



5

C<>deBot

Windows 10 with Office 2016

Davinder Singh Minhas

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Content Writer : Meenakshi Aneja

Web Software Developer : Akash

Editor : Gaurav Gupta

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Ph.: 0120-4300130-33, Mob.: 9540990177

E-mail: info@pmpublishers.in

URL: www.pmpublishers.in

PREFACE

Technology is one of the biggest catalysts in transforming and improving education process while playing a vital role in the progress of a country. As we know, the world is changing at a fast pace and so is the technology. Hence, it is imperative for us to make our students match this pace, and also to help them inculcate futuristic skills and mindset.

To make students ready to face the uncertain challenges and to stay tuned with the unprecedented journey of technology, **National Education Policy 2020** has suggested certain skills that should be learnt by them. These skills will help them in becoming successful, innovative, adaptable, and productive human beings in the various fields such as **Digital Literacy, Coding, Computational Thinking** and **Artificial Intelligence** in the rapidly changing tech-savvy world.

Envisaging the same vision of National Education Policy 2020, we have created **CodeBot**, a comprehensive, exhaustive computer series for classes 1 to 8. This series is based on the latest software packages and operating system such as **Microsoft Office 2016** and **Windows 10**.

This series contains **five** sections:

- **Digital Literacy:** This section would discern students the use of computer technology in day-to-day life. It would also help them comprehend the computer subject as a tool, which can be **integrated** with other subjects.
- **Computational Thinking:** To inculcate the skills of problem-solving among the students, we have introduced Computational Thinking from class 1 to 5. It consists of interesting and engaging activities on Patterns, Decomposition, Abstraction, Algorithm, etc.
- **Coding Junction:** Having children learn coding at an early age helps them organize their thinking and express their ideas to create programs using the computer. It empowers them not only to use technology, but also to create it. Keeping this in mind, we have introduced interactive fun-based coding for all levels such as **Scratch Jr** and **Scratch** from class 2 to 5; **Python** with gamification and GUI-based coding and **MIT App Inventor** from class 6 to 8.
- **Artificial Intelligence (AI):** Knowledge of Artificial intelligence is becoming more and more important as the students have to be AI-ready for the present and future. Therefore, we have introduced AI from class 1 onwards in a fun and engaging manner.
- **Cyber Zone:** This section covers Internet literacy and throws light on issues such as **cybercrimes** and **cyber security**, thereby encouraging students to be good digital citizens.

To produce a visually appealing and easy to understand book, we have artfully combined the latest technologies, pictures, drawings and texts in this series. Most of the topics in this series show a **step-by-step pedagogy** which simplifies the complex computer concepts. The terms and examples described in this series are those which every student will encounter while using computers.

To make the chapters exciting, **topic-relevant projects** have been added that encourage the students to try out for themselves, and to instill in them the confidence before they embark on making their own project using a particular software. Each project in the chapter presents practical problems and their complete solution in an easy-to-understand approach.

In a Nutshell section summarizes the whole chapter and the **Self-Evaluation** section examines the students and their understanding of chapter-wise computer concepts. **Exercises** and **Activities** have been included at the end of every chapter to assess the level of understanding of students.

We welcome constructive suggestions and feedback to make this series more comprehensive, relevant, updated and useful both for the teachers and the learners. You may mail us at editor@pmpublishers.in.

AUTHOR

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1

Computer – History and Generations

OBJECTIVES

After completing this chapter, you will be able to:

- Understand and learn about early calculating devices.
- Learn about the first electro-mechanical computer and electronic computer.
- Understand about different generations of computer.

Hello Friends! The computer which you see today was not like this before. It took many years to make the computer as you see it today. Let us look at the history and generations of the computer.



Concept of Counting

The computer is an electronic machine that has touched every aspect of our lives, making our work faster, easier, and well-organized. We rely on computers for most of our daily work. It has been a combination of **efforts** and **ideas** of many people from all over the world that has resulted in the computers that we see and use today.

The concept of counting started with the evolution of human beings. In the **ancient times**, people used to count with the help of fingers, toes, stones, sticks, bones, pebbles, etc. and store the information by making marks on walls, rocks, etc.



Fingers



Toes



Stones



Sticks



Bones

In the course of time, it became difficult to do bigger and complex calculations with such a method. So, there was a need of some kind of device which could make the tasks easier. Thus, the first calculating device '**ABACUS**' was invented.

Early Calculating Devices

ABACUS

Abacus was the first calculating device invented about 5000 years ago by the **Chinese**. Simple calculations like addition and subtraction were performed, using the abacus. It is still in use in many parts of the world.



Abacus

NAPIER'S BONES

In 1617, a Scottish mathematician **John Napier** invented a calculating device called **Napier's Bones**. This device is a set of rectangular rods marked with numbers on them.

It was meant for simple calculations like addition, subtraction and multiplication of numbers. Later on, it was improved to perform division and to find out the square root.



John Napier



Napier's Bones

PASCALINE

In 1642, a French mathematician named **Blaise Pascal** invented the **first mechanical computing machine** known as **Pascaline**.

It consisted of a box with movable gears that could add, subtract, multiply, and divide the numbers very easily.



Pascaline



Blaise Pascal

LEIBNIZ'S STEP RECKONER

In 1673, the more advanced calculating machine named **Step Reckoner** was developed by a German mathematician **Gottfried Wilhelm von Leibniz**. It could perform all four basic mathematical operations.

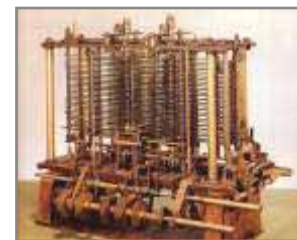


Leibniz's Step Reckoner

ANALYTICAL ENGINE

In 1822, a mathematics professor of Cambridge University, England, **Charles Babbage** developed a machine known as **Difference Engine**. It could perform mathematical operations automatically. However in 1833, Babbage had a better idea, and he stopped working on Difference Engine and started designing another machine called **Analytical Engine**.

