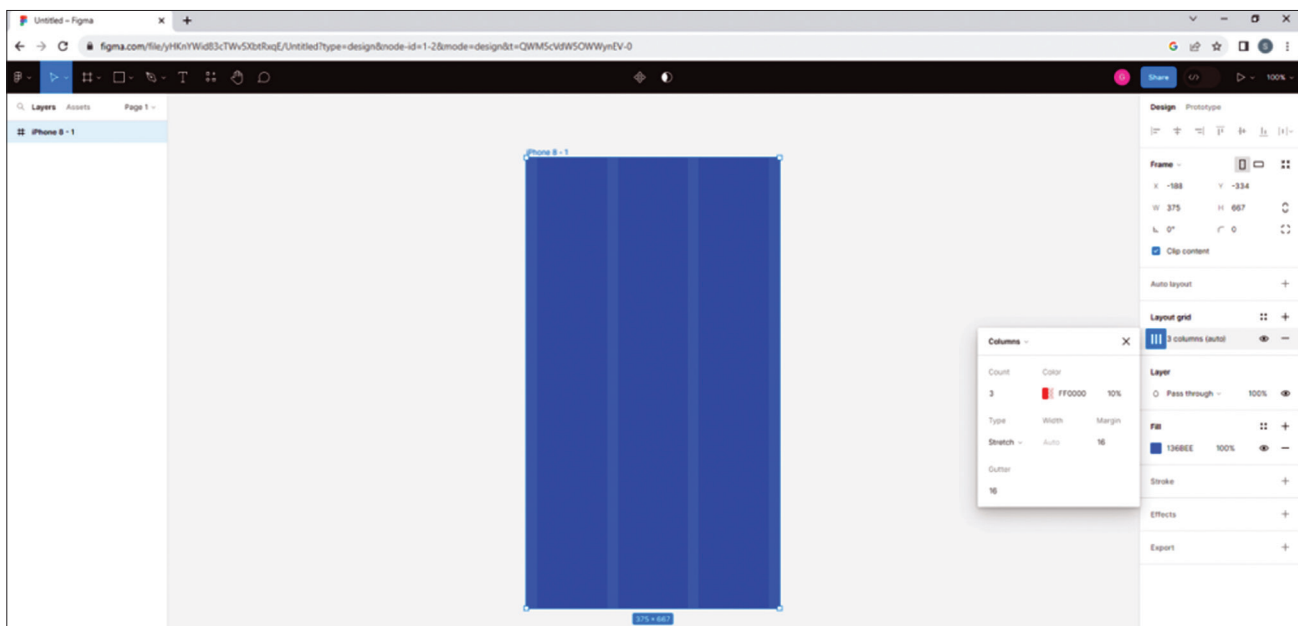
AIM: To design mobile app screen with figma.

PROCEDURE:

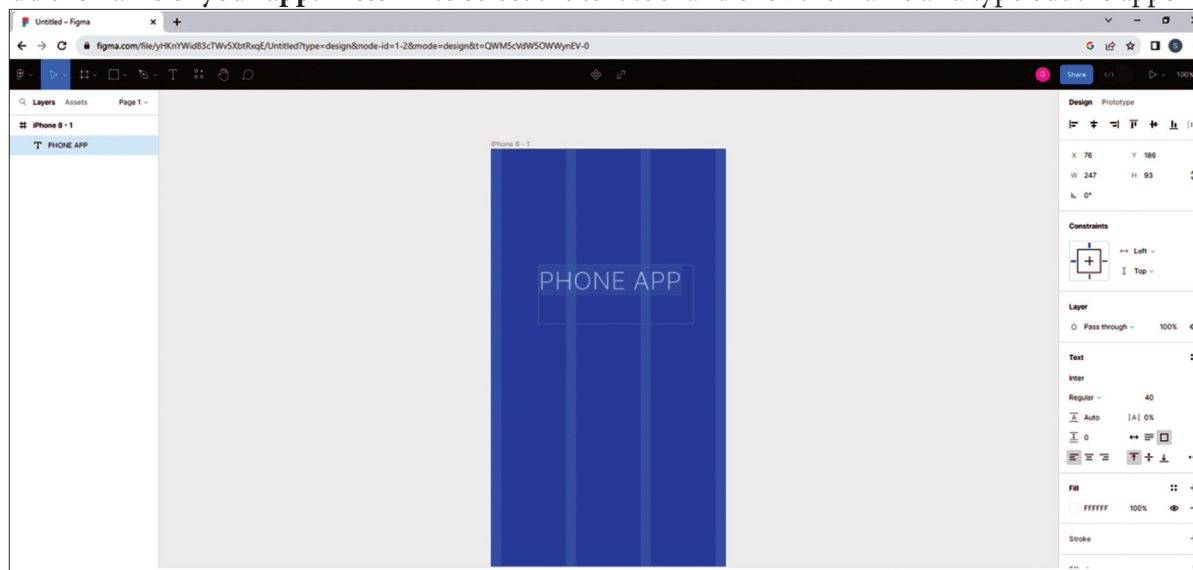
1. **Open up your Figma file, and create the Frame for your app screen:** Hit “F” to select the frame tool and pick ‘iPhone8’ from the right of the window. Change the background color.



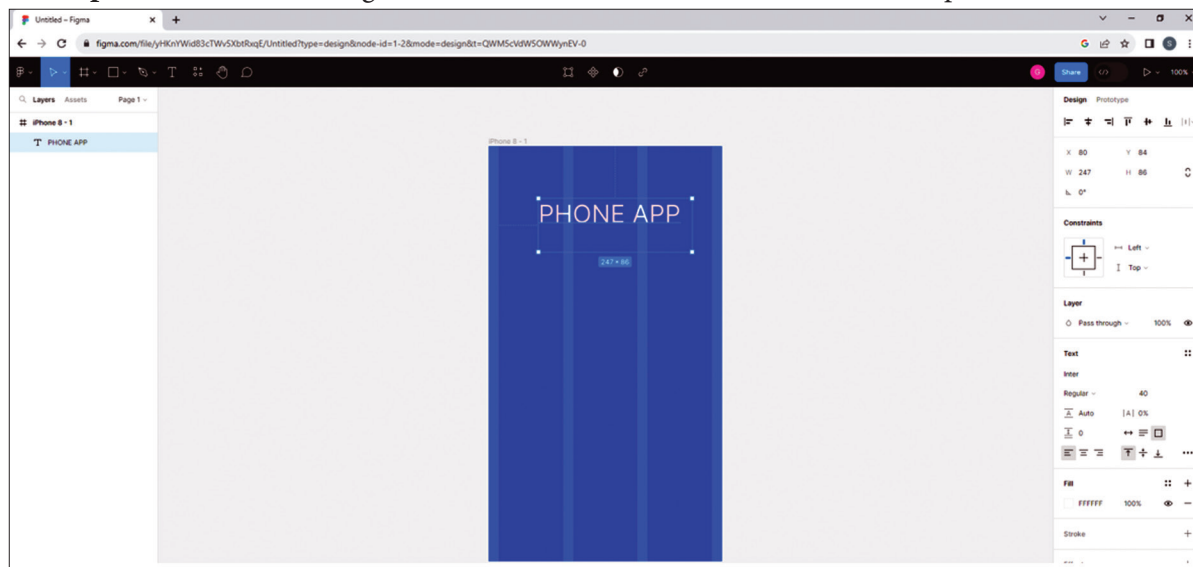
2. **Add a column grid:** Click ‘+’ icon in the “Layout Grid” and give count as ‘3’, Gutter as ‘16’ and Margin as ‘16’.



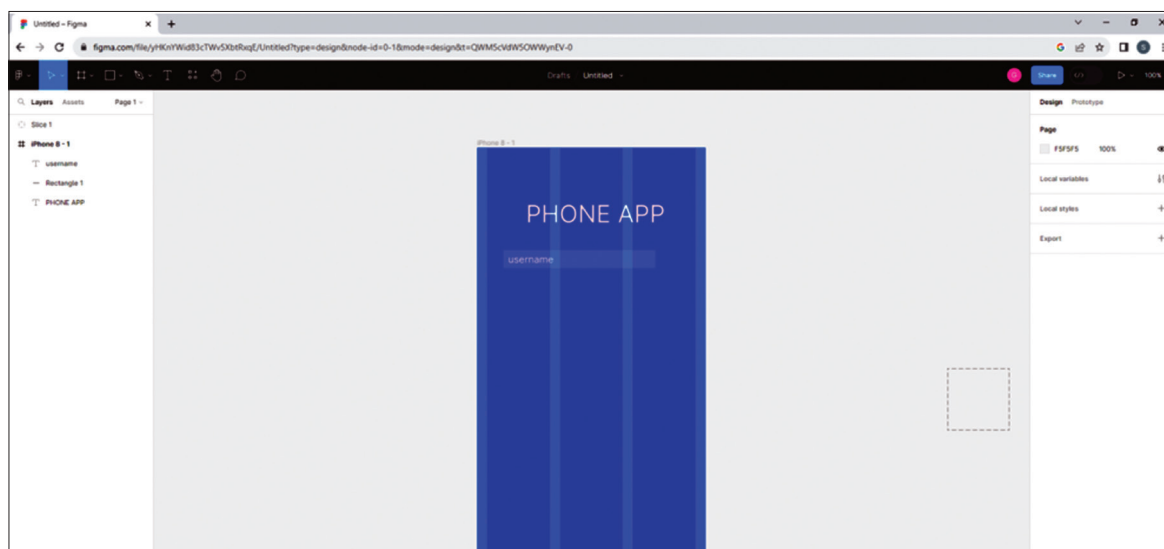
3. Add the name of your app: Press ‘T’ to select the text tool and click the frame and type out the app’s name.



4. Reposition the title: Drag on the text and move it around the frame to reposition it.

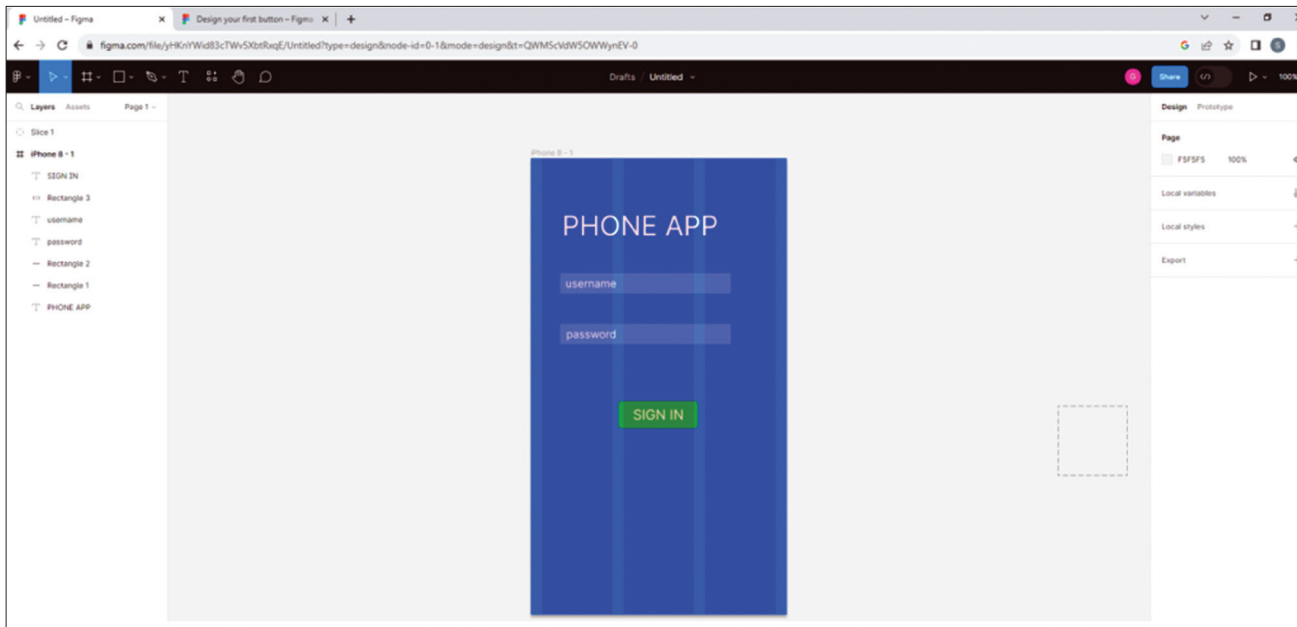


5. Create the username field: Select the Rectangle tool “R” and click and drag the rectangle about 250 pixels wide and 30 pixels high. Change the opacity setting from 100% to 25% to make it semi-transparent. Press “T” and click anywhere in the frame and type “Username” and set font size as ‘16’.



6. **Duplicate the username field to create a password field:** Copy(Ctrl+C) the rectangle and text tool created above and paste it (Ctrl+V) and drag it to the position and rename the as 'password'.

7. **Create 'Sign In' button:** Select the Rectangle tool "R" and click and drag the rectangle. Press "T" and click anywhere in the frame and type "SIGN IN" and set font size as '20'. Select the frame again and use the setting in the right sidebar to change the corner radius to 6.



RESULT:

Thus the mobile app screen using figma is created successfully.



UNIT V

COMMUNICATION TOOLS AND INTRODUCTION TO INFORMATION SECURITY

Introduction to email and usage :

Email is short for electronic mail and it is defined as the transmission of electronic mail/messages from one internet user to another. Email software is intended to communicate important information for both personal and business needs.

Sending a message using email is much like sending a letter(mail) to a person to their home address. But here the letter(mail) is written digitally on a computer or mobile instead of handwritten on paper and it is sent to their email address instead of their home address.

Email Service Providers:

Email service is provided by various software firms. Some of them are Google, Outlook, Yahoo, Neo, Zoho, Campaigner, Hubspot. A person needs to create their own email account in any of the email service provider platforms. Each email account is assigned with a unique email address, which is also known as email id or user id.

Email Address:

An email address consists of two parts, a local part and a domain. The general format of an email address is local-part@domain. The domain part specifies the email service provider. The local-part is unique for each email id and it is chosen by the user which is not yet taken by anyone else in that domain. It is always good to choose a professional readable and memorable user id.

In general, the local part can have these ASCII characters:

- Lowercase letters: abcdefghijklmnopqrstu vwxyz,

- Uppercase letters: ABCDEFGHIJKLMNOPQRSTUVWXYZ,
- Digits: 0123456789,
- Special characters: !#\$%&'*+,-/=/?^_`{|}~,
- Dot: . (not first or last character or repeated unless quoted),
- Space punctuations such as: "(),;,<>@[\\] (with some restrictions).

Google's mail or Gmail:

Gmail is the most prominent email service. Gmail can be accessed from the web using a browser and as an application in mobile devices to send or receive emails. The domain part of the Gmail address is always "gmail.com".

If a person named "Jakson Dev" who was born on 20.5.2007 is creating a gmailaccount,he can opt for jacksondev@gmail.com or jacksondev.2007@gmail.com or jacksondev20.5.2007@gmail.com and choose whichever is available.

Gmail account creation steps:

To create a Gmail account, follow these steps:

1. Go to the Gmail account creation page:

Open web browser and visit <https://www.google.com>.

Click Sign in → Create account

2. Fill in the required information: On the account creation page, provide the following information:

- a. First name and last name:** Enter your legal first and last name.

- b. **Username:** Choose a unique username for Gmail address.
- c. **Password:** Create a secure password for your account.

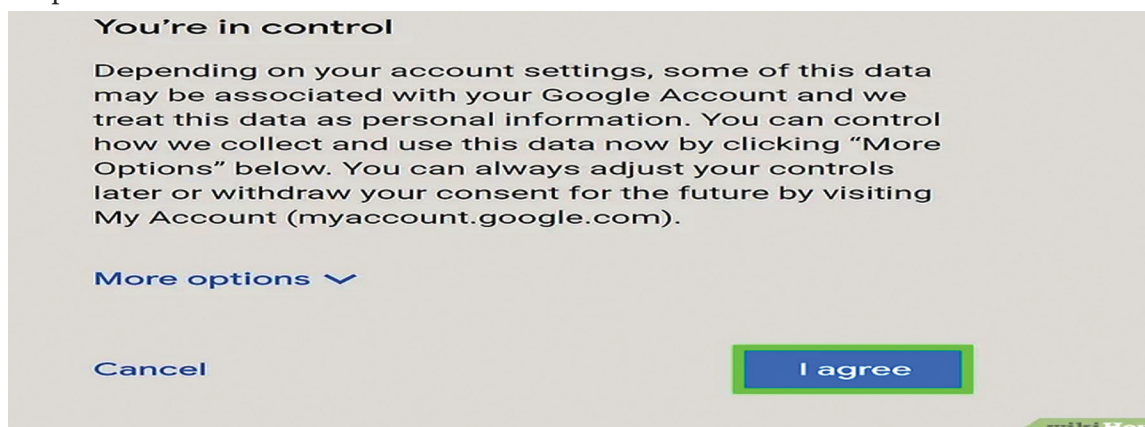
- d. **Confirm password:** Re-enter the password to confirm it.
- e. **Birthday:** Enter your date of birth.
- f. **Gender:** Select your gender.

3. **Set up recovery options:** Provide a phone number and/or an alternate email address that can be used for account recovery and security purposes.

4. **Verify phone number :** Google may require you to verify your phone number to ensure the security of your account. Follow the on-screen instructions to complete the verification process.



5. Review and accept the Terms of Service and Privacy Policy: Take some time to read through the Terms of Service and Privacy Policy provided by Google. If you agree to the terms, check the box indicating your acceptance.



6. Click “Next step” or “Create account”: Once filled in all the required information and agreed to the terms, click the “Next step” or “Create account” button to proceed.

7. Complete the setup process: After creating a Gmail account, the user will be directed to the Gmail interface after that they can start to send and receive emails using their new Gmail address.

Besides mail service, with a gmail login a user can access other services of google such as Hangout, Google calendar, Google forms, Google Meet, Google Drive, etc.

Google Calendar :

Google Calendar is a free online calendar that keeps track of events and shares them with family, friends, or co-workers. Google Calendar helps to set reminders and to send invitations at the scheduled time. You can get reminders as emails or even as text messages to your cell phone.

One of the main advantages of Google Calendar is its sharing abilities. Family, friends, and others can share calendars with each other to keep track of meetings, appointments, birthdays, etc.

Overview of video and web conferencing tools:

Video conferencing tools:

Video conferencing is an online technology that allows limited users in different locations to hold full duplex face-to-face meetings using smartphones, tablets, or via desktop computers.

Usage of video conferencing tools:

- Video conferencing is largely used to conduct routine company meetings, addressing board members, interviewing job candidates, job training sessions.
- Video conferencing tools are providing convenient features to schedule, conduct or attend and record online meetings.
- Video conferencing saw a huge boost amid the global COVID-19 pandemic.

There are many video conferencing tools available for free of cost and on a premier basis. Some of the most commonly used tools are **Google Meet, Microsoft Teams, Zoom, Skype, Webex Meetings**. But the drawback with video conferencing is the stability and quality of the video conference may fluctuate with the speed and reliability of the data connection.

Web conferencing tools:

Web conferencing is a real-time online event which allows an unlimited number of users from all over the world to participate.

Web conferencing tools are useful to conduct webinars, online training/workshop/classes with mass participants. Most of the time, the trainer/host is only allowed to share audio/video/screen to everyone in the meeting. The participants communicate via chat and they are allowed to share their audio/video/screen only after the approval of the host.



Web conferencing tools are provided by platforms such as Webex, Zoom, Click Meeting, Google Meet, Zoho Meeting, GoToMeeting on the premiere basis.

Google Calendar can be used to schedule a video/web conference with Google Meet, Microsoft Teams, Zoom.

Texting tools:

Texting tools/applications allows us to send/receive text messages on mobile phones with internet connection.

Features of texting tools:

- Texting tools identify sender/receiver by their mobile phone numbers rather than by their email id
- Besides text messaging, they have the feature to send multimedia documents as attachments.
- Group communication is more convenient in texting tools than email communication.
- Texting tools such as whatsapp have also features for individual or group voice call and video call.

Initially texting apps replaced the usage of SMS services for personal affairs. Later it also started to replace email usage for business communication among team members and leaders. Commonly used business purpose texting tools are Connecteam, Telegram, Signal, Whatsapp, Discord, Viber, Messenger, LINE, WeChat, etc.

WhatsApp

WhatsApp is one of the most popularly used messenger apps across the globe because of its user-friendly design, reliability, security, and speed. WhatsApp Messenger is more suitable for personal and official purposes.

Along with messaging, whatsapp has features for payments, location shareability, audio/video calls, and document attachments. To extend its service to small company owners (ranging from small scale to medium-scale companies), WhatsApp

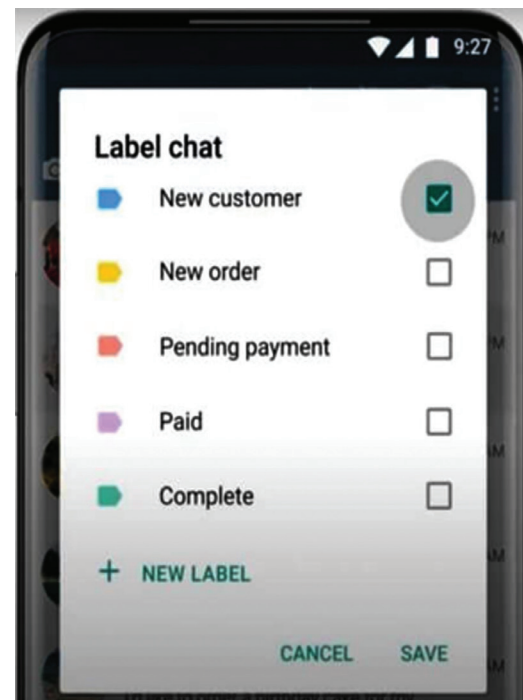
launched WhatsApp Business in 2018. However, its main focus is to facilitate companies who want to promote their brand or assist customers on WhatsApp.



Important Features of WhatsApp Business :

1. Contacts Labels

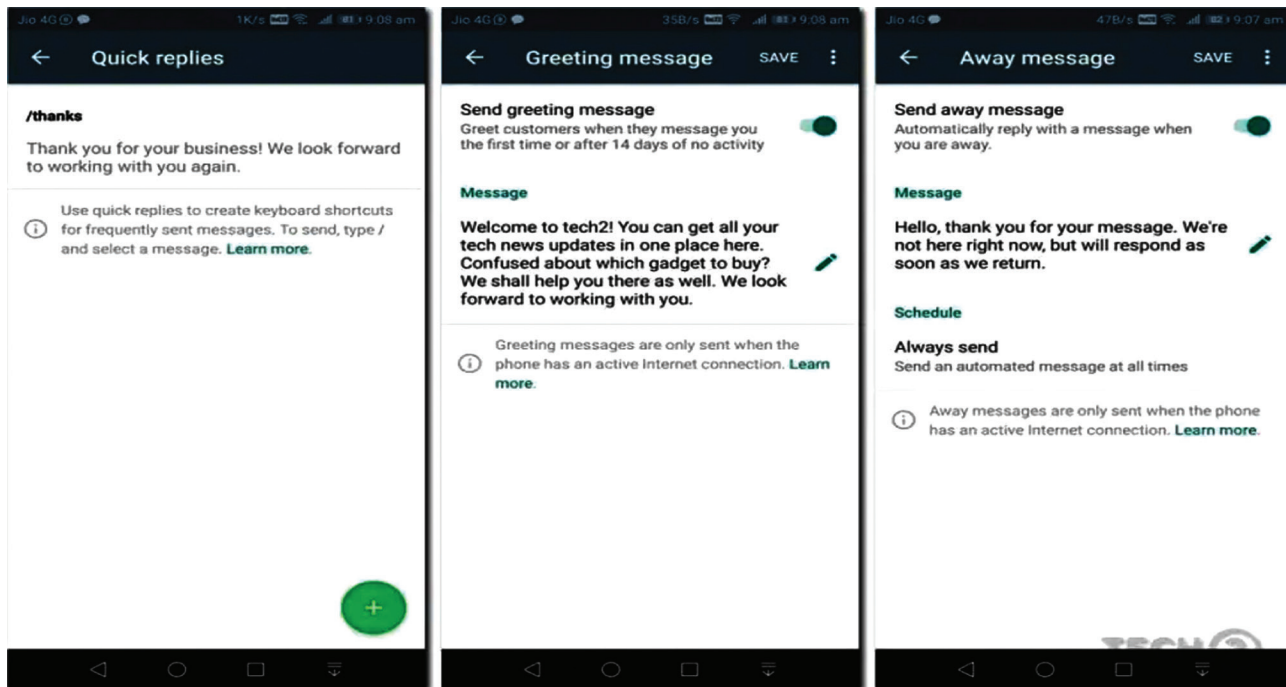
Through this feature, 20 custom label names can be created to sort contacts accordingly and use them to mark individual contacts or groups. This is a convenient feature to organize data productively.



2. Message Automation

In the WhatsApp Business app, there are three kinds of message automation functions:

1. Quick replies,
2. Away messages, and
3. Greeting messages.



Greeting Message: When someone messages the Whatsapp Business number for the first time or after a long time, a Predefined Greeting message will be sent to the contact number.

Away Message: When someone interacts with the WhatsApp Business number during those people are busy or when they are away from the office, the user gets custom automated responses based on the trigger.

Quick Message: Predefined text for a set of usual situations that can be linked with relevant short terms. Just by typing the short term, a few lines of message can be quickly sent to any of the customers or employees.

3. Message Statistics

Message statistics report gives out a detailed analysis in WhatsApp Business such as the number of messages sent, delivered, read, and received.

WhatsApp Business API

WhatsApp Business API platform focuses on mid-size to large-scale companies by providing tons of automation features and builds bots. WhatsApp Business API account only through the API provided by WhatsApp Business Solution Providers (BSP). This is a paid platform where users get charged based on message sessions.

Some of the salient features of this platform are:

- Broadcast messages to unlimited people
- Add multiple users to handle chats
- Connect with CRM to manage conversations
- Generate advanced analytical reports
- Integrate with third-party applications
- Receive a green-tick verified badge on your WhatsApp Business account profile
- Build a chatbot for WhatsApp to support customers, generate leads, collect feedback and much more!

5.4 Browser Extension For Productivity

Browser extension is a piece of software that adds features to a web browser. Browser extension is also known as a plug-in or add-on.

Browser extension can be downloaded directly from web browsers like Microsoft Edge, Google Chrome, Firefox or from third-party software developers. Each extension typically focuses on one function such as Add blogging, PDF printing. Browser extensions boost productivity by making it easier to access various helpful tools.



Some popular browser extension of Google Chrome to improve productivity are

1. Save to Google Drive
2. Print Friendly & PDF
3. OneTab
4. Right Inbox

5. Dashlane – Password Manager

6. Todoist

Some popular browser extension of Microsoft Edge to improve productivity are

1. Grammar and Spell Checker-LanguageTool,
2. QR Code Generator
3. Enhancer for YouTube
4. Dark Reader

Introduction to Cyber Security:

In Today's world, most of the government and private organizations are computerized. And most of the people are also doing their personal communication and finance digitally. Hence digital data has become a rich asset, which needs to be secured.

As a consequence of it, a new crime area is evolved to theft digital data by hacking either the system or network or website or online login. This kind of crime is known as cyber attack. Cyber means relating to computers or computer networks. Cyberattacks can have serious consequences, including financial loss, reputational damage, and even physical harm.

Cyber security is the technique of protecting computers, servers, mobile devices, electronic systems, networks, and data from theft, damage, modification or unauthorized access.

Cybersecurity is essential for protecting our digital assets, including sensitive personal and financial information, intellectual property, and critical infrastructure. The importance of cyber security is to secure the data of various organizations like email, yahoo, etc., which have extremely sensitive information.

The primary cypher security process are as follows:

1. Anti-Virus Protection:

Antivirus software blocks malware and other malicious viruses from entering user's devices and compromising data.

2. Strong Passwords:

It is secure to create a strong password with at least one lowercase letter, one uppercase letter, one number, and a symbol of length at least eight characters and a maximum length of 64 characters.

3. Two-Factor or Multi-Factor Authentication:

Two-factor authentication means along with a strong password addition of one more authentication method such as a Personal Identification Code, mobile another password, trusted device authentication or even fingerprint. With multi-factor authentication, addition of more than one additional authentication method along with a strong password.

4. Avoid Phishing Scams – suspicious of emails, phone calls, and flyers

Always be suspicious of irrelevant unknown sender's emails and messages and should not open any link in those emails or messages.

5. Protect sensitive Personal Identifiable Information (PII)

Personal Identifiable Information (PII) is any information such as name, address, phone numbers, data of birth, Social Security Number, IP address, location details, or any other physical or digital identity data. Most of the people use their PII information in their passwords. In the new "always-on" world of social media, one should be very cautious about the information they post online. Adding home address, birthdate, or any other PII information on social media for public view will dramatically increase the risk of a security breach. Hackers use this information to their advantage!



Information Management

Information management refers to the processes and tools used to collect, store, organize, and share data within an organization. Effective information management ensures that information is available to the right people at the right time, enabling better decision-making and improved productivity.

Need for Information Management:

Data and information are corporate assets that are created or gathered by a company. Because they can make the business more valuable, they need protection. Data and information have a lifecycle: It's useful for a period of time, but at some point it's no longer valuable. Hence proper management of information is essential.

Cycle of Information Management:

In order to support a business' needs, Information management(IM) can encompass a cycle of organizational activities. They are,

Gathering data,
Analyzing,
Categorizing,
Contextualizing, and
Archiving or deleting

Google Forms:

Google Forms is a free online software program for creating surveys, questionnaires and information crowdsourcing. Google Form is a great way to gather responses from people.

A Google account is needed to make a Google Form, but you don't necessarily need an account to answer the questions in a form. Google Form can be personalized with question types, a header image, and a color theme.

From a one-question form to a long multi-section quiz, a Google Form eliminates the need to decipher and tally responses on sheets of paper or individual email responses.

Google Forms can compile all the standard survey fields—such as text, multiple choice questions, dropdowns, linear scales, and grids—

to serve all sorts of data collection needs. They can be used to collect contact information on a website, gather inventory data, collect votes, obtain feedback, evaluate a product or service, test knowledge with a quiz, or replace a basic customer intake form.

It is possible to get feedback about a photo or audio or video by including them in the form itself. And also it is possible to upload the file as a response.

The four steps to collect information using Google Forms are

1. Create questions
2. Create a form
3. Send a form
4. Receive and review responses

Information repository

An information repository is a central place in which an aggregation of data is kept and maintained in an organized way, usually in computer storage. It may be just the aggregation of data itself into some accessible place of storage or it may also imply some ability to selectively extract data.

An efficient information repository is essential for effective information management. Cloud storage(repository) is the best option to ensure the availability of consistent and updated information to all the stakeholders in the organization with their relevant access privilege.

Cloud storage:

Cloud storage is a cloud computing model that enables storing data and files on the internet through a cloud computing provider that can be accessed through the public internet. The provider securely stores, manages, and maintains the storage servers, infrastructure, and network.

Advantages of Cloud Storage:

1. Cloud storage enables us to access our data from anywhere in the world with internet access.
2. Cloud storage enable to store large amount of data without buying a physical storage devices such as hard disk

- Cloud storage keeps the data safe from hardware failure issues such as disk failure, physical damage or loss of storage devices.

Prominent cloud storage service providers are Google Drive, Dropbox, Microsoft's Onedrive, iCloud, Amazon drive, etc.

Google Drive:

Google Drive is a cloud-based file storage and synchronization service developed by Google. It enables users to store and access files online. The service syncs stored documents, photos and more across all the user's devices, including mobile devices, tablets and PCs. The user must create or sign in to a Google account to use google drive service.

Google Drive can be accessed on the web using browsers such as Google Chrome, Microsoft Internet Explorer and Edge, Mozilla Firefox, and Apple Safari. There are also mobile apps for Android and iOS.

Drop Box:

DropBox is a prominent cloud storage provider in the world. Dropbox cloud storage is a great place to help teams get organized and add files to one central location. File sharing with Dropbox is quick and simple using phone, tablet or computer. With DropBox it is possible to share files as large as one's cloud storage space quota (2 GB and up). It's easy for team members to see where everything is, and which files are the most recent—and in need of immediate attention.

Ex 8(a) Scheduling Online Video Conference Meeting using Google Calendar

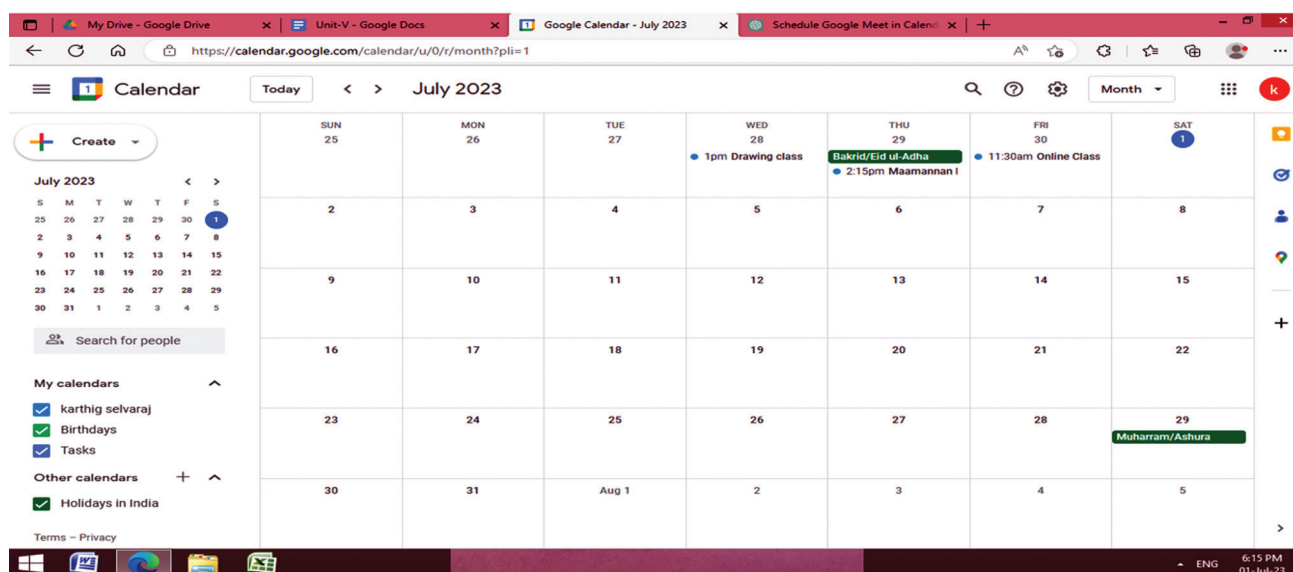
Aim :

To schedule an online video conference in Google Meet using Google Calendar.

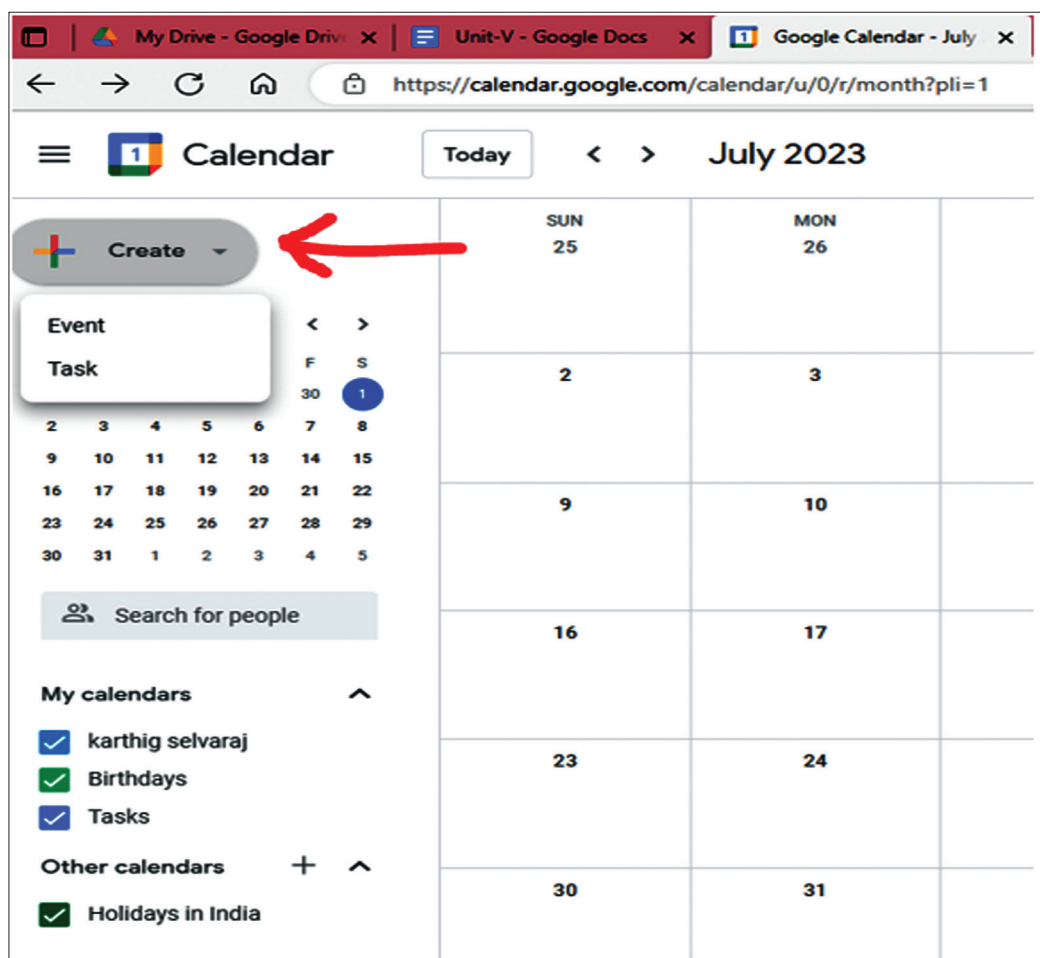
Procedure:

Step-by-step guide to schedule a Google Meet video conference using Google Calendar :

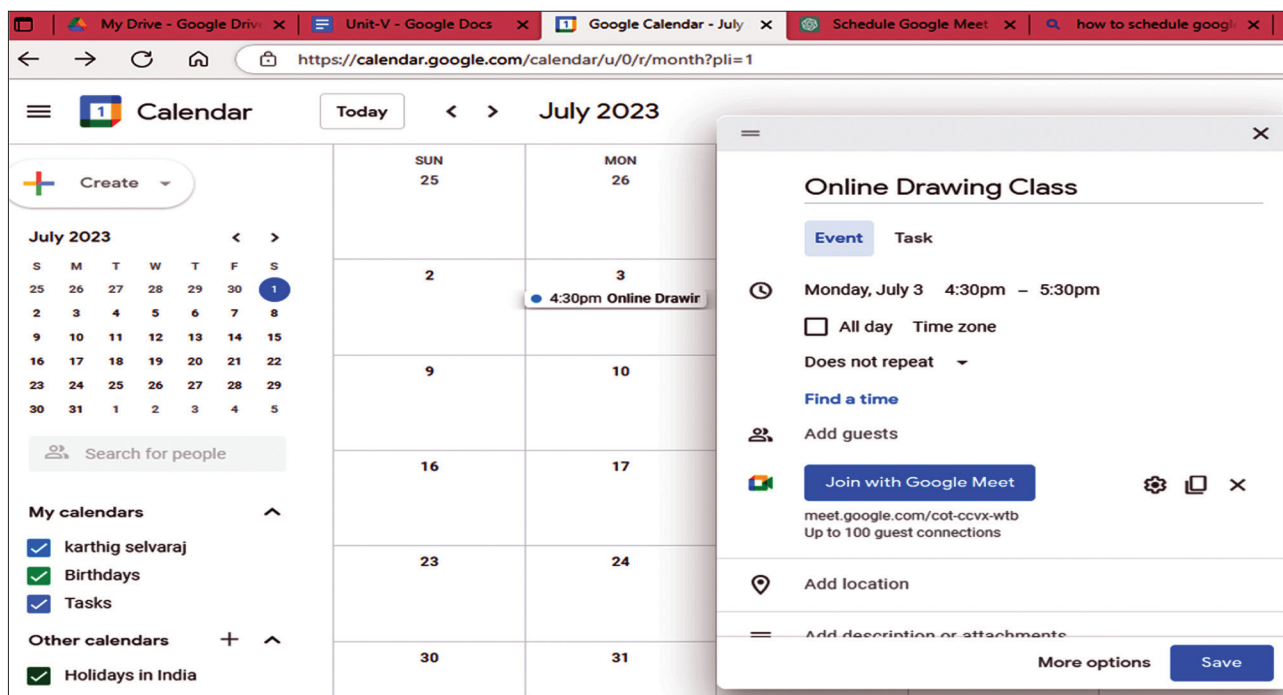
Step 1. Open Google Calendar by visiting calendar.google.com and sign in with your Google account.