It had five key features, i.e. **input device**, **storage unit**, **processor**, **control unit** and **output device**. All these five features are found in today's modern computers. Therefore, Charles Babbage is also known as the '**Father of Computer**'.



Analytical Engine



Charles Babbage

TABULATING MACHINE

In 1890, **Herman Hollerith**, an army engineer invented the **Tabulating Machine**. This Tabulating Machine was used in **census** (to count the population) of the USA. It gave a quick count of the US population.

The use of the Tabulating Machine was so successful that Hollerith formed a company that later became famous as the **International Business Machine** or **IBM**.



Tabulating Machine

The First Electro-Mechanical Computer

MARK I

In 1944, **Prof. Howard Aiken** built the first electro-mechanical computer named **Mark I**.

It was 51 feet long, weighed 5 tons, and used a typewriter for input and punched cards for output. This device was the first computer in a real sense.



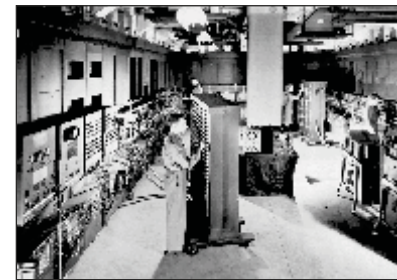
Mark I

The First Electronic Computer

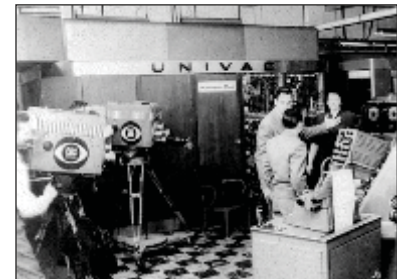
ENIAC AND UNIVAC

John Mauchly and **John Presper Eckert** together built the first successful electronic digital computer known as **ENIAC** (Electronic Numerical Integrator And Computer). It was made operational in 1946. ENIAC was 10 feet wide and 100 feet long; it occupied 1800 square feet of area and could perform 5000 additions per second.

In 1951, **John Mauchly** and **John Presper Eckert** developed another successful computer known as **UNIVAC** (Universal Automatic Computer). It could work on both numeric and textual information. It was the first commercial computer delivered to a business client, **US Census Bureau**, in 1951.



ENIAC



UNIVAC

Personal Computer

In 1981, **IBM** introduced its first **Personal Computer (PC)** and in 1984, they introduced the advanced version called **PC-AT** (Personal Computer – Advanced Technology). These computers were smaller in size, faster in speed, more accurate, and reliable.



Personal Computer

There are several types of personal computers available nowadays. Desktop computer, laptop computer, and tablet computer are some of its examples.



Update Your Knowledge



Even today, the concept of **Abacus** is used in pre-nursery classes to teach simple counting in a play-way method.



Update Your Knowledge

The principle of **Pascaline** is still used today in water meter, odometer and speedometer.

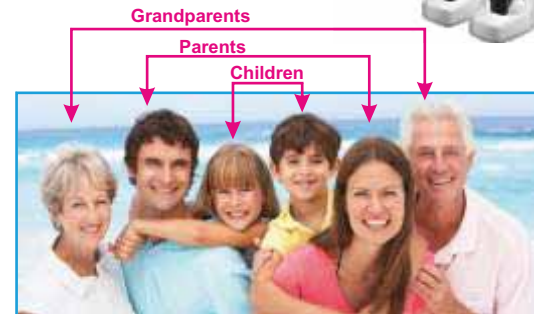
After learning about the history of computer, you are going to learn about the generations of computer.



Generation

Dear children, we all have different generations of people in our family, like grandparents, parents, and children.

Computer also has its different generations like:



UNIVAC



Personal Computer (PC)



Desktop Computer



Raspberry Pi



Smartphone



Tablet PC



Notebook



All-in-one Computer

You can see in the above pictures that with each new generation, the computer has become smaller, faster, and more advanced than the previous generation.

Generations of Computer

Generation means the production or creation of something. In terms of computer, it implies significant development and growth in computer technology.

The development of computer technology took place in five distinct phases called **Computer Generations**. The different computer generations are categorized according to their technology of basic computing elements.

Let us learn about these different generations of computer.



Update Your Knowledge



The **Raspberry Pi** is a tiny, credit card size computer that can be plugged into a computer monitor and works with a standard keyboard and mouse. It enables you to explore computing, and to learn how to program in languages like Scratch and Python.

FIRST GENERATION COMPUTERS (1946-1958)

The **First Generation of Computers** started in 1946. The makers of these computers used thousands of **vacuum tubes** which were often huge, taking up the space of an entire room.



Vacuum Tube

SECOND GENERATION COMPUTERS (1959-1964)

In the late 1950s, the **Second Generation Computers** were introduced. These computers used **transistors** in place of vacuum tubes.

The transistors were far superior than vacuum tubes that allowed computers to become smaller, faster, and more reliable than the first generation computers.



Transistors

THIRD GENERATION COMPUTERS (1965-1970)

In the mid 1960s, the development of **Integrated Circuit (IC)** was a major breakthrough resulting in the introduction of the **Third Generation Computers**.

The transistors were replaced by the Integrated Circuits, also known as **Semiconductor Chips**, which made the computer more powerful, and increased its speed and efficiency.

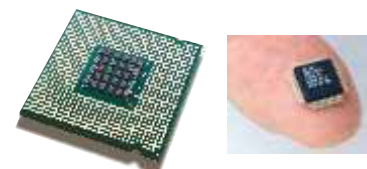


Integrated Circuit (IC)

FOURTH GENERATION COMPUTERS (1971 ONWARDS)

The **Fourth Generation of Computers** started in 1971, and they used **Microprocessor**, which is a single chip that does all the processing.

The size of computer became very small as thousands of **Integrated Circuits** were built onto a single **chip**. These computers became more powerful and they could be linked together to form a **network**, which led to the development of **Internet**.



Chip

In 1981, IBM introduced its first **Personal Computer (PC)** for the home users and in 1984, Apple introduced the **Macintosh**.

FIFTH GENERATION COMPUTERS (PRESENT AND BEYOND)

The **Fifth Generation Computers** are based on **Artificial Intelligence (AI)**. They are still in research and development phase.

The main goal of the fifth generation is to develop the computers that can respond to natural language, and are capable of learning and taking their own decisions.



Robot



Self-Evaluation

CHECKLIST

After reading the chapter, I know these points:

- I know that the Abacus was the first calculating device.
- I know that the Charles Babbage is known as the 'Father of Computer'.
- I know that first electro-mechanical computer Mark I was built in 1944.
- I know that IBM introduced the first Personal Computer in 1981.
- I know that the First Generation Computers used vacuum tubes.
- I know that the Second Generation Computers used transistors.
- I know that the Third Generation Computers used integrated circuits.
- I know that the Fourth Generation Computers use microprocessor.
- I know that the Fifth Generation Computers use Artificial Intelligence.

Agree	Disagree
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
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Exercises

A. Tick [✓] the correct answer.

1. The first calculating device was
 a. Napier's Bones ☐ b. Abacus ☐ c. Pascaline ☐
2. Which calculating device was developed by Gottfried Wilhelm von Leibniz?
 a. Pascaline ☐ b. Mark I ☐ c. Step Reckoner ☐
3. is known as the 'Father of Computer'.
 a. Charles Babbage ☐ b. Herman Hollerith ☐ c. Blaise Pascal ☐
4. The second generation computers used
 a. transistors ☐ b. vacuum tube ☐ c. IC ☐
5. The generation computers are based on Artificial Intelligence.
 a. first ☐ b. third ☐ c. fifth ☐

B. Write 'T' for True and 'F' for False statements.

1. Early man used to count with the help of stones, fingers, etc.
2. Herman Hollerith invented Tabulating Machine in 1990.
3. Mark I was the first electro-mechanical computer.
4. The third generation of computers used vacuum tubes.
5. Integrated circuits are used in the fourth generation of computers.

<input type="checkbox"/>
<input type="checkbox"/>
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C. Fill in the blanks.

1. Abacus was invented by the
2. was invented by Blaise Pascal in 1642.
3. invented Difference Engine and Analytical Engine.
4. The fifth generation computers are still in and phase.

D. Read the clues and name the machines.

1. Its numbers were marked on a set of rectangular rods.
.....

2. Vacuum tubes were replaced by it.
.....

E. Differentiate between the following.

- | | |
|------------------------------|----------------------------|
| 1. First Generation Computer | Second Generation Computer |
| | |
| | |
| | |
| 2. Third Generation Computer | Fourth Generation Computer |
| | |
| | |
| | |

F. Answer the following questions.

1. Name the five key features that Charles Babbage used in Analytical Engine.
.....
.....

2. What is a microprocessor? Which generation used it?
.....
.....
.....

3. What is the main goal of fifth generation of computers?
.....
.....
.....

G. Application-based Question

Your father wants to buy a device for your younger brother to help him learn counting. Which calculating device would you suggest?
.....

Activity Section



Activity Write

Complete the following table.

Generation	Period	Technology
1 st		
2 nd		
3 rd		
4 th		
5 th		

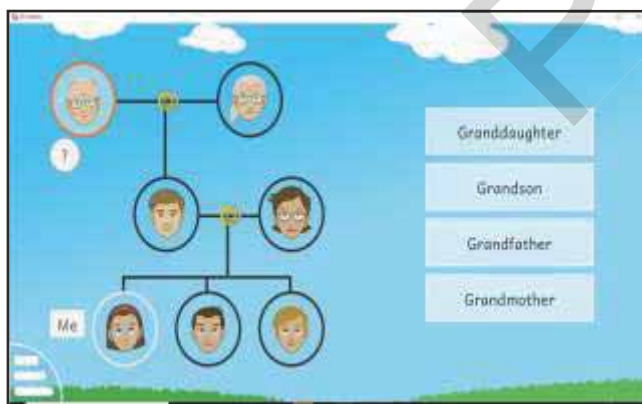
Lab Activity

Open the Educational Suite GCompris [].

1. Click on **search** icon [].
2. Type 'family'.
3. Click on **Family** [].

Skill Formation

This activity would make students understand and analyse the relationships they share in the family over the generations.



PLAYING METHOD

By playing this game, you will learn about the relationships in a family.

The circles are linked with lines to mark the relations. Married couples are marked with **ring** on the link. You are the person in **white circle**. Click on the name of the relationship you share with the person in the **orange circle**.

Group Discussion

Divide the students into two groups and discuss the topic– 'Journey of Computers from Vacuum Tubes to Artificial Intelligence'.

Online Link

To learn more about history of computers, visit the website:

<https://www.computerhistory.org/timeline/computers/>

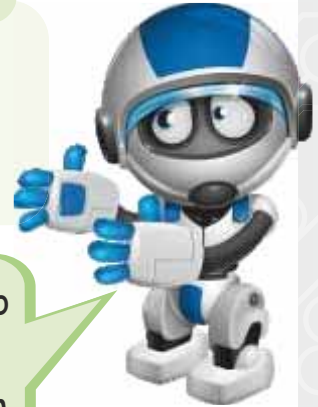
2

Windows – File Management

OBJECTIVES

After completing this chapter, you will be able to:

- Learn how to manage files, folders and subfolders.
- Understand the function and use of File Explorer.
- View, select, create and delete files and folders.



Hello Friends! While working on a computer, you need to store all the work in the form of files and folders. In this chapter, I am going to make you familiar with them and tell you how to manage them.

File Management

File management helps you to organize and keep track of your files in the computer. There are thousands of files stored in the computer, and every file has a name called **filename**. Using file management, you can manage these files according to their name, format, size, date, etc. so that they are easy to find when you need them.

FILES

All the work that you do in a computer is stored in the form of **file**. A file contains anything such as drawing, text, and/or picture, created using a software. It is a collection of data and information. A file can be a **document file** when you write in it. It can be a **picture file** when you draw and color in it.

Every file has its own unique name. No two files of the same name can be saved at the same location in a computer. A computer represents files with **icons**. By looking at a file icon, you can tell what kind of file it is.