Step 2. Create a new event by clicking on the “+” button or selecting an available time slot on the calendar and select Event.



Step 3. In the event details window, enter the title, date, time and other relevant information for your meeting.

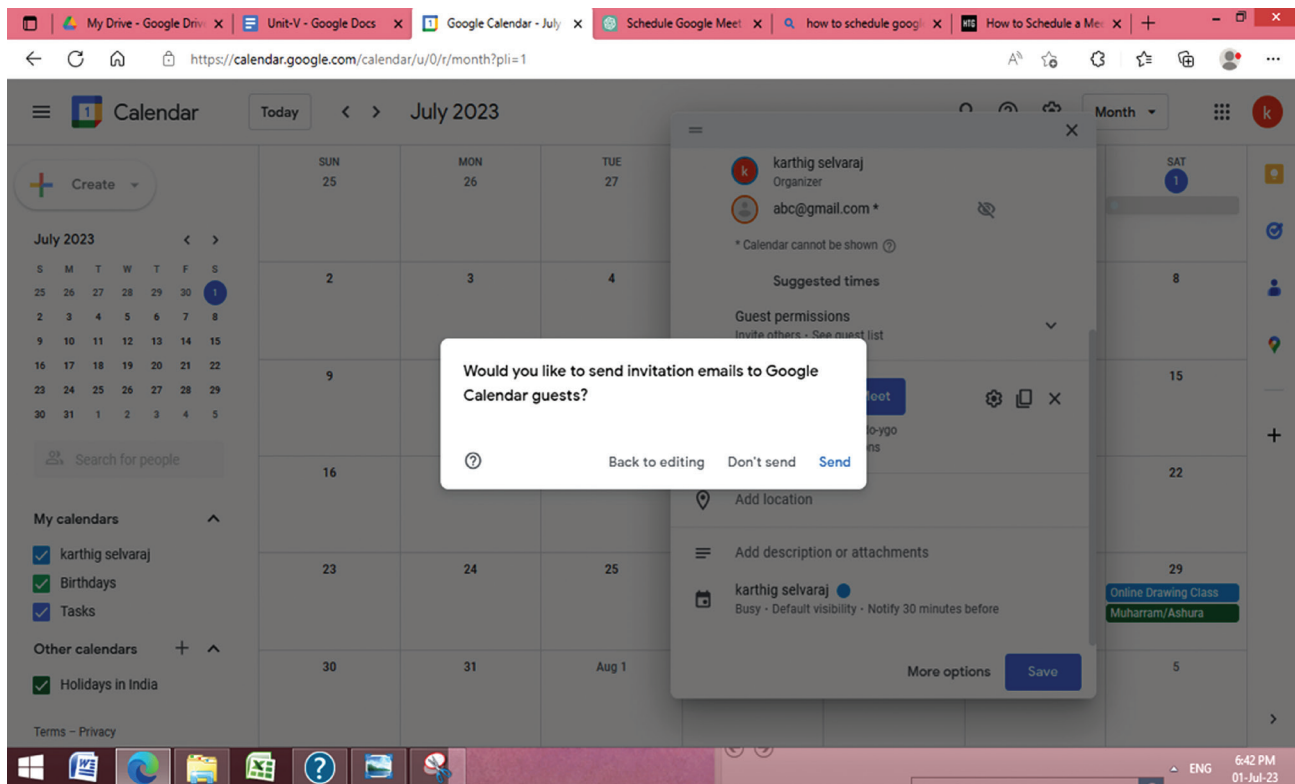


Step 4. In the “Add guests” field, enter the email addresses of the participants you want to invite to the Google Meet.

Step 5. To enable Google Meet for the event, click on the “Add Google Meet video conferencing” option below the date and time fields.

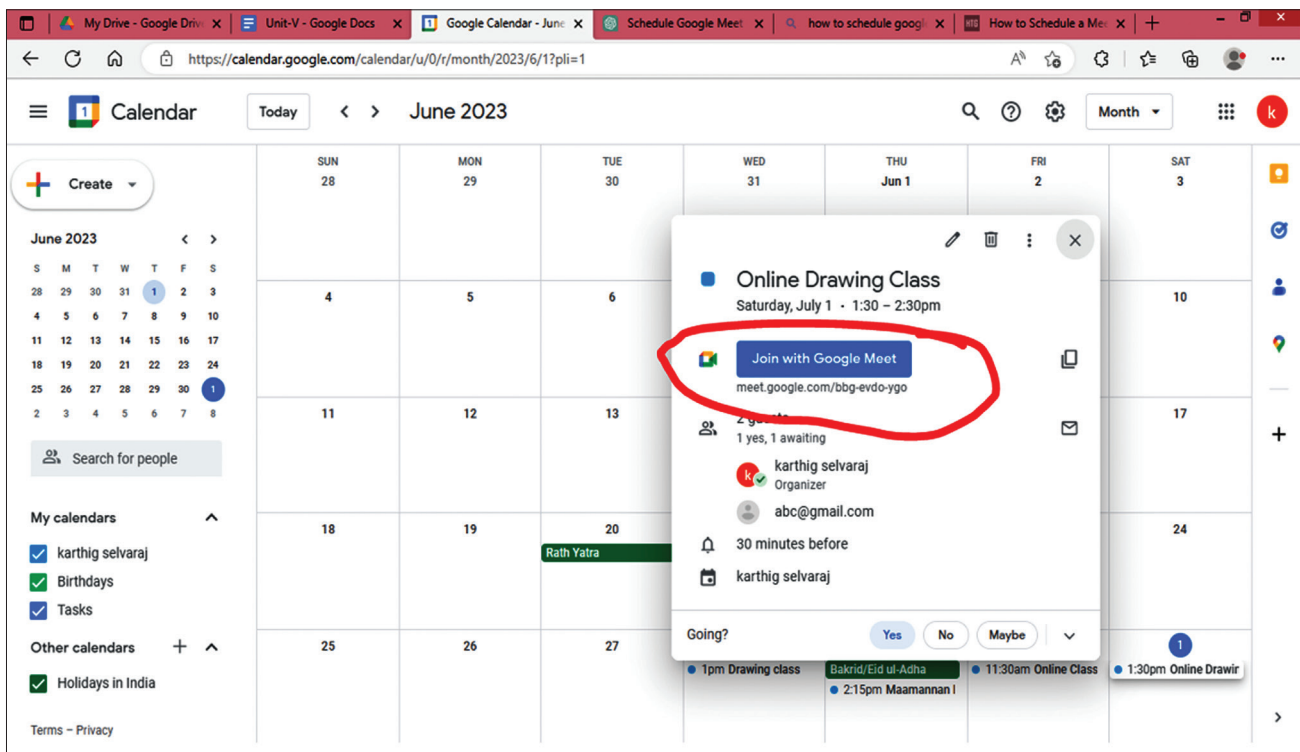
Step 6. Save the event by clicking the “Save” button at the top or bottom of the event details window.

Step 7. After Save the Event, the following popup will appear. By clicking the send button in the popup an email invitation can be sent to the participants, including the Google Meet link. They can join the meeting by clicking on the link at the scheduled time.



Output:

1. The scheduled video conference is successfully added in the google calendar.



2. The organizer successfully joined the meeting by clicking on the “Join with Google Meet” button.

Result:

By following the above steps in the procedure, successfully scheduled a Google Meet in Google Calendar.

Ex 8b

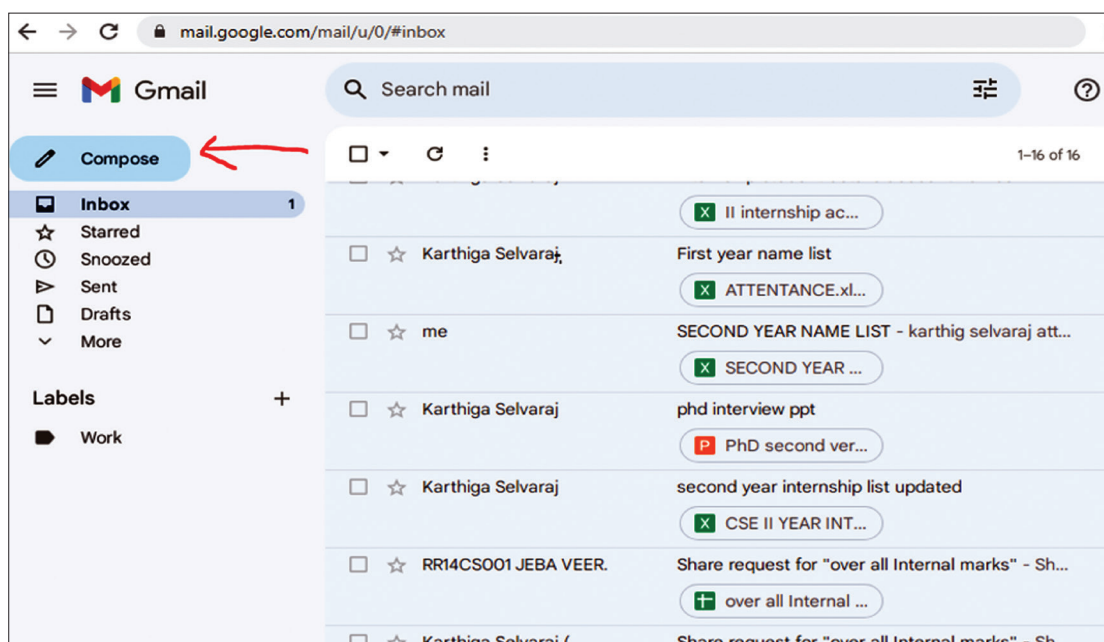
Sending a Job Application mail.

Aim

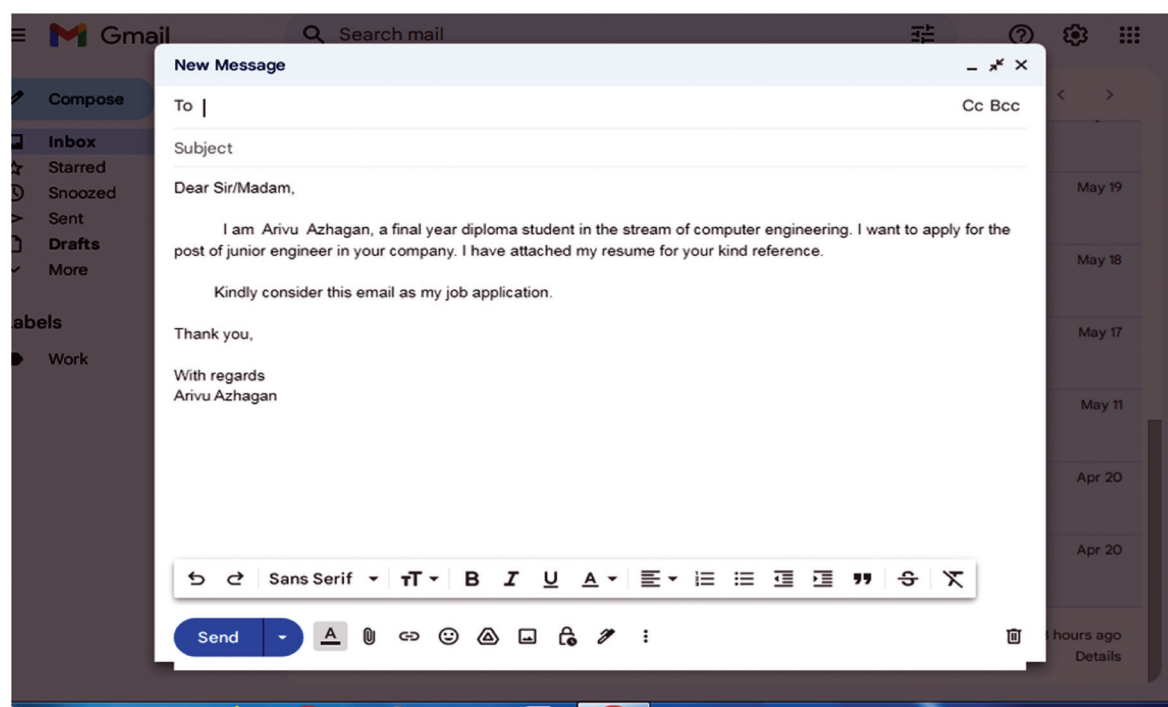
To send a job application email with an attachment of a resume through Gmail.

Procedure.

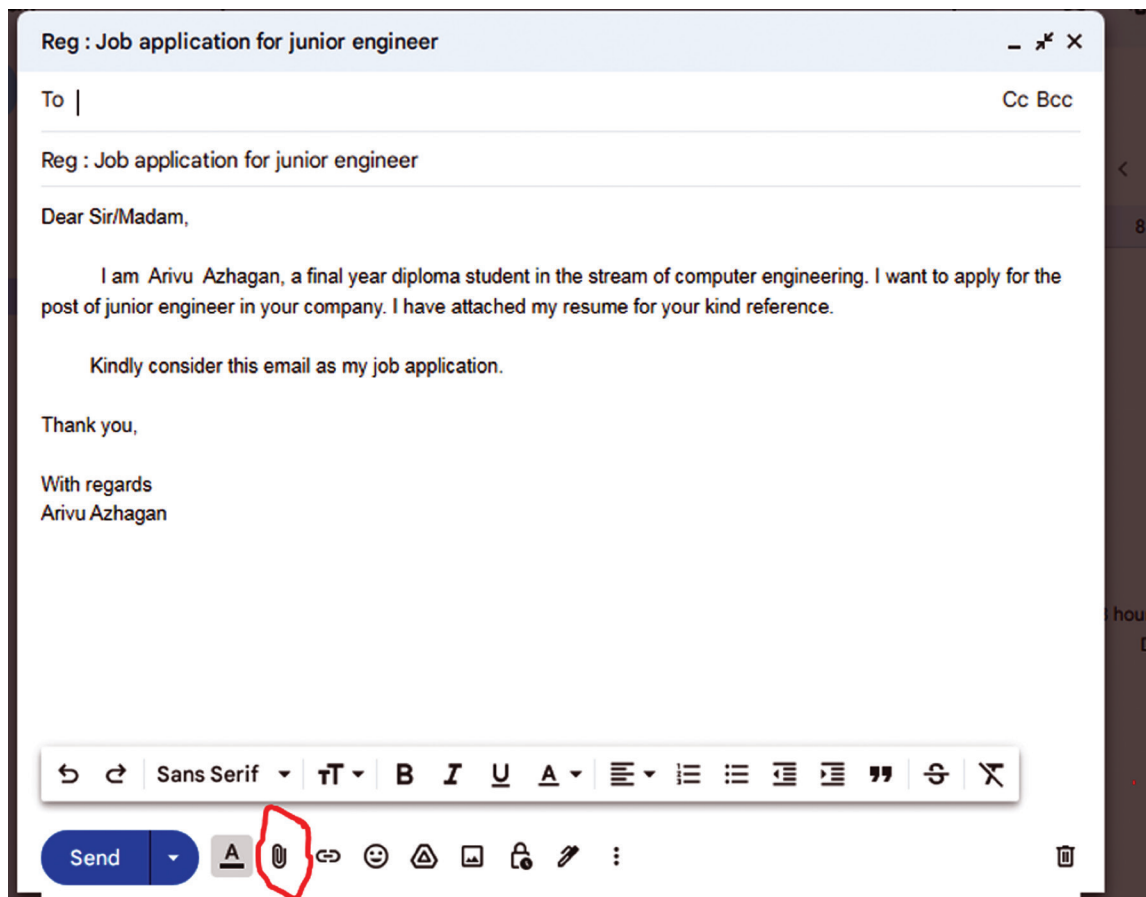
1. Go to mail.google.com and sign in your professional Gmail account
2. Click on Compose icon to type a new email



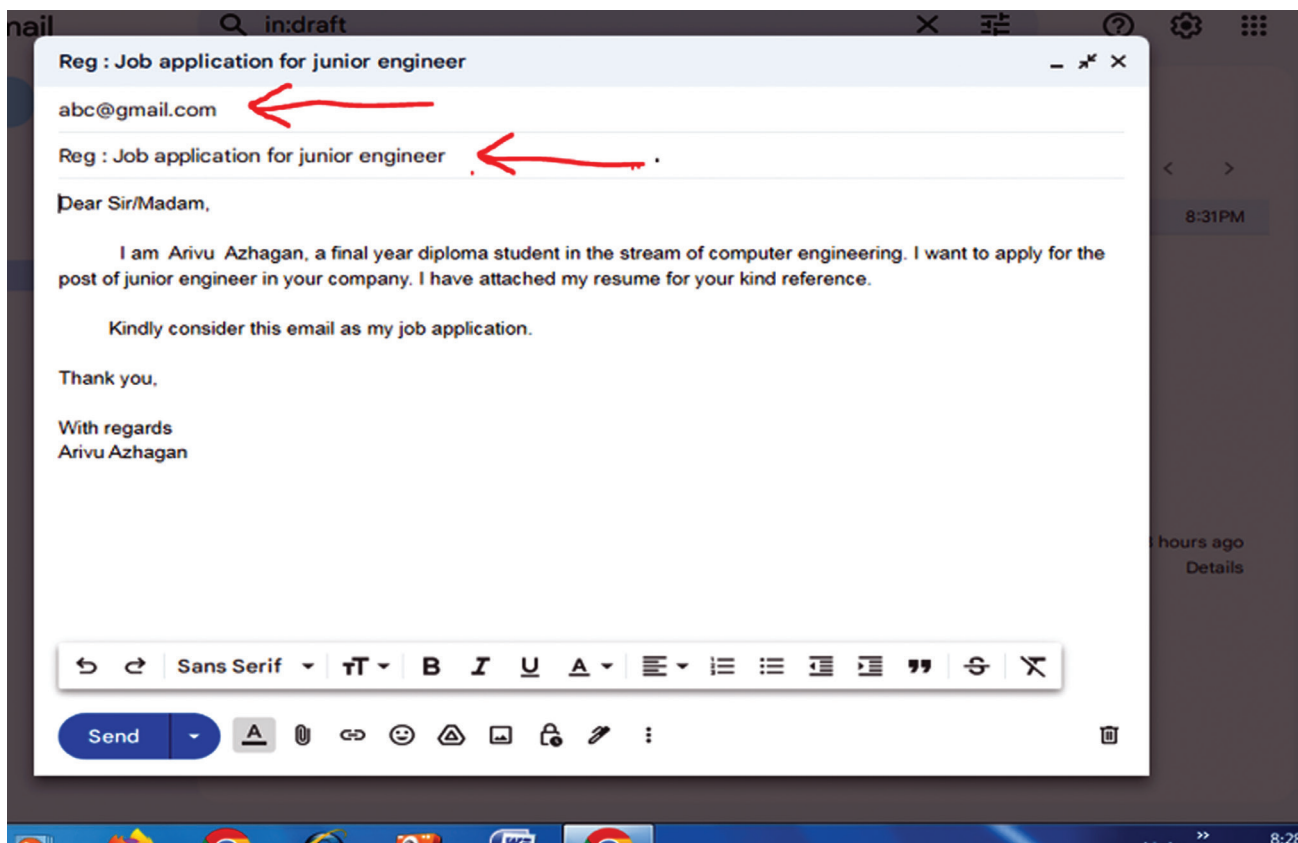
3. Type the content in the body of the email.



4. Attach the resume by clicking the Attach Files icon



5. Type the subject of the email and recipient's mail id in the appropriate places.



6. Send the mail by clicking the Send button.

Reg : Job application for junior engineer

abc@gmail.com

Reg : Job application for junior engineer

Dear Sir/Madam,

I am Arivu Azhagan, a final year diploma student in the stream of computer engineering. I want to apply for the post of junior engineer in your company. I have attached my resume for your kind reference.

Kindly consider this email as my job application.

Thank you,

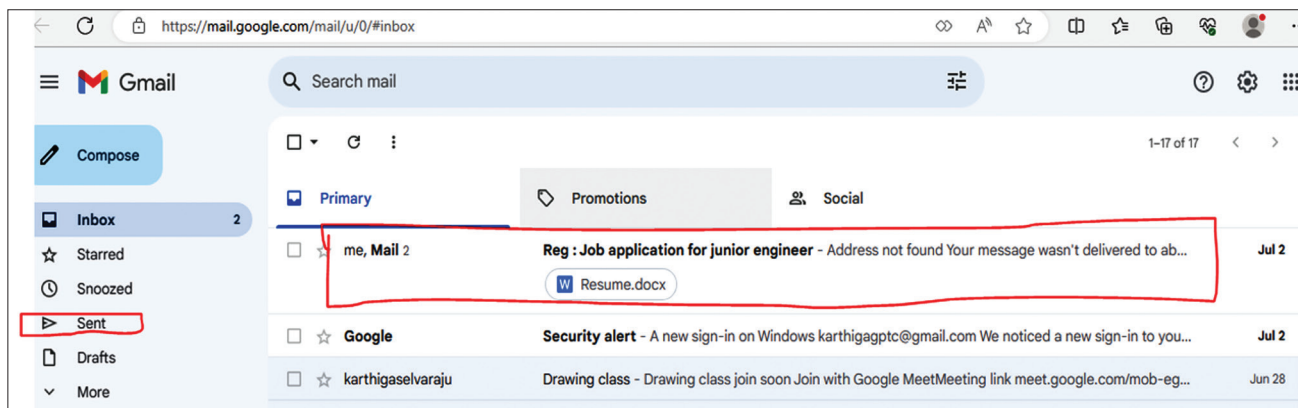
With regards
Arivu Azhagan
|

Resume.docx (10K)

Send

Output:

Check whether the mail is successfully sent or not in the Sent section.



Result:

Thus the email job application with an attachment of a resume is successfully sent through Gmail.

Ex 8c: Google Form Creation for Student details collection

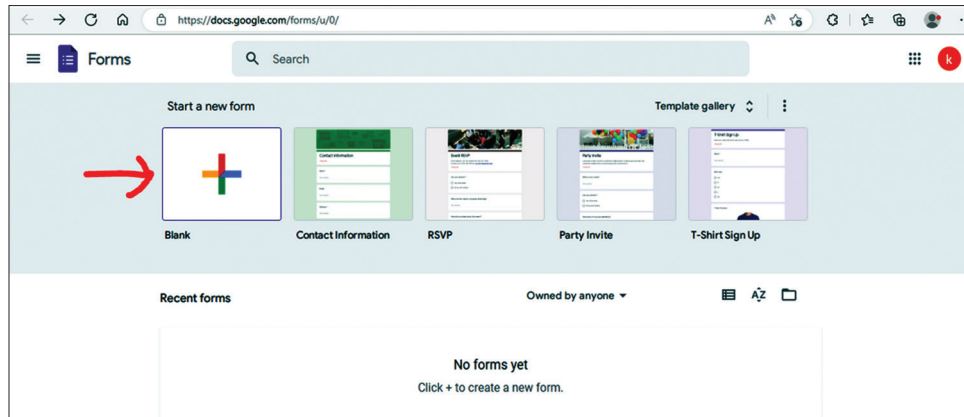
Aim :

To create a Google Form to collect students' academic and personal details.

Procedure:

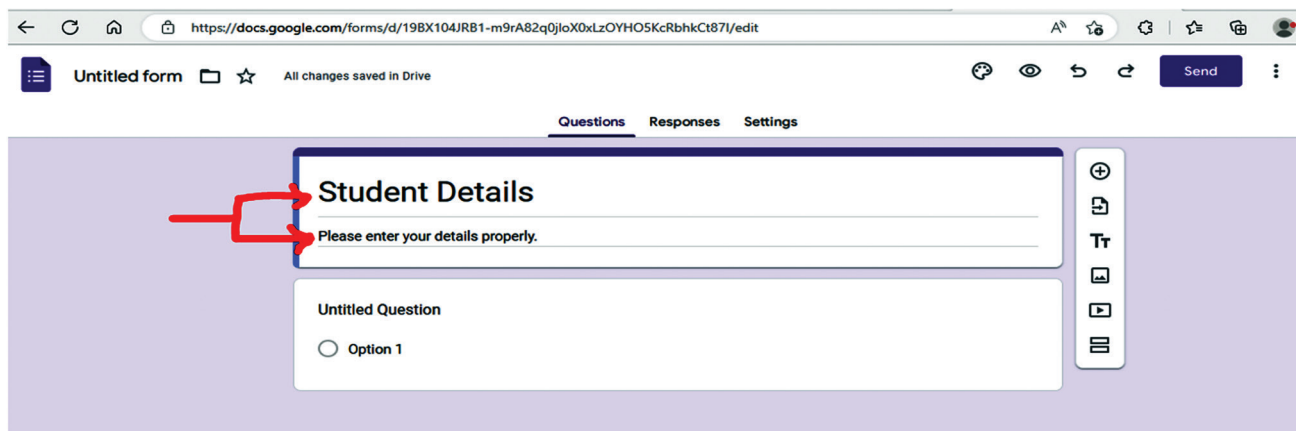
To create a Google Form, follow these steps:

- 1. Access Google Forms:** Go to forms.google.com and sign in with your Google account.
- 2. Create a new form:** Click on the "+ Blank" button to start creating a new form.



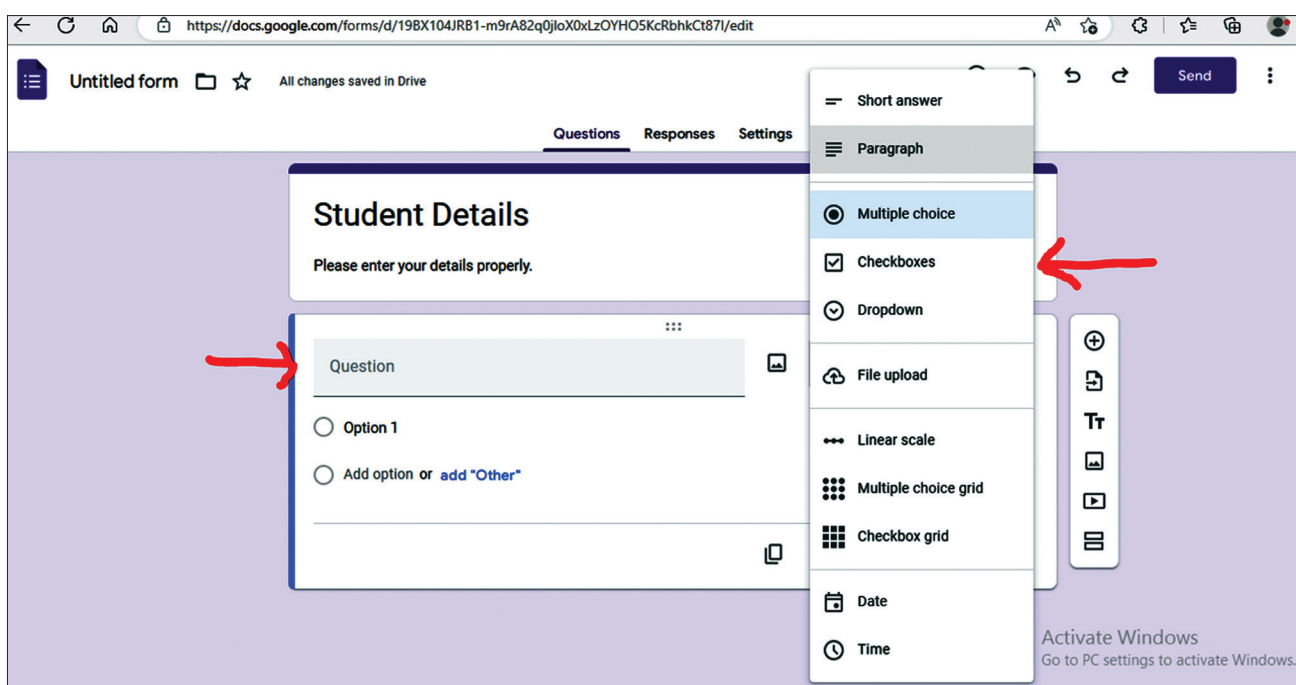
3. Add Form Title and Description :

Enter the form Title as “Student Details” and form description. “Please enter the details properly”.



3. Add questions as form field :

Click on the “+” button to add a new question. Choose the appropriate question type for each contact detail you want to collect. For example, you can use the “Short answer” question type for name, email, and phone number fields.



Register Number.

Short answer text

Department

Multiple choice

- ☐ Civil Engineering
- ☐ Mechanical Engineering
- ☐ Electrical & Electronics Engineering
- ☐ Electronics & Communication Engineering
- ☐ Computer Engineering
- ☐ Add option or [add "Other"](#)

4. Mark Important fields as required :

Add form fields for Name, Date of Birth, Register Number, Department, Email ID, Address. Mark Name, Register Number and Email ID as required and add the following details with appropriate answer type.

- Name – Short answer
- Date of Birth – Date
- Register Number – Short answer
- Department – Multiple choice
- Email ID – Short answer
- Address – Short answer

5. Preview the form: Click on the eye icon at the top-right corner to preview and submit the sample form to test the requirement.

Student Details

Please enter your details properly.

This form is automatically collecting emails from all respondents. [Change settings](#)

Name *

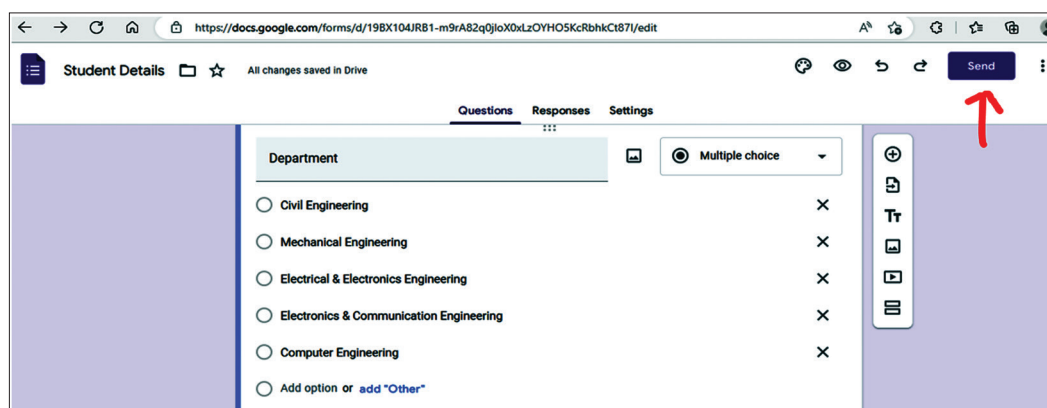
Short answer text

Date of Birth *

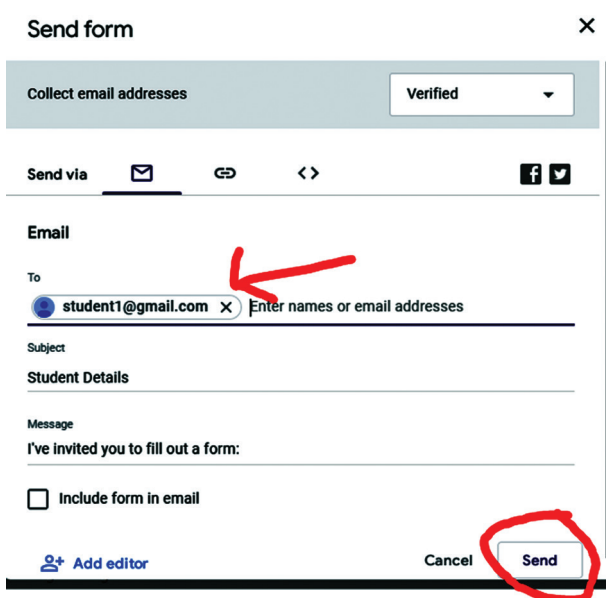
Month, day, year

6. Send the form link :

Select the “Send” button to share the form via Email, or share the shortened url in student’s whatsapp group.



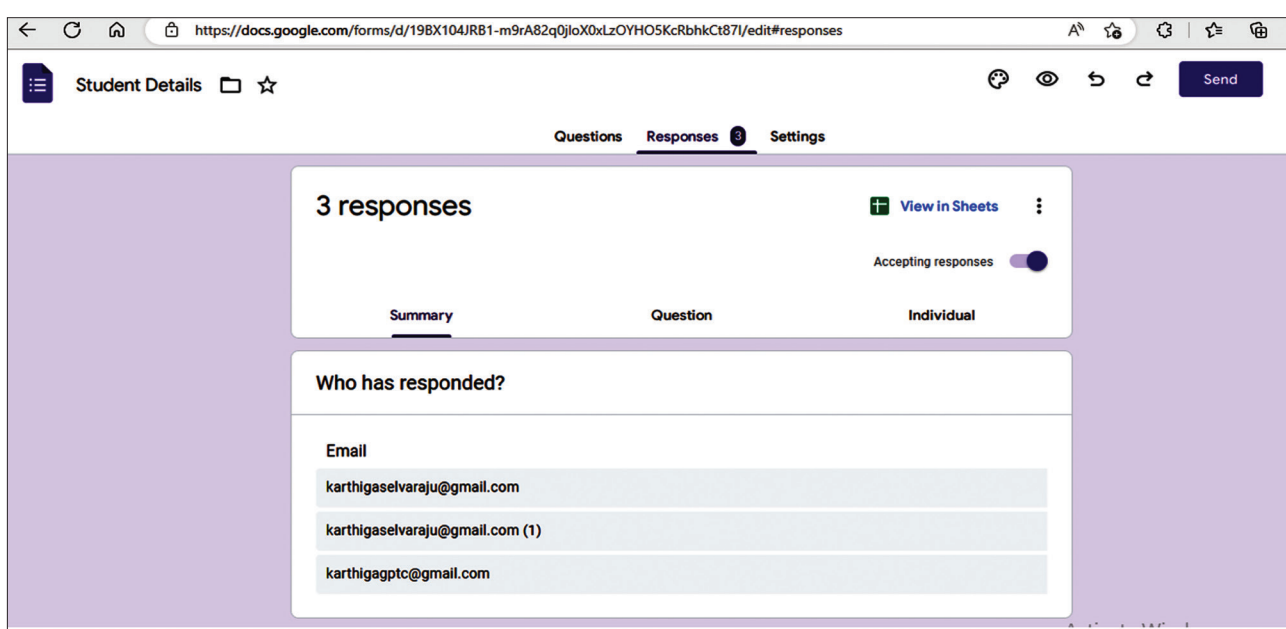
The screenshot shows the Google Forms editor interface for a form titled "Student Details". The "Send" button is located in the top right corner of the form editor, highlighted with a red arrow. The form content includes a "Department" question with multiple choice options: Civil Engineering, Mechanical Engineering, Electrical & Electronics Engineering, Electronics & Communication Engineering, Computer Engineering, and an "Add option or add 'Other'" button.



The screenshot shows the "Send form" dialog box. The "Send via" section is active, showing options for Email, Link, and Short URL. The "Email" option is selected, and the "To" field contains the email address "student1@gmail.com". The "Subject" field is labeled "Student Details". The "Message" field contains the text "I've invited you to fill out a form:". The "Include form in email" checkbox is unchecked. The "Send" button is highlighted with a red circle.

Output :

Check the responses by clicking the response section icon to view the summary of the response and individual response.



The screenshot shows the Google Forms "Responses" tab. It displays "3 responses" and a "View in Sheets" button. The "Accepting responses" toggle is turned on. Below the response count, there are tabs for "Summary", "Question", and "Individual". The "Summary" tab is selected, showing a table of responses under the heading "Who has responded?". The table lists the email addresses of the respondents: karthigaselvaraju@gmail.com, karthigaselvaraju@gmail.com (1), and karthigagptc@gmail.com.

Student Details (Responses)

Timestamp	Email Address	Name	Date of Birth	Gender	Register Number	Department	Email ID	Address
7/1/2023 23:34:47	[REDACTED]	Anjaan R	8/1/2012	Male	123	Electronics & Communic	student1@gmail.com	
7/1/2023 23:35:58	[REDACTED]	Veeran S	2/29/2012	Male	12345	Computer Engineering	student2@gmail.com	

Result:

Thus a Google Forms is successfully created to collect students' academic and personal details.

Ex 9: Hands-on Video Conferencing Experience

Aim:

To explore the functionalities of video conferencing tools such as Webex, Zoom, Google Meet, goto Meeting.

Procedure:

(a) Google Meet :

Step-by-step guide to getting started with Google Meet:

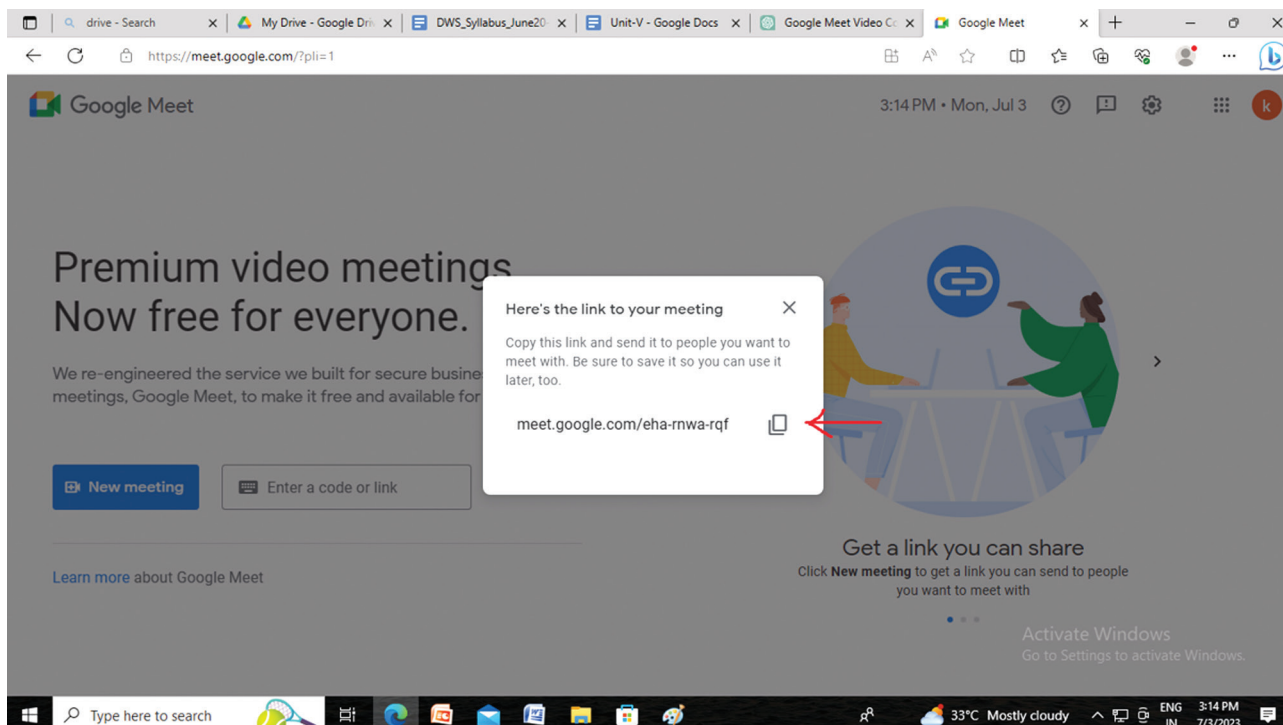
1. **Access Google Meet:** Open web browser and go to the Google Meet website (meet.google.com) or open the Google Meet app on a mobile device.

2. **Sign in to Google Account:** Sign in Google Account with email address and password.

3. **Create a new meeting:** Click on the "New Meeting" button and then select any one of the ways to create a meeting among the available three options based on the need.