There are various types of files: **document files**, **spreadsheet files**, **image files**, **audio/video files**, **PDF files** and so on.



Document file



Spreadsheet file



Image file



Video file



PDF file

FOLDERS

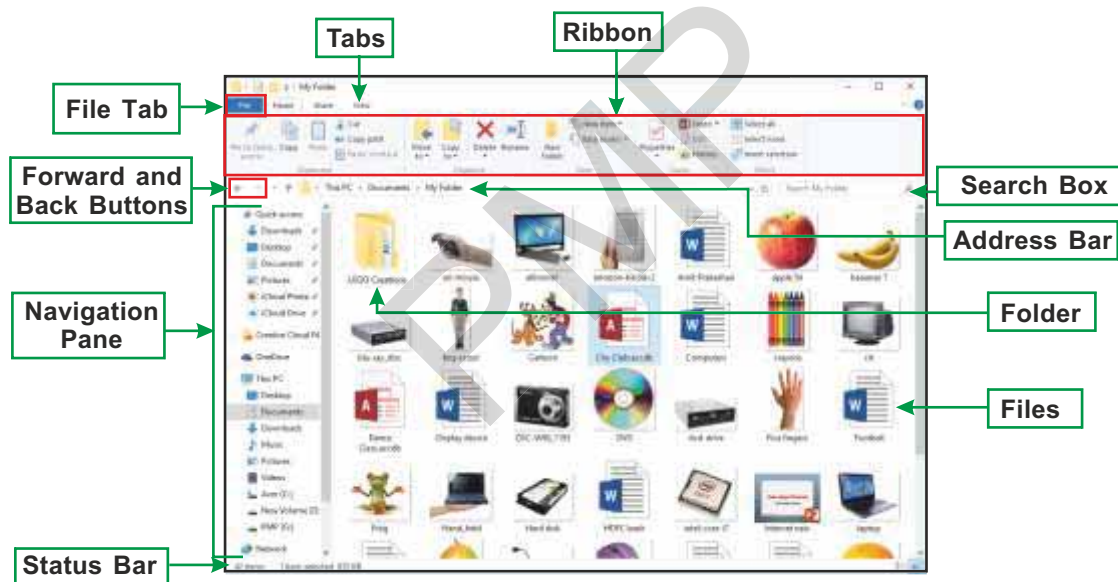
You know that every work you do in a computer is stored in the form of file. There are thousands of files stored in the computer. If you want to find out a particular file out of those thousand files which are stored in the computer, it will take a lot of time and energy. So, these files can be organized into folders.

In the computer, a **folder** is a location for organizing your files. A similar group of files saved together under a common name is called a **folder**. A folder has a unique name. There cannot be two folders of the same name at a particular location.

Parts of a Folder

You can **double-click** the folder icon to open it and see what is inside it. When you open a folder, it opens in a window. A **window** is a rectangular area on the screen that displays the contents of an application or folder.

In addition to displaying the contents of the folder, a folder window has a variety of parts that are designed to help you work with files and folders more easily. Let us have a look at the various parts of folder window.



Various Parts of Folder

SUBFOLDERS

Most folders contain files, but some folders contain additional folders, which we call **subfolders**. Subfolder is a folder within another folder.

A folder in a computer is also represented by an **icon**. By looking at these icons, you can differentiate between the folders.



An empty folder



A folder containing files



A folder containing subfolders

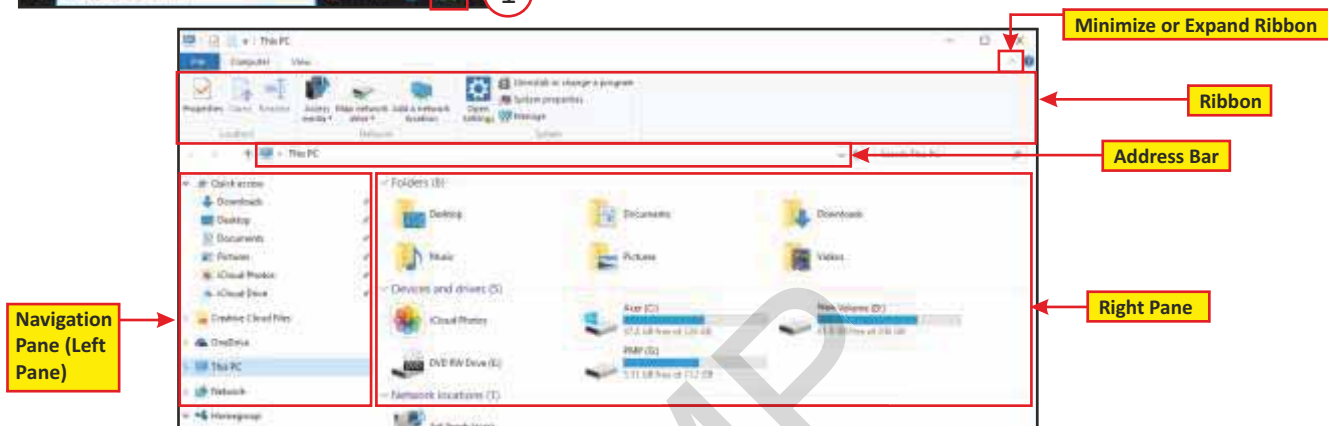
File Explorer

The **File Explorer** plays a key role in your Windows 10 experience. It is used for viewing files and folders in a hierarchical order. It is very helpful for efficiently organizing files and folders that are stored in different disk drives of a computer. You can move, rename, and delete files in File Explorer.



1. Click on **File Explorer** icon on the Taskbar (or press **Windows + E**).

This PC window will appear.

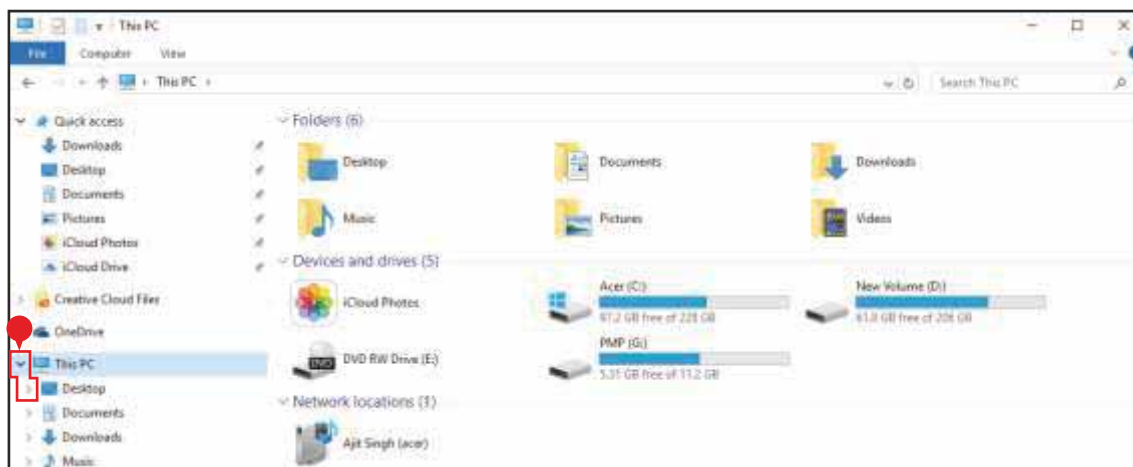


The main function of File Explorer is to **browse**, **open**, and **manage** the files and folders stored on your hard drive.

Across the top of the Explorer window is the **ribbon**. Just below the ribbon is the **address bar**. It indicates the location on your hard drive that is currently being viewed within the main window.

Depending on your settings, you may also have a **navigation pane** on the left side of the window. This can be used as a way of quickly navigating through your **libraries** and **favorite** folders.

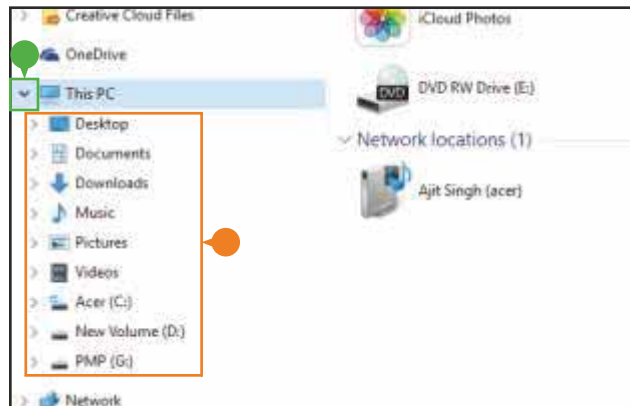
The **right pane** displays the contents of the folder/drive that is selected on left side pane. You can also use the right side to preview a file without having to open it. It shows images and documents that you have created.



- There are **two signs**, expand [>] and collapse [∨], in front of a disk drive or folder name. A [>] indicates that the folder contains subfolders or files. If you click this sign, it shows the subfolders inside and at the same time the [>] sign changes to [∨] sign. This process is called **expanding** of a folder. If you click [∨] sign, which is in front of a folder, the expanded subfolders collapse back.



- To display the folders within a folder, click on [>] sign beside the folder.



- The **subfolders** appear.
- The [>] sign besides the folder changes to [∨] sign. This indicates that all the folders within the folder are displayed.

You can click [∨] sign to once again hide the sub-folders within the folder.



- To display the contents of a folder, click the name of the folder in left pane.
- Right pane displays the contents of the folder.
- When you finish using File Explorer, click (x) to close the window (or press Alt+F4).

Viewing Files and Folders

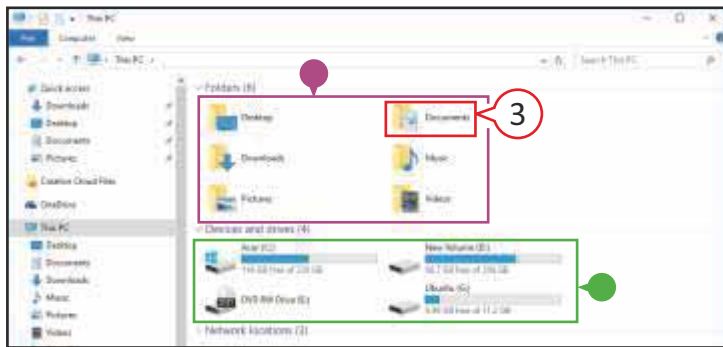
You can view the files you create as well as those you download or copy to your computer that get stored on your hard drive. There are some main folders in Windows 10 in which your files are saved, by default — **Documents**, **Pictures**, **Music**, **Videos**, and **Downloads**.

Whenever you create and save a document file, it gets stored in **Documents** folder. Whenever you save any picture, it gets stored in **Pictures** folder. Whenever you save any music file, it gets stored in **Music** folder. Whenever you save any video file, it gets stored in **Videos** folder. Whenever you download any file from the Internet, it gets stored in **Downloads** folder. If you want to open or work with these files, you need to view them first.

- Click on **Start** icon to open start menu (or press **Windows** key).
- Click on **File Explore** icon (or press **Windows** key + E). This PC window will appear.

- This area shows the main folders in Windows 10 in which your files are saved, by default.

- This area displays the hard drives, CD-ROM/DVD drive and removable drive available on your computer.



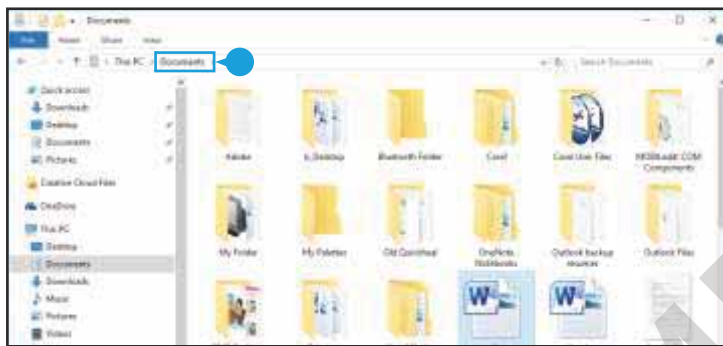
3. Double-click on any folder or drive to open it.