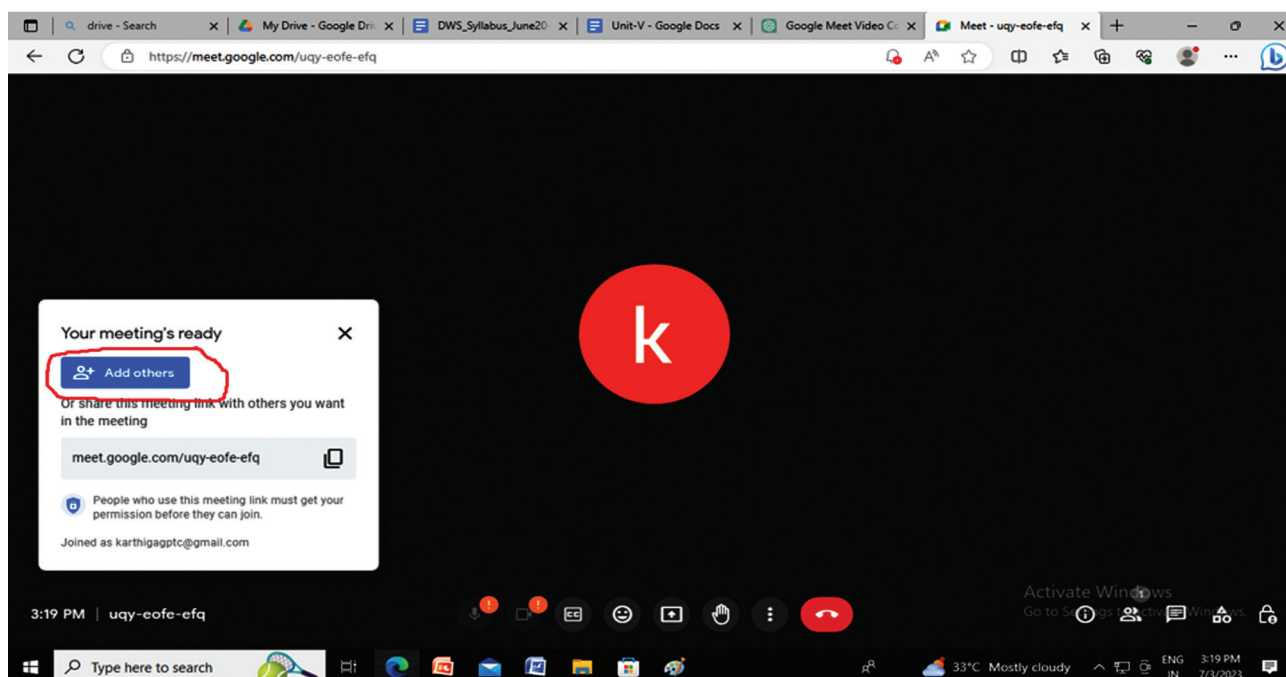
3(a) **Create a meeting for later :** Click on this option to create a meeting link and copy the link to share with participants.

The screenshot shows the Google Meet homepage with the headline "Premium video meetings. Now free for everyone." Below this, there's a section titled "Get a link you can share" with a button "Create a meeting for later". A red arrow points to this button. The page also features an illustration of two people in a video call and a Windows taskbar at the bottom.

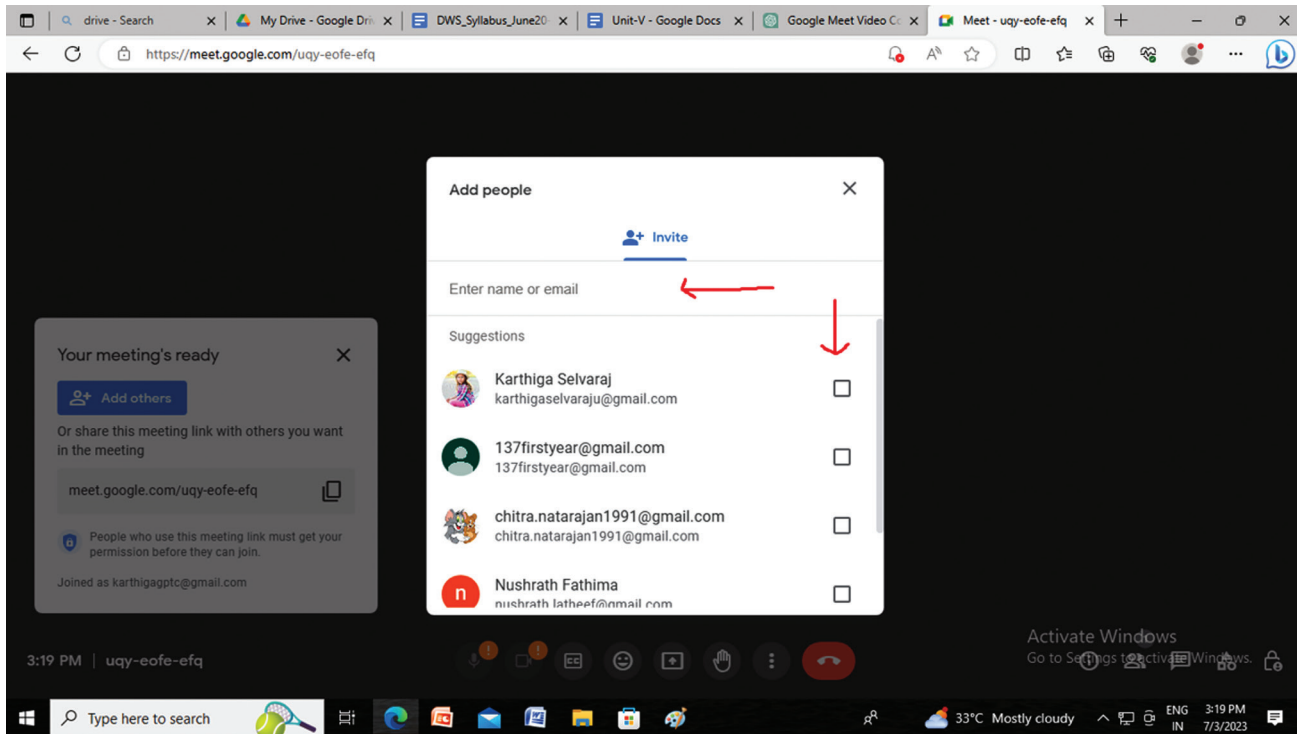


3(b) Start an instant meeting:

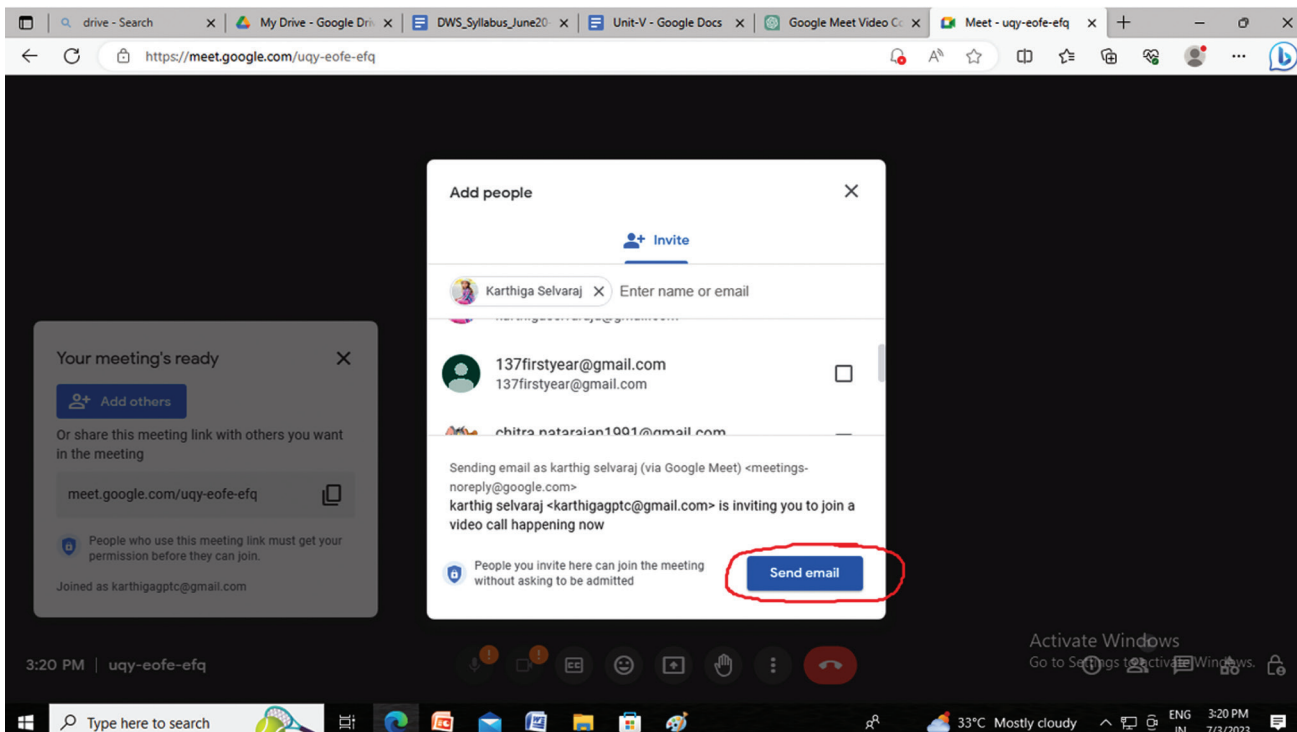
(i) By clicking this option, the meeting will be started immediately and add participants by clicking the “Add others” button.



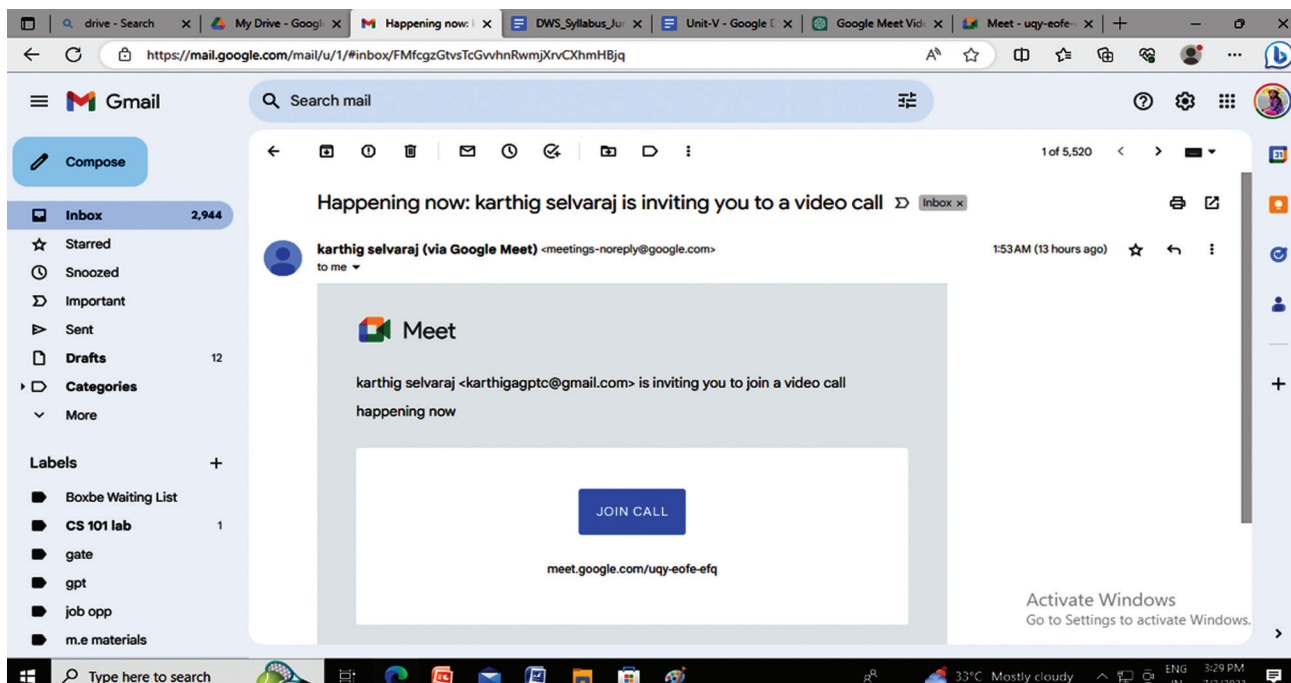
(ii) By clicking the “Add others” option , a pop window will appear. In that add email id of people to invite or select the email id’s among suggestions.



(iii) After adding the email id's click on "Send email" button to send the invitation for meeting.



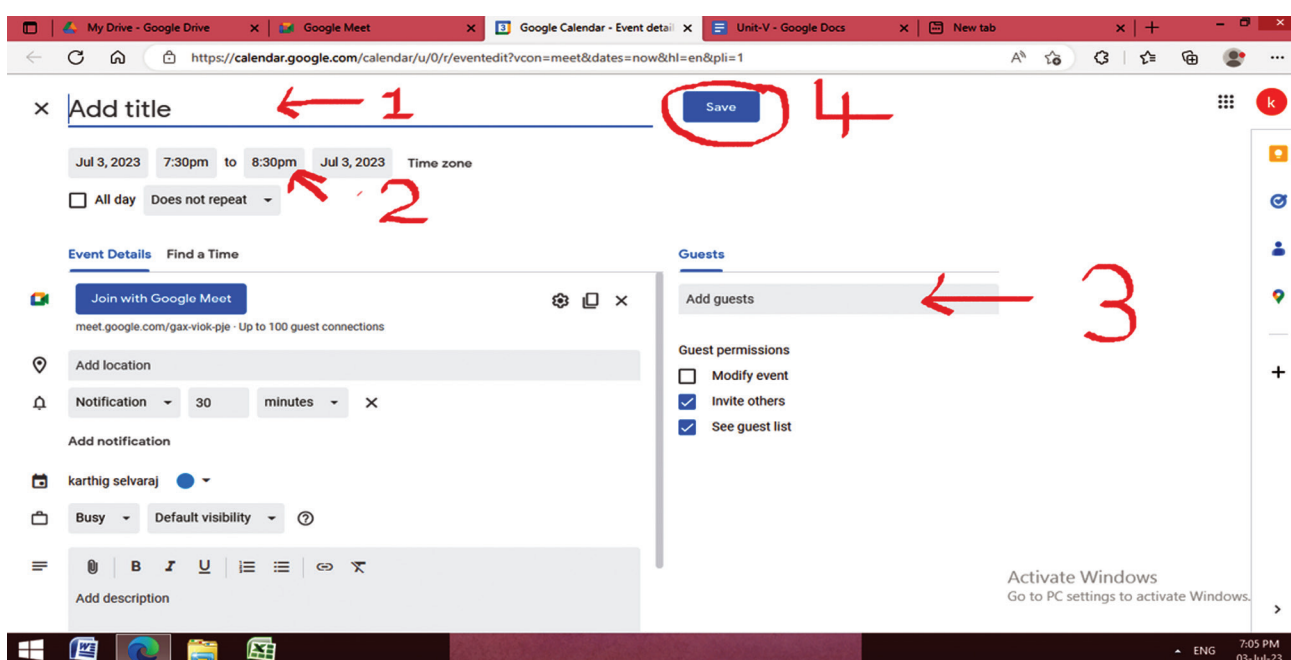
(iv). By clicking the "Join Call" button in an email invitation, he/she can join the meeting.



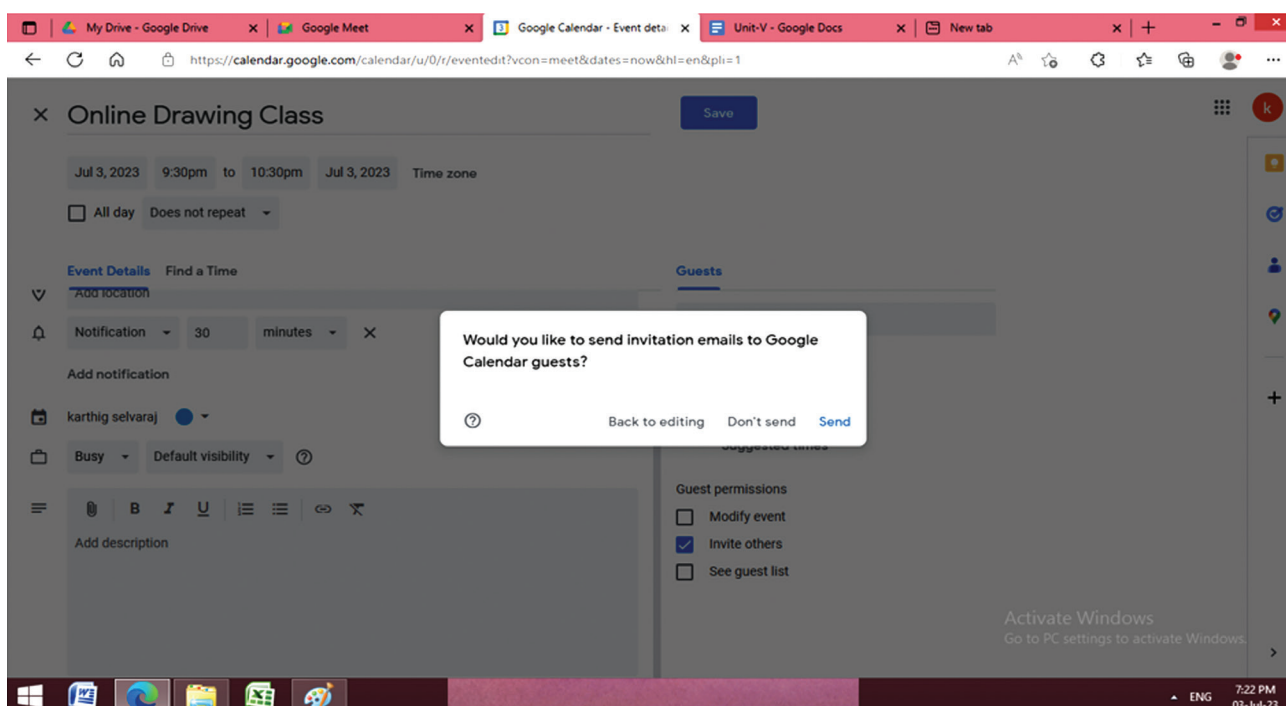
3(c) Schedule in Google Calendar :

By clicking this option, the Google calendar page to schedule the meeting will open.

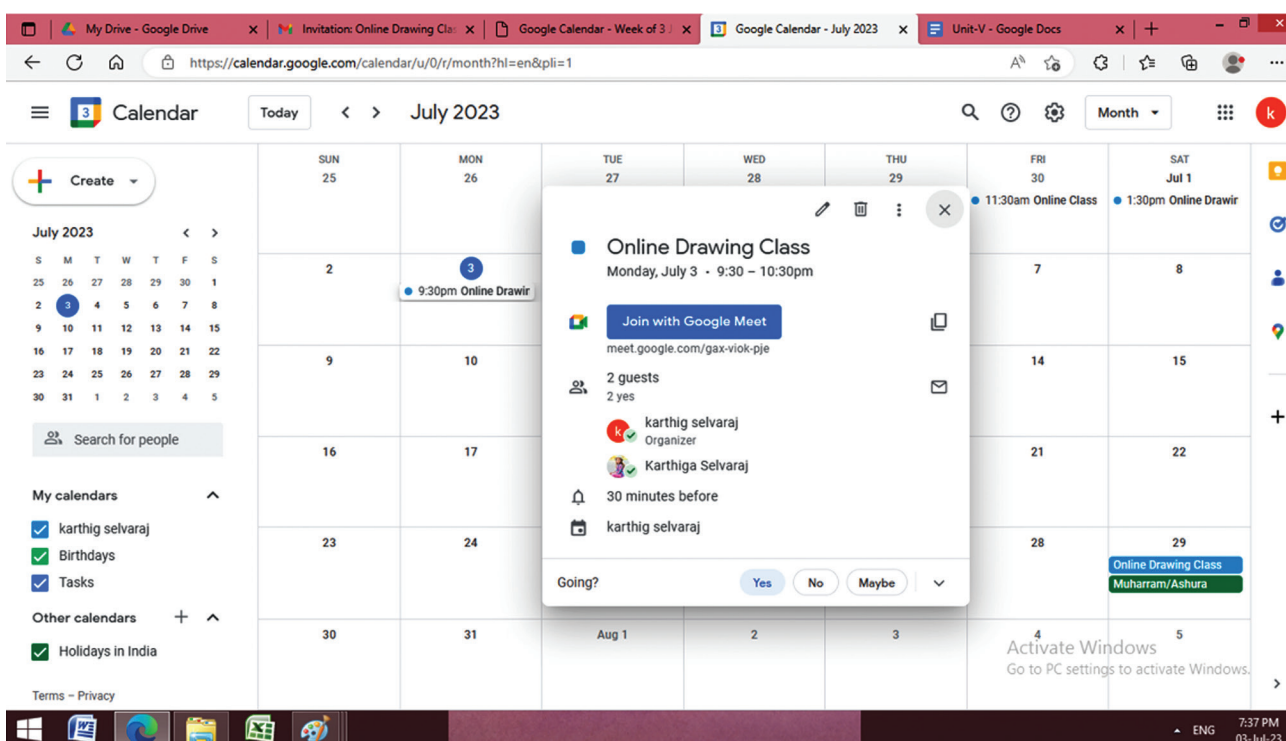
- (i) Enter the Title of the meeting.
- (ii) Enter Date & time of the meeting,
- (iii) Add guest's email id.
- (iv) Finally click on the "Save" button.