To view the contents of a CD-ROM/DVD drive, make sure you insert the CD-ROM/DVD disc into the drive before continuing.

Windows displays the contents of the folder including subfolders.

You can again double-click on the subfolder to view your file.

- The name of the folder, the contents of which you are currently viewing, always appears at the end of the **file path** in the **address bar**.



CHANGING THE VIEW OF FILES AND FOLDERS

You can view the files and folders in different ways and arrange them according to your choice. These are the views available in Windows 10:

Extra Large Icons or Large Icons view: The images on a folder icon are displayed in Thumbnail view. It enables users to identify the contents of the folder quickly.

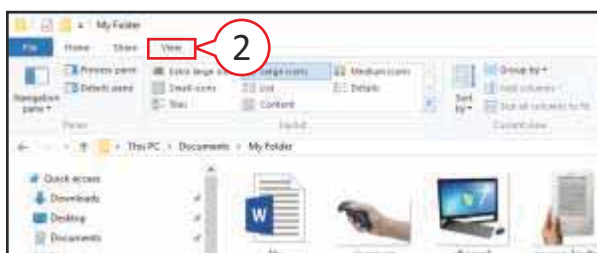
Medium Icons view: It displays your files and folders as small icons. The file name is displayed under the icon.

Small Icons view: It displays more information about the file.

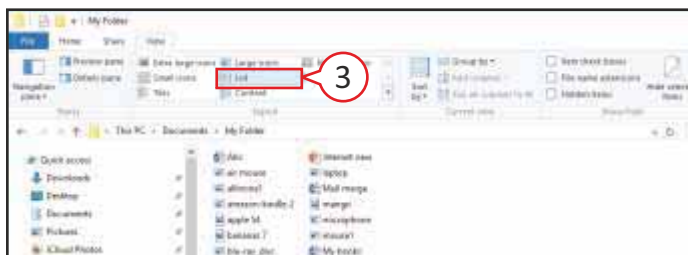
List view: It displays the contents as a list of files or folder names preceded by small icons.

Details view or Content view: It gives us detailed information about files including name, type, size and date.

Tile view: It displays the medium-sized icons.



1. Open the folder containing files.
- In the example, files are in Large Icons view.
2. Click the **View** tab.



3. Click on the **view** you want to set for files and folders.

Windows changes the file view.

*In this example, we have changed **Large Icons** view into **List** view.*

Selecting Files and Folders

While working with files and folders, you will often need to select them so that Windows 10 exactly knows the ones with which you want to work. Selected files appear **highlighted** on your screen. In this section, you will learn about selecting files. This technique is same for selecting folders.

SELECTING ONE FILE



1. Open the folder containing file.
2. Click on the file you want to select. The file gets **highlighted**.

SELECTING MULTIPLE FILES



1. Open the folder containing files.
2. Click on the file you want to select.
3. Press and hold down the **Ctrl** key as you click each file you want to select.

SELECTING A GROUP OF FILES



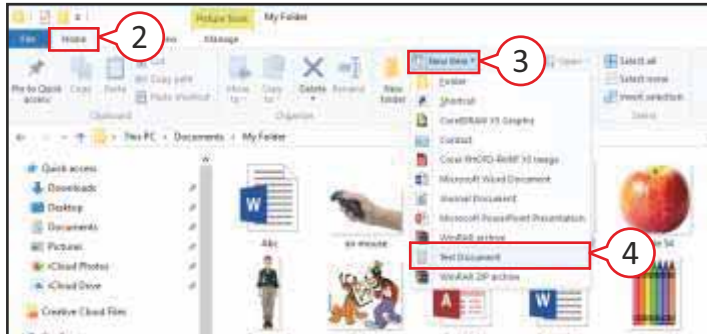
1. Open the folder containing files.
2. Position the mouse pointer slightly above on the left of the first file in the group.
3. Click and drag the mouse pointer down to the right until all the required files in the group are selected.

SELECTING ALL FILES

1. Open the folder containing files.
2. Click on **Home** tab.
3. Click on **Select All** (or press **Ctrl+A**). Windows selects all files in the folder.

Creating a New File/Folder

You can instantly create, name, and store a new file in the preferable location, without starting a program. Creating a new file without starting a program allows you to focus on the organization of your files.



1. Open the folder in which you want to create a file.
2. Click on **Home** tab.
3. Click on **New item**.
A menu will appear.
4. Click the type of file you want to create.

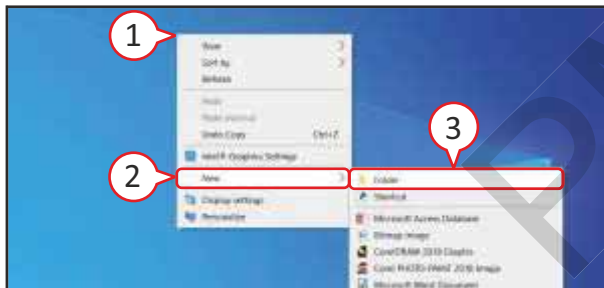
Note: If you click on Folder, Windows creates a new subfolder.

An icon for the new file appears in the folder.

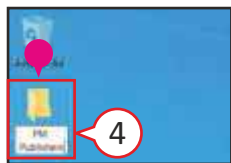
5. Type the name for the new file and press the **Enter** key.

CREATING A FOLDER ON THE DESKTOP

You can create your personal folder on the desktop to save your files in it.



1. Right-click the mouse on a blank area of your desktop.
A menu appears.
2. Click on **New**.
A sub-menu will appear.
3. Click on **Folder** (or press **Ctrl+Shift+N**).



- An **icon** for the new folder appears on the desktop.
4. Type the name you want for the new folder.
 5. Press **Enter** key.

RENAMING A FILE/FOLDER

You can rename a file to describe the contents of the file in a better way. Renaming a file can help you in locating the file easily in future. You can rename folders in the same way you rename files. **You should rename only those files which you have created.**

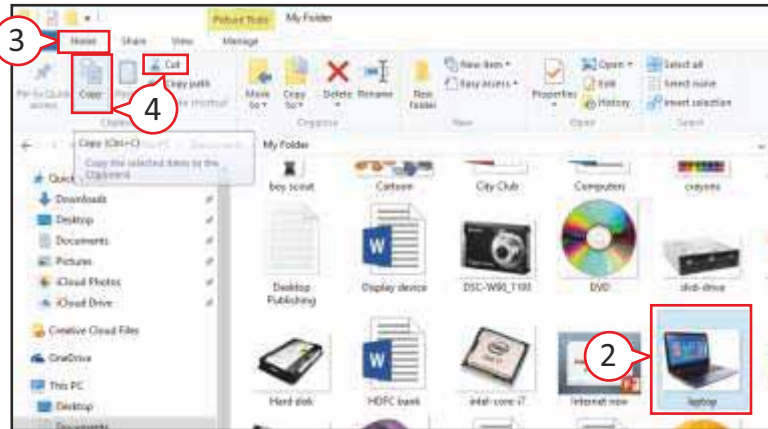
1. Open the folder that contains the file you want to rename.
2. Click the file you want to rename.
3. Press **F2** key on the keyboard.
4. Type a new name for the file and then press the **Enter** key.

A file name cannot contain characters like / \ ? " < > or !.

The new name appears under file icon.

COPYING OR MOVING A FILE/FOLDER

You can copy or move a file to an external drive or to a new folder on your computer. When you **copy** a file, the file remains in its original location and also appears in the new location. When you **move** a file, the file gets removed from its original location and appears in the new location.

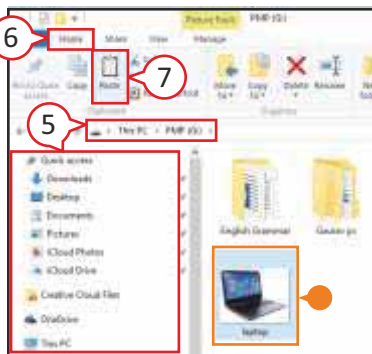


1. Open the folder containing the file you want to copy/move.
2. Select the file/folder.
3. Click on **Home** tab.
4. Click on **Copy** or **Cut**.



Update Your Knowledge

You can also use **Ctrl + C** for **copy** and **Ctrl + X** for **cut** as a keyboard shortcut.



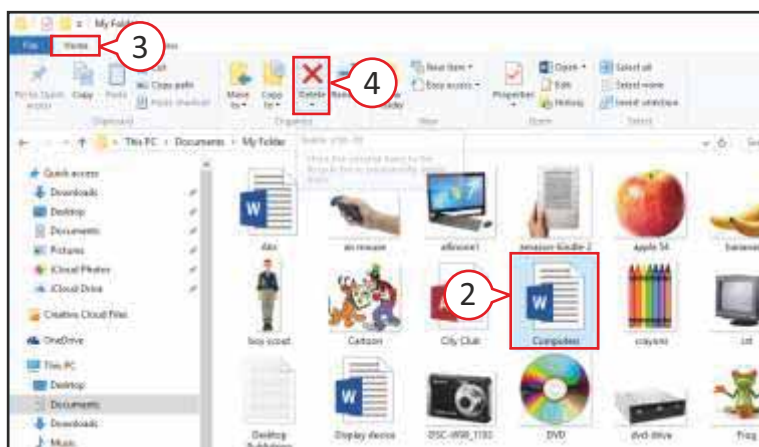
5. Navigate the folder where you want your file to be pasted.
6. Click on **Home** tab.
7. Click on **Paste** (or press **Ctrl+V**).

● *Windows copies or moves the file in the selected location.*
In this example, we have copied the file.

Deleting a File/Folder

You can delete a file/folder that is no longer required in the memory of the computer. Whenever you delete any file/folder, it goes into **Recycle Bin**. If you want to delete the file permanently, you have to delete it from Recycle Bin also.

Note: Make sure you delete only those documents that you have copied or created yourself. Do not delete any of the Windows 10 system files or any files associated with its programs.



1. Open the folder that contains the file you want to delete.
2. Click on the file you want to delete.

Note: If you want to remove more than one file, select all the files you want to delete.

3. Click on **Home** tab.
4. Click on **Delete**.



Self-Evaluation

CHECKLIST

After reading the chapter, I know these points:

- I know that the work done on a computer is stored in the form of a file.
- I know that group of files stored under a common name is called a folder.
- I know that File Explorer is vertically divided into two panes, i.e. left and right panes.
- I know that 'copy' means placing the same file/folder to a new location without removing it from its original location.
- I know that 'move' means removing the file/folder from its original location and placing it to a new location.
- I fully know that the deleted files move into the Recycle Bin.

Agree

Disagree

☐
☐
☐
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☐
☐
☐
☐
☐
☐
☐


Exercises

A. Tick [✓] the correct answer.

1. The document we create is called a
 a. folder ☐ b. file ☐ c. text ☐
2. A group of files stored under a common name is called a
 a. file ☐ b. cupboard ☐ c. folder ☐
3. Selected files appear on our screen.
 a. highlighted ☐ b. flashing ☐ c. colorful ☐
4. Changing the name of a file/folder is called
 a. renaming ☐ b. copying ☐ c. moving ☐
5. Deleted file goes into
 a. Music Folder ☐ b. Recycle Bin ☐ c. Desktop ☐

B. Write 'T' for True and 'F' for False statements.

1. A file is a collection of data and information.
2. A file and a folder are represented with the same icon.
3. Copying a file removes it from its original location.
4. File Explorer is used to view and organize files and folders.
5. A file can have any number of folders in it.

C. Fill in the blanks.

1. A computer represents files and folders with an
2. A folder inside another folder is called
3. File Explorer is divided into and panes.
4. You can press keys to select all the files of a folder.