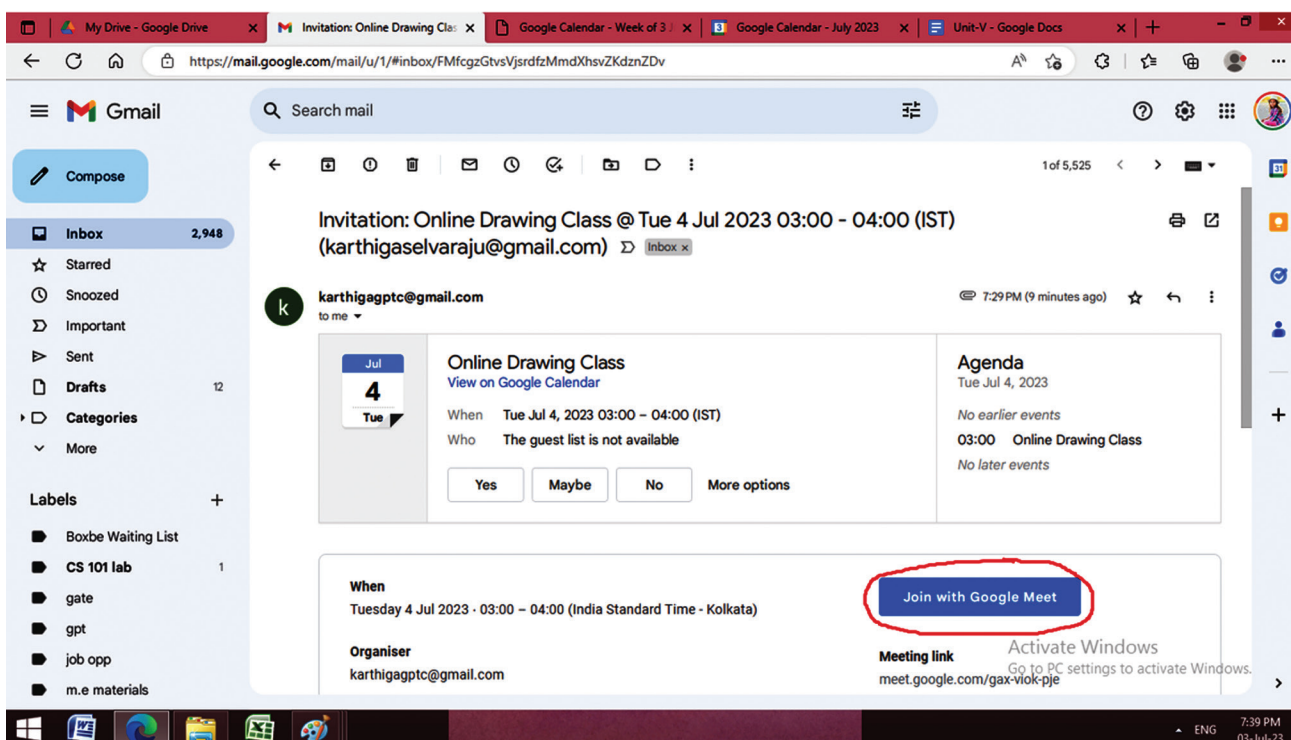
(v) After saving the schedule, a pop will appear. Click on “Send” to invite the guests.



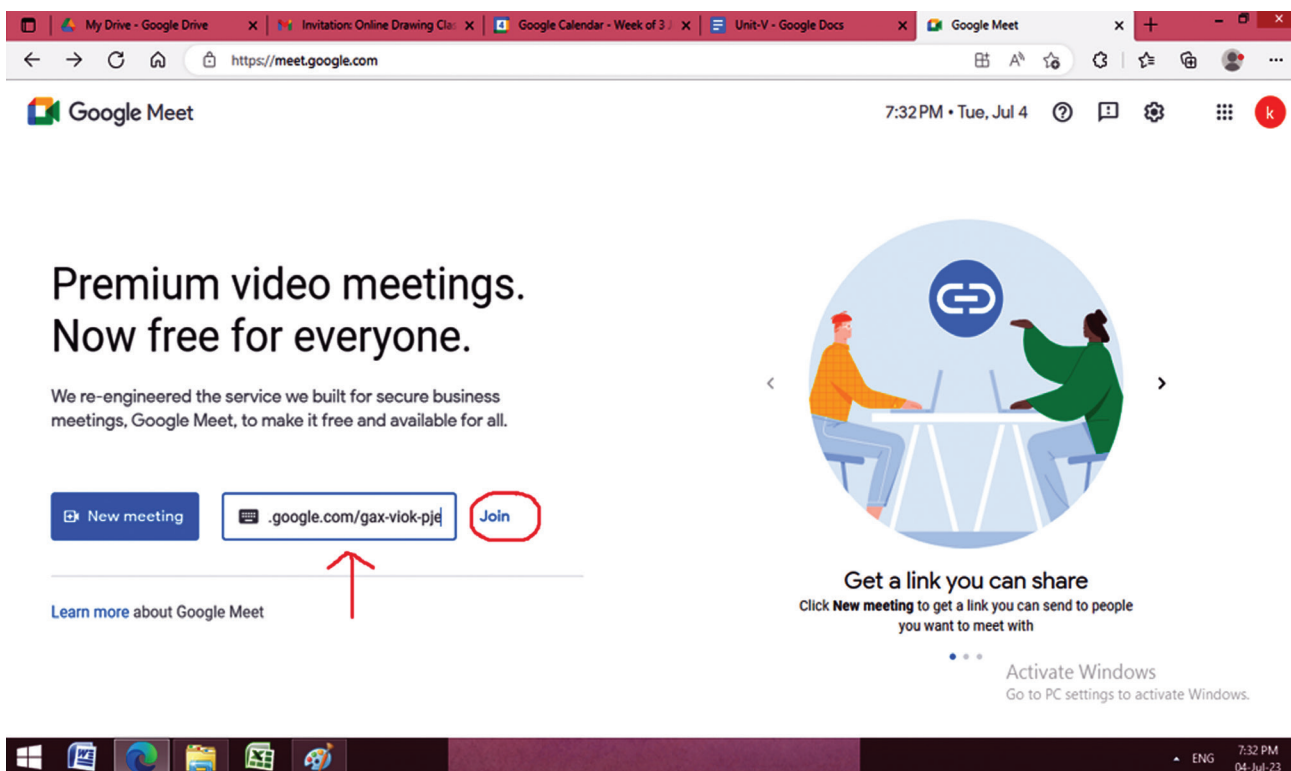
(vi) The Scheduled meeting updated in google calendar.



(vii) Guests will receive the invitation email and they can attend the meeting by clicking the “Join with Google meet” button.

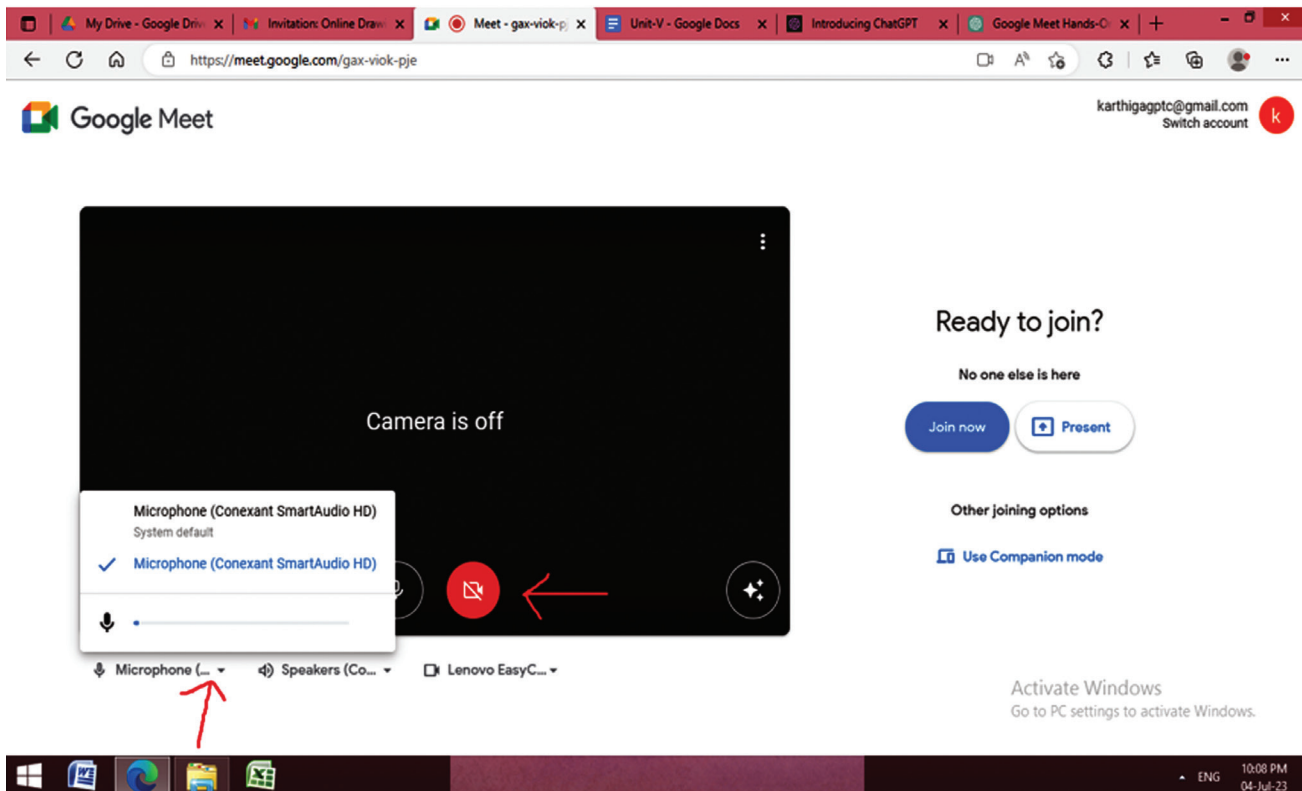


4. **Join a Meeting :** To join a meeting as a guest enter/paste a code or link in the text box and click “join” if someone has provided you with a meeting code or link.



5. Audio and video settings:

(i) Before joining or starting a meeting, turn on or off the microphone and camera by clicking the microphone and camera icon respectively. Choose your preferred microphone, speaker, and camera devices.

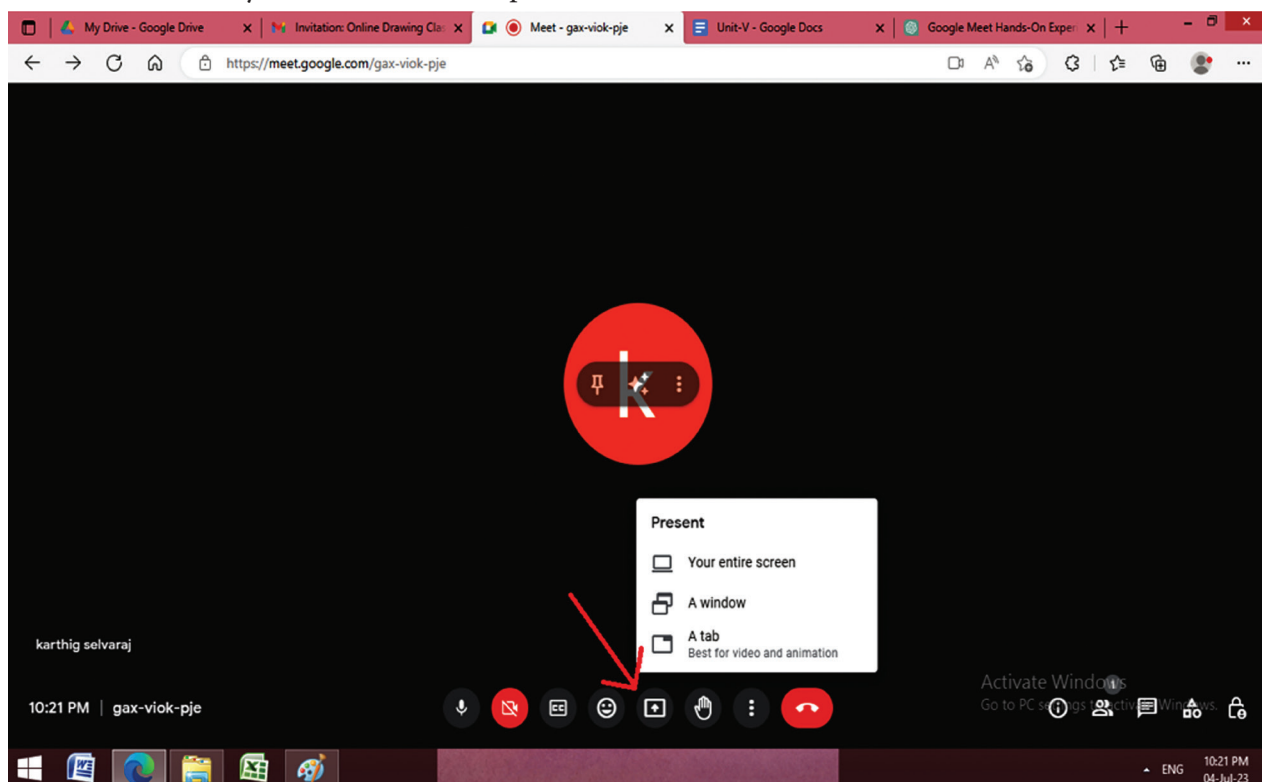


6. Meeting controls:

After joining a meeting, at the bottom of the screen sharing screen and accessing chat functionality will be available along with microphone and camera control.

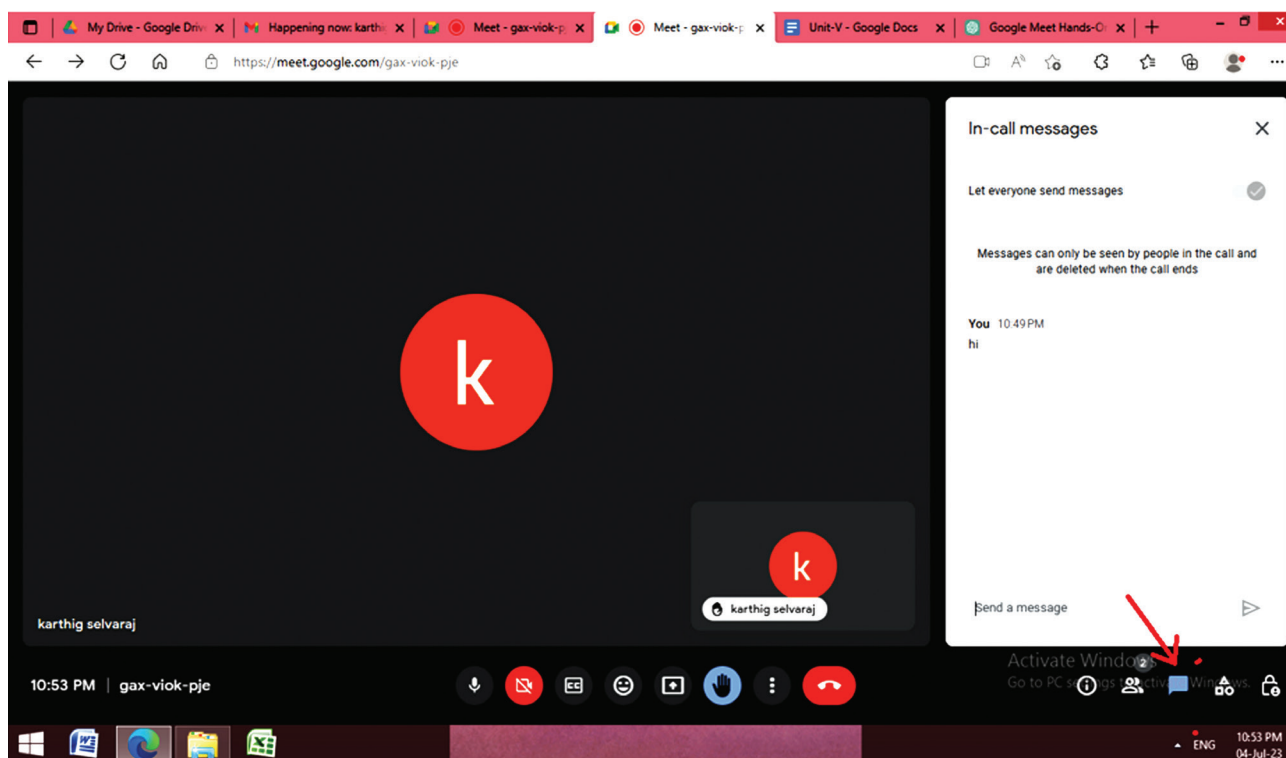
(i) Screen sharing:

To share the screen with others, click on the “Present now” button in the meeting controls. You can then choose to share your entire screen, a specific window, or a Chrome tab.

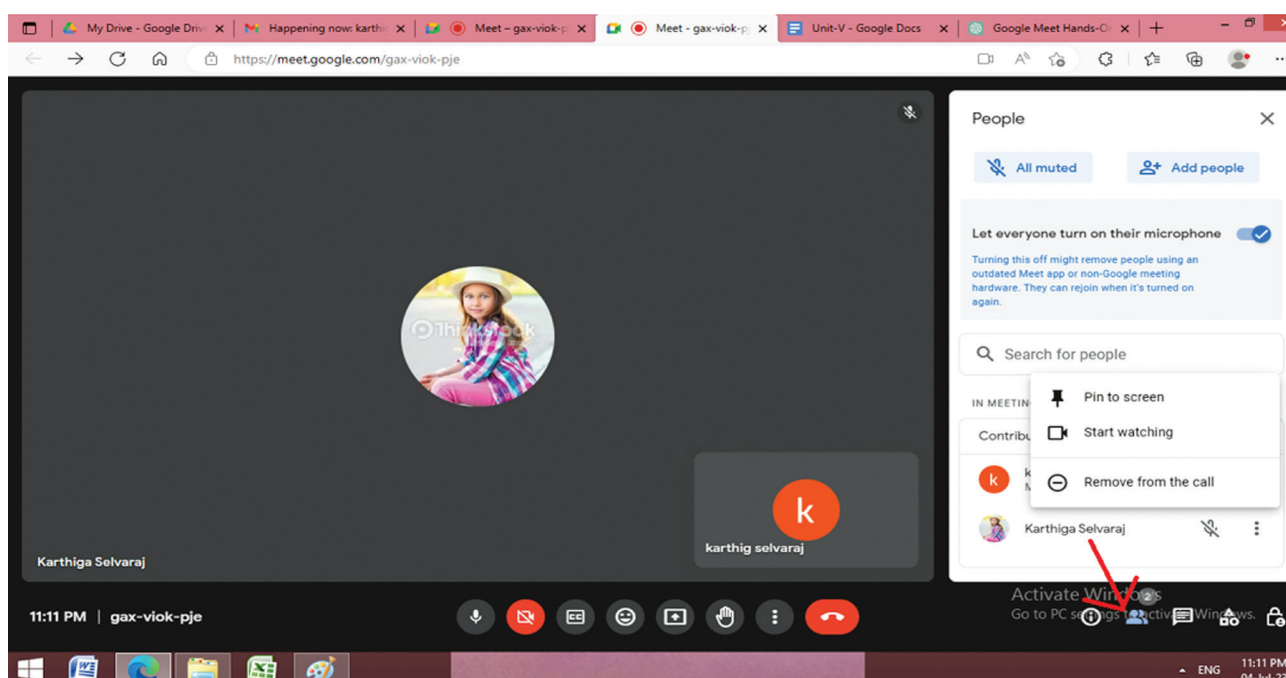


(ii). Chat and collaboration:

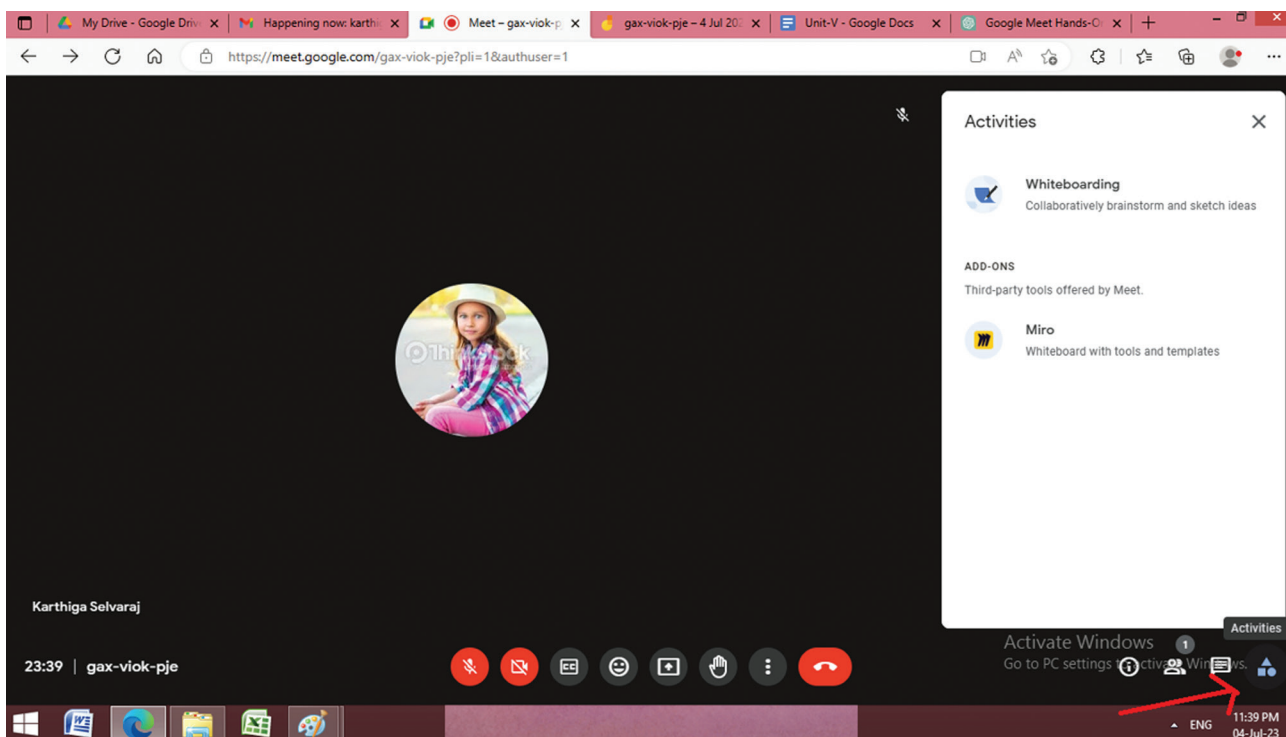
A chat feature to send messages, links, notes, or ask questions to all participants or individuals privately during the meeting.



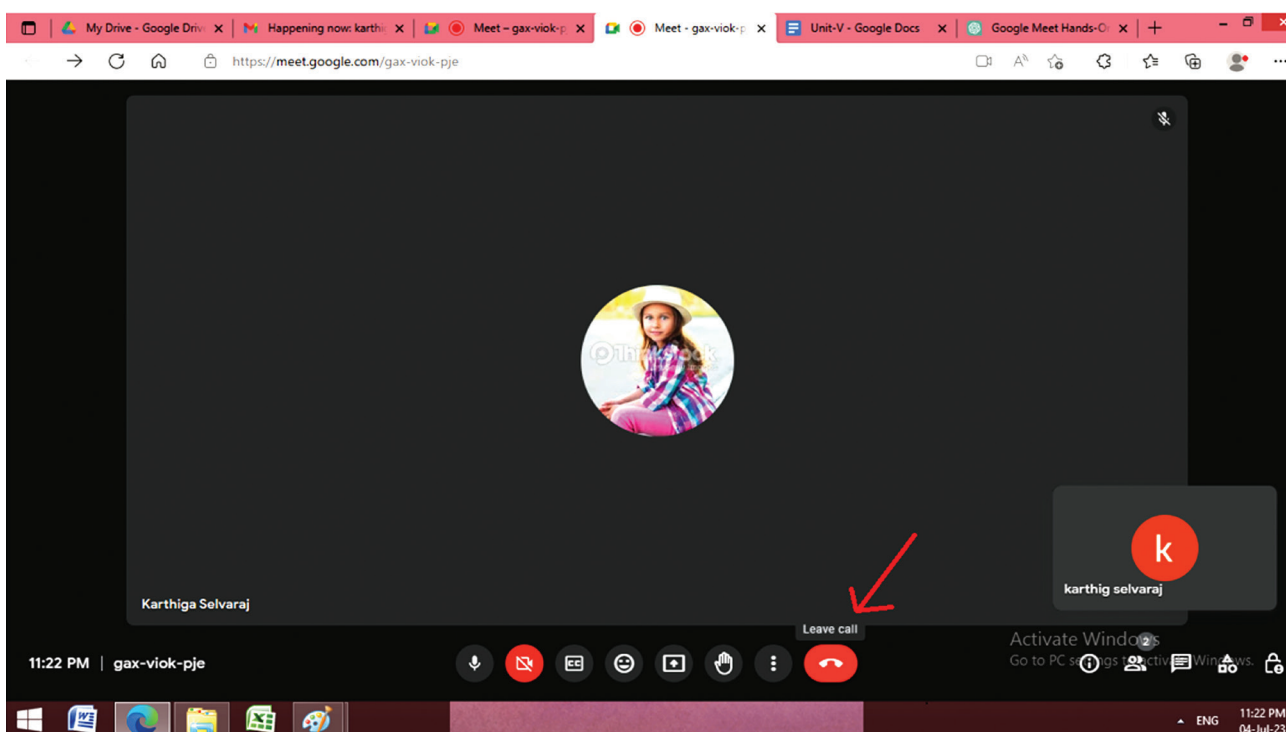
7. Manage meeting participants: The host or co-host can mute or unmute or remove or add participants if necessary and controlling who can present or share their screen.



Collaborative online whiteboard: Open Google Jamboard window in a separate tab or window by clicking the "Activities" menu and share the screen to present the whiteboard.



8. End the meeting: When the meeting is finished, click on the red “Leave” button to exit. The host, you can choose to end the meeting for all participants.



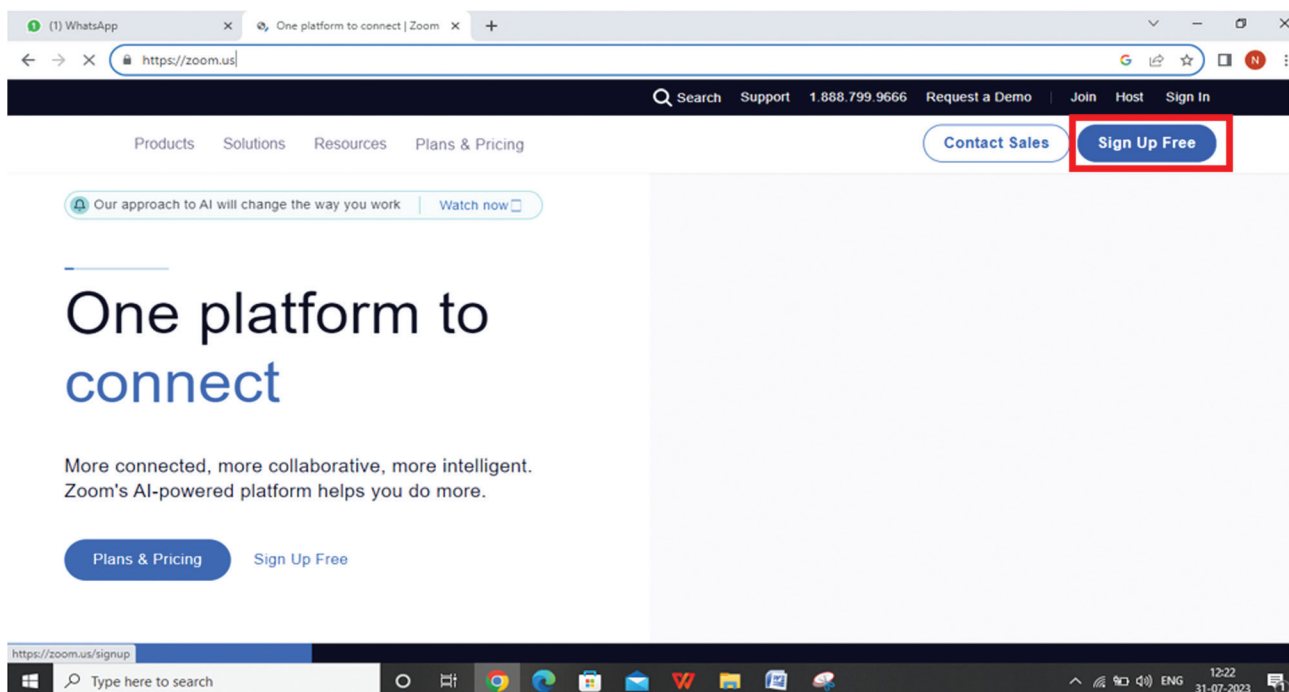
Procedure:

b) Zoom:

Step-by-step guide to getting started with Zoom:

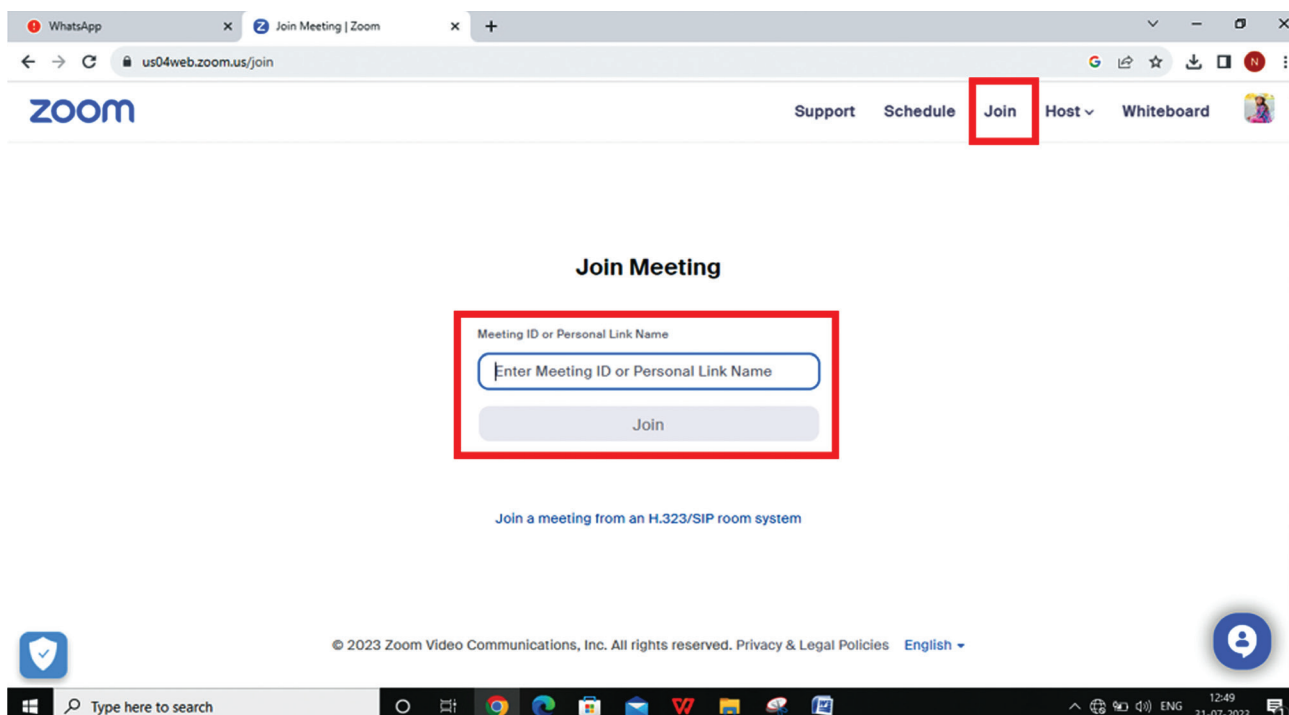
1. Create a Zoom account (for first-time users):

- (i) Go to the Zoom website (zoom.us) or download the Zoom app from your device's app store.
- (ii) Click on “Sign Up” or “Sign Up, It's Free” to create an account using your email address or log in with your Google or Facebook account.



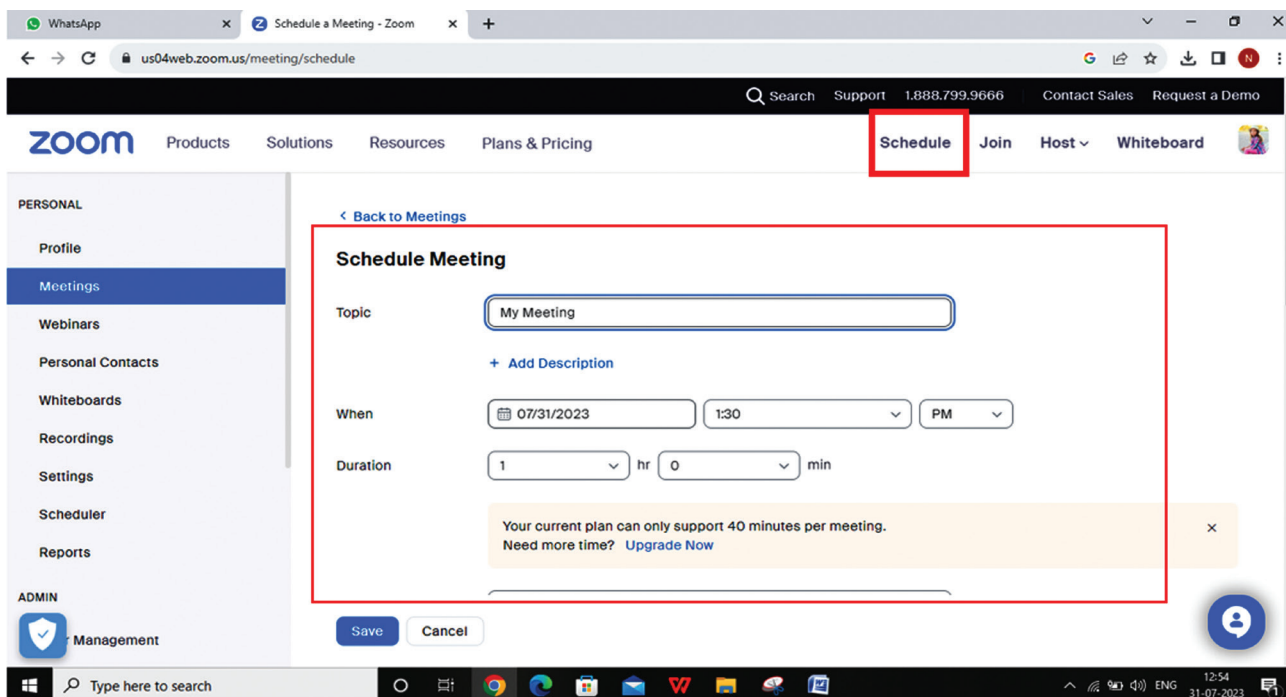
2. Joining a Meeting:

- If you're invited to a Zoom meeting, you'll typically receive a meeting link or ID via email or other messaging platforms.
- Click on the provided link or open the Zoom app and enter the meeting ID to join the meeting.



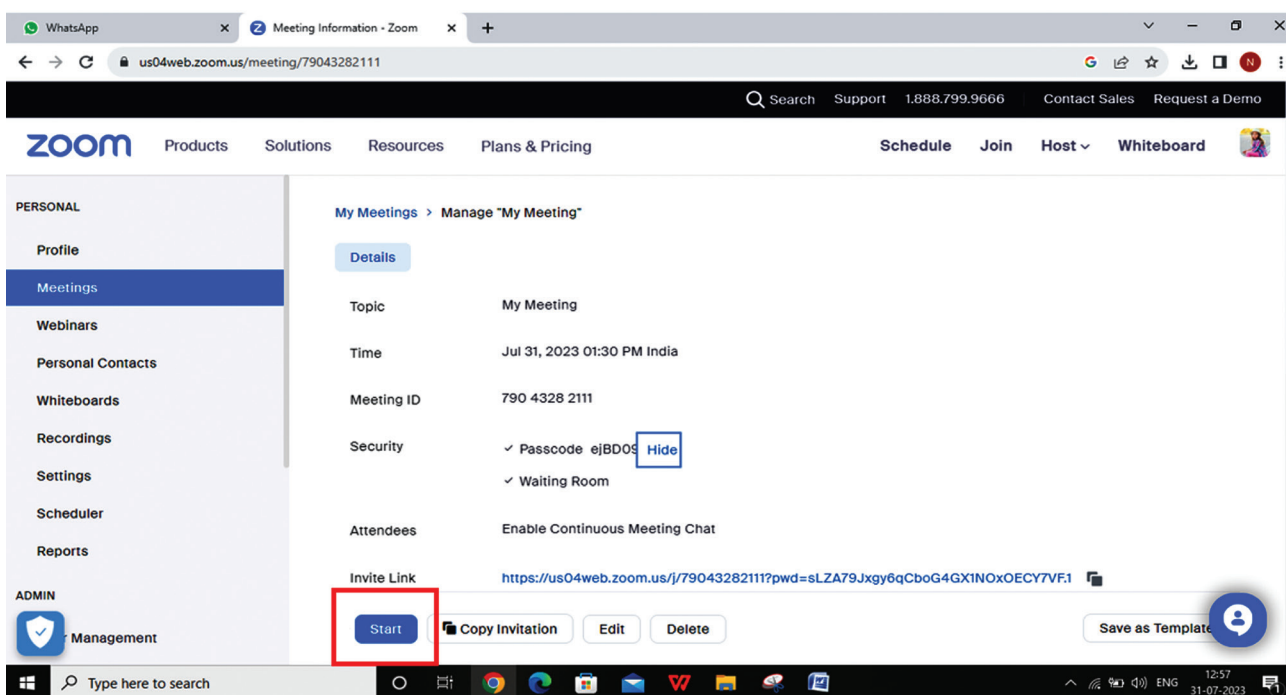
3. Scheduling a Meeting (for hosts):

- Log in to your Zoom account on the Zoom website or app.
- Click on "Schedule a Meeting" or "Host a Meeting" to create a new meeting.
- Fill in the meeting details, such as the date, time, topic, and other settings you may need.
- Save the meeting, and Zoom will provide you with a unique meeting link and ID to share with your participants.



4. Starting a Scheduled Meeting (for hosts):

- If you scheduled a meeting, you can start it by clicking on the “Meetings” tab in the Zoom app or website.
- Find the meeting you want to start and click “Start” to begin the session.



5. Joining a Meeting (for participants):

- Click on the provided meeting link or open the Zoom app and enter the meeting ID.
- If the meeting requires a password, you’ll need to enter it before joining.

6. Navigating in a Meeting:

- Once you're in a meeting, you can mute or unmute your audio using the microphone icon.
- Turn your camera on or off using the camera icon.
- Use the chat feature to send messages to participants or hosts.
- Depending on the meeting settings, you may have access to screen sharing, whiteboard, and other collaboration tools.

7. Leaving a Meeting:

- To leave a meeting, click on "Leave Meeting" at the bottom right corner of the Zoom app or window.

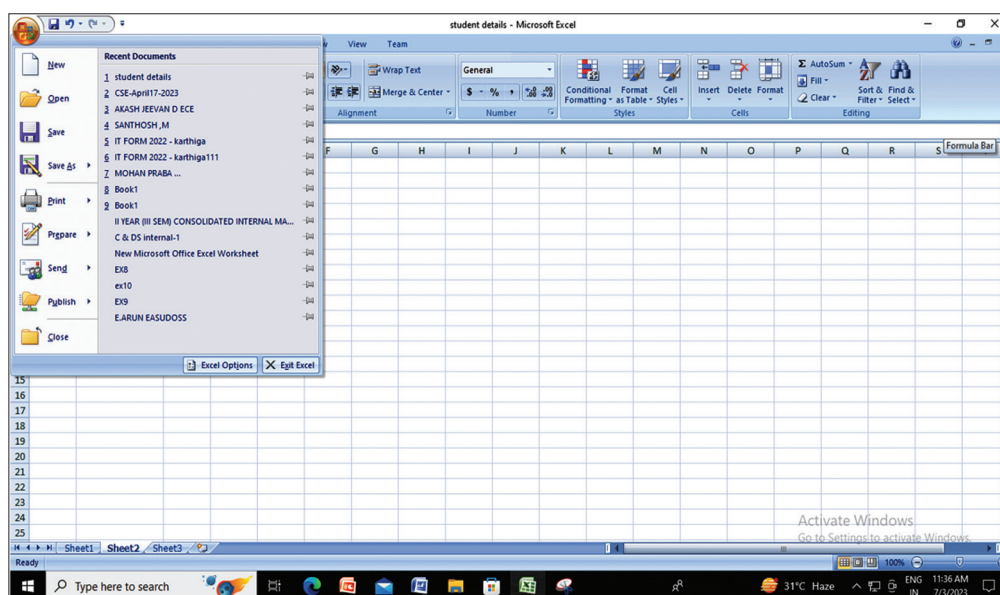
Result:

Thus, the hands-on experience of video conferencing tool Google Meet and Zoom is successfully done.

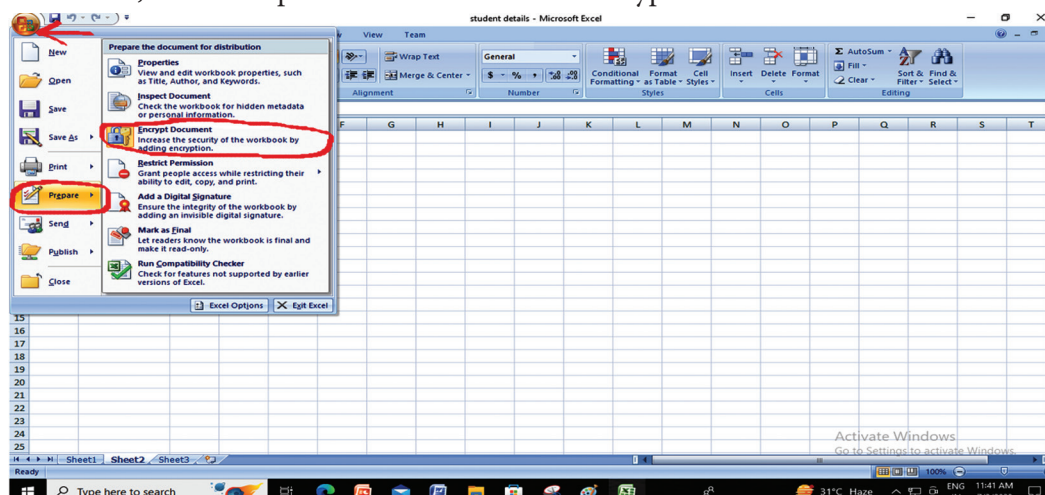
Ex 10(a) : Password protect for Sheets

Aim:

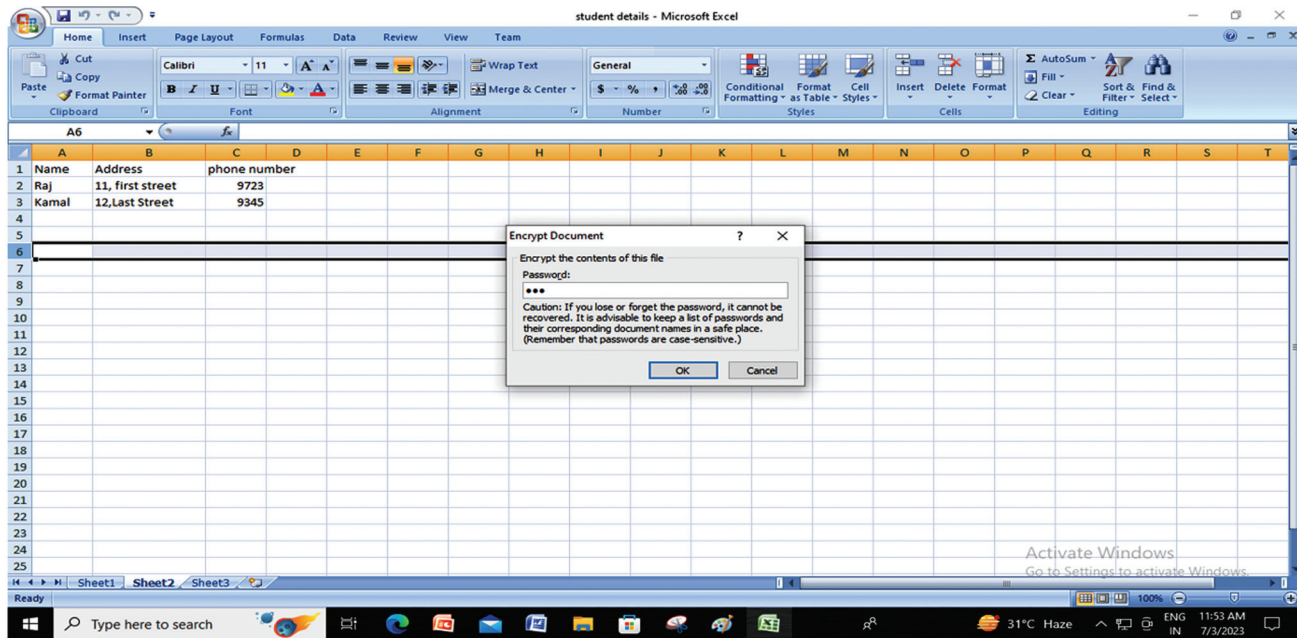
- (i) To protect an entire Excel workbook with a password
 - (i) Procedure to protect entire Excel Workbook with a password :
1. Open the Excel workbook.
 2. Click on the "Office" button located in the top-left corner of the Excel window.



3. From the menu, select "Prepare" and then click on "Encrypt Document".



4. A “Encrypt Document” dialog box will appear. Enter a strong password with the combination of letters, numbers, and special characters.



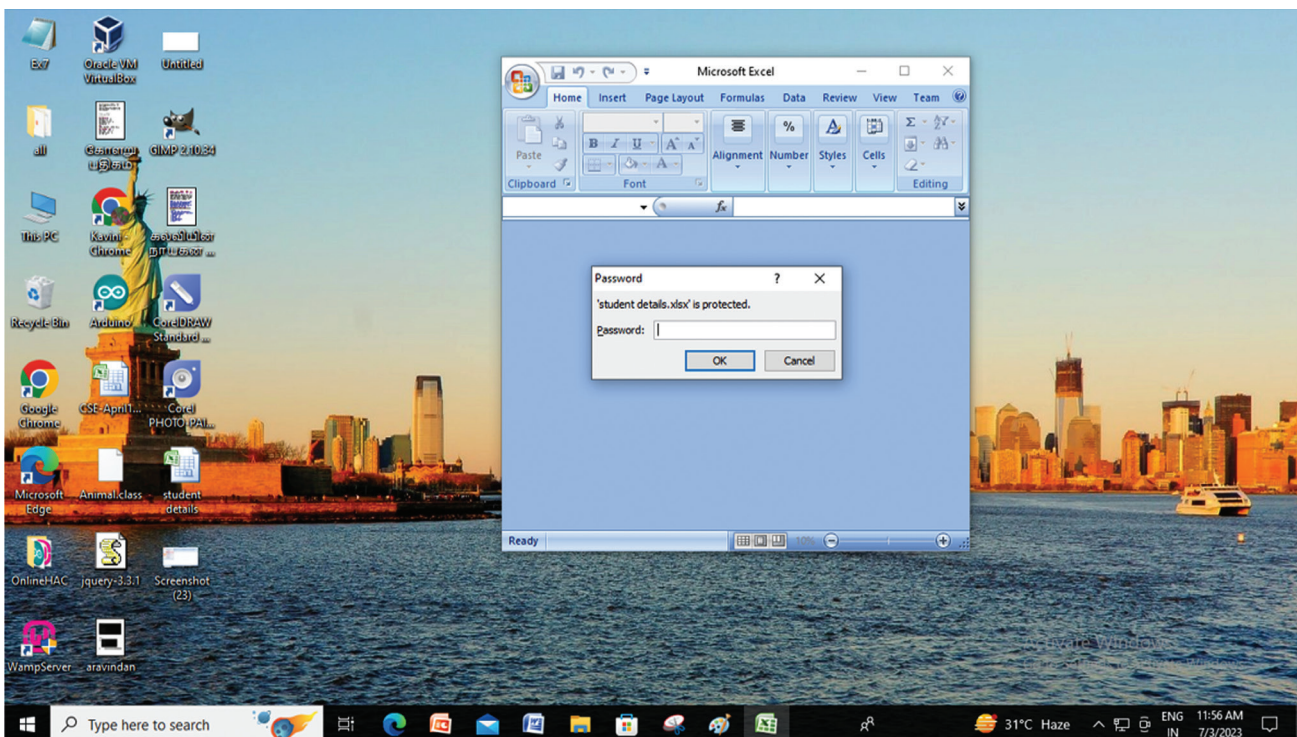
5. Click “OK” to apply the password protection.

6. Confirm the password by entering it again in the confirmation dialog.

7. Save the Excel workbook to ensure that the password protection is applied and close it.

Output :

(i) Password is required while opening the workbook again.



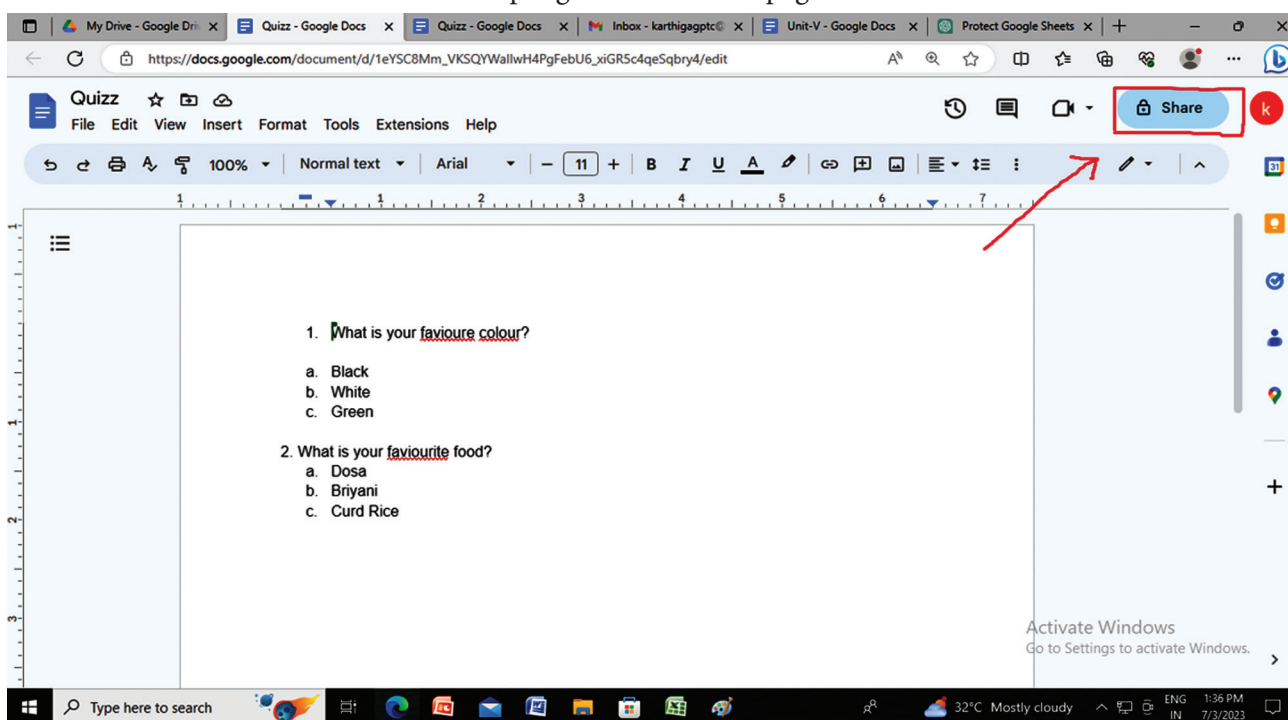
Ex 10 (b) Sharing Google Drive Documents with permission

Aim: To share a google drive document with appropriate permission.

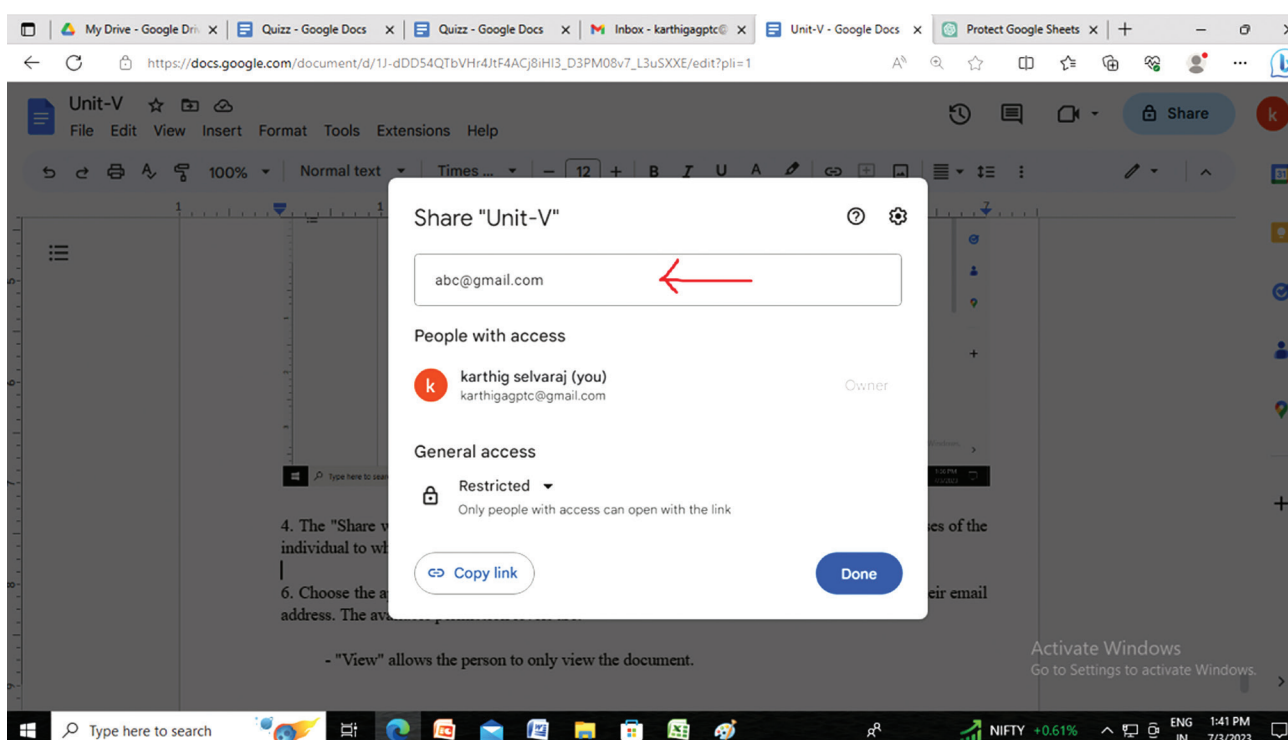
Procedure:

Steps to share Google Drive documents with specific permissions:

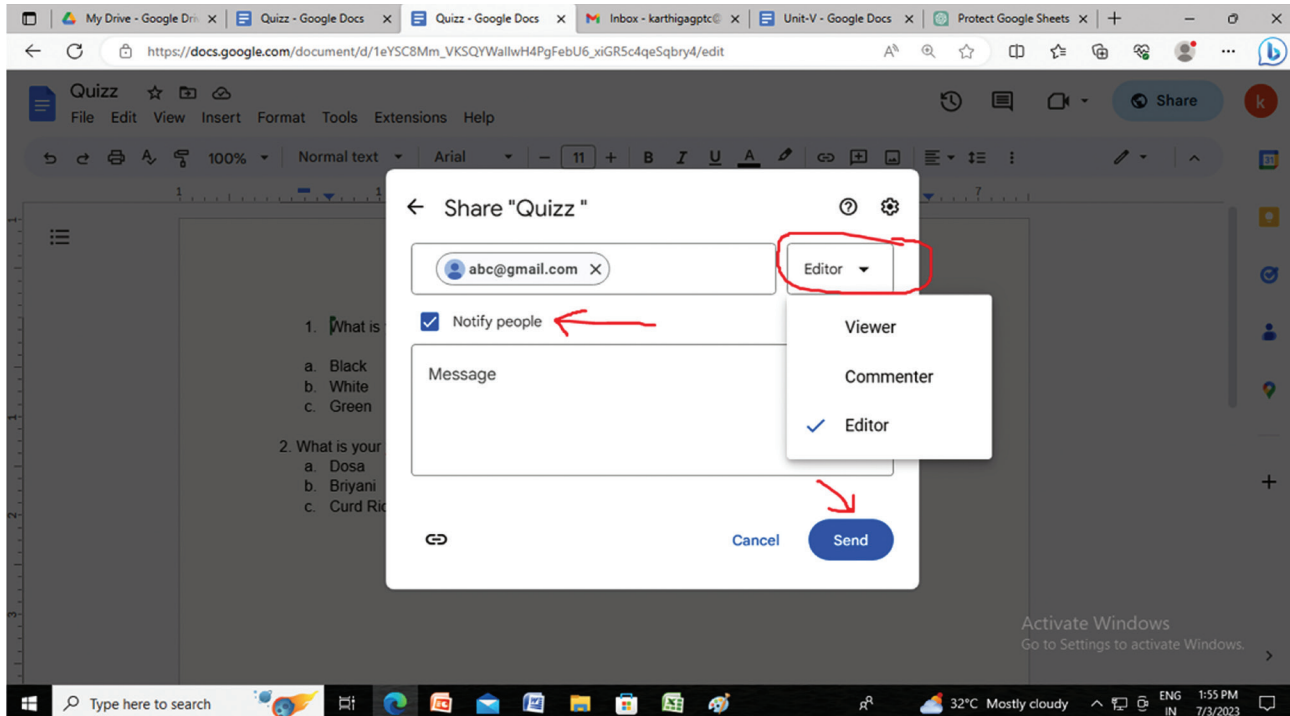
1. Go to <https://drive.google.com> and sign in with Google Account
2. Open the document to share.
3. Click on the “Share” button at the top-right corner of the page.



4. The “Share with others” dialog box will appear. In the “People” field, enter the email addresses of the individual to whom the document needs to be shared.

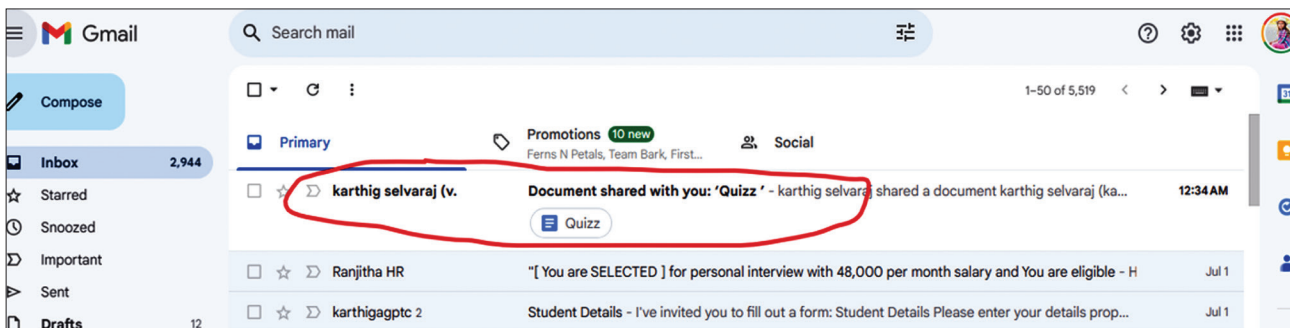


5. Choose the appropriate permission level among the roles: View, Commentor, Editor as per the need and click on “Notify people” checkbox.
6. Click on the “Send” button to share the document with the specified permissions.



Output

The recipients will receive an email notification with a link to access the shared document. They will be able to open the document in their own Google Drive and perform the actions based on the permission level granted to them.



Result:

Thus, the google drive document is successfully shared with appropriate permission.



NOTE





NOTE





NOTE