D. Differentiate between the following.

- | | |
|-----------------|-------------|
| 1. File | Folder |
| | |
| | |
| | |
| 2. Copying File | Moving File |
| | |
| | |
| | |

E. Answer the following questions.

1. Write the names of some main folders in Windows 10.
.....
.....
.....
2. What is the role of File Explorer in Windows 10?
.....
.....
.....
3. How do we rename a file/folder?
.....
.....
.....
4. What is the use of Recycle Bin?
.....
.....
.....

F. Application-based Question

Kamal has created files of different subjects and stored them on the desktop. By mistake, one of the files has been deleted. Tell him the way to restore his deleted file on the desktop.

.....

Activity Section

Activity Label

Label the following parts of folder window.



Lab Activity

Create your own folder and sub-folders to manage your files.

- Create a folder on the desktop and name it 'Project'.
- Open it by double-clicking on it.
- Create a sub-folder within the Project folder and name it 'Document'.
- Double-click the Document folder and the newly created folder will open in a window. This folder does not contain any other file or sub-folder in it.
- Now in this blank window, create two new sub-folders and name them as 'Science' and 'English'.
- To go back to the parent folder window, click on **Back** button. You will go to the parent folder 'Project'.
- Now, close the Project folder.

Skill Formation

- This activity enhances
- the organizational
- skills of the students.

Group Discussion

Divide the students into two groups and discuss the topic, 'Organizing our Files and Folders in the Computer is a Good Practice'.

Online Link

To learn more about Windows file management, visit the website:

<https://edu.gcfglobal.org/en/windowsbasics/working-with-files/1/>

3

Word – Table and Mail Merge

OBJECTIVES

After completing this chapter, you will be able to:

- Understand various features of Word.
- Create document using various features.
- Insert table and text in it.
- Use Mail Merge to produce personalized document.

Hello Friends! In the previous class, you have learnt about Microsoft Word. Now, we will learn some more features provided in Word.



Microsoft Word

Microsoft Word or **Word** is a full-featured **word processing program**. It allows users to create and edit documents, containing mostly text and sometimes graphics.

A major advantage of using Word is that users can easily change what they have typed. You can also send a copy of your Word document to various e-mail addresses when connected to the Internet. Millions of people use Word every day to create documents such as letters, memos, reports, fax, cover-sheets, mailing labels, and newsletters.

FEATURES OF WORD

Spelling and Grammar Checker: You can use the spelling and grammar checker to spell check or proof-read documents.

Thesaurus: With Thesaurus, you can look up for **synonyms** (words with the same meaning) for words in a document.

Columns: Most word processing software programs can arrange text in two or more columns like in **newspapers** and **magazines**. The text from the bottom of one column automatically flows to the top of the next column.

Tables: Tables are a way of organizing information into **rows** and **columns**. You can easily re-arrange rows and columns, change column widths, or format the contents of a table.

Mail Merge: It is used to create personalized letters, mailing labels, and envelopes for each person on your mailing list.

AutoCorrect: This feature corrects common spelling errors. For example, if you type the word 'adn', the word processing software automatically changes it to the correct word 'and'. AutoCorrect also corrects errors in capitalization. For example, it capitalizes the names of days, the first letter in a sentence, etc.

AutoFormat: It automatically creates symbols, fractions, and ordinal numbers. For example, when you type :), it changes to a **smiling face** symbol. The fraction $\frac{1}{2}$ is created when you type 1/2; and the ordinal 2nd is created when you type 2nd.

Tracking Changes: If multiple users work with a document, you can instruct the word processing software to highlight or color-code the changes made by various users. In this way, you can easily see what changes have been made to the document.

Project: Letter Regarding Annual Function Award Declaration



Start

Subject Integration

English

This integration would make students learn writing a letter using Mail Merge feature of Word.

March 10, 2021

This is to bring to your kind notice that on 30th January 2021, Annual Function of **PM Public School (2020-21)** was organized in the school premises. **Mr. Rajesh Bajaj** was the honorable Chief Guest. The function commenced by lighting of the lamp by the School Principal **Ms. Renu Khare**.

At the end of the function, **Award Ceremony** was conducted to recognize the efforts of the students. The awards were conferred by the Chief Guest and the Principal.

Following table shows the names of winners in various categories.

PM PUBLIC SCHOOL

List of Awardees				
CATEGORY	STUDENT NAME	CLASS	SECTION	COMPETITION
Best Athlete	Ankur Srivastava	8 th C		Annual Sports
Best Dancer	Kanak Chawla	10 th A		Inter-school Dancing
Best Singer	Pooja Sharma	5 th B		Inter-school Singing
Best Orator	Anchal Melhotra	9 th A		Inter-school Debate

Merge the above document to be shared with the parents of the winners.

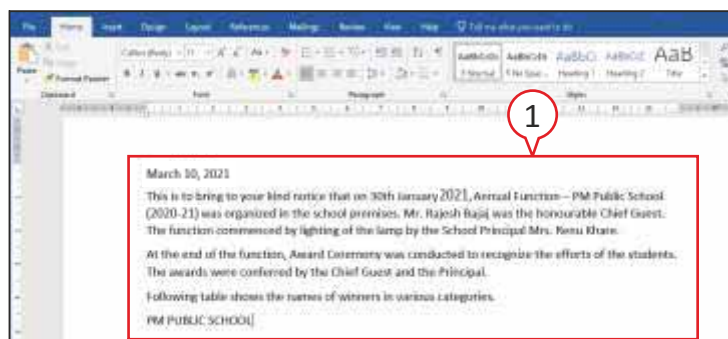
TITLE	FIRST NAME	LAST NAME	ADDRESS	CITY	HOME PHONE
Mr.	Kamal	Srivastava	B-17/T1, Sector 2	Noida	24567789
Mrs.	Shalini	Chawla	40-J, Mayur Vihar	Delhi	22834556
Mr.	Rahul	Sharma	109, Sector 8	Ghaziabad	23467889
Mrs.	Manya	Melhotra	A-1/3, Sector 19	Noida	34566778

This project deals with creation of letter and table and performing Mail Merge.

Creating a Document

ENTERING TEXT

With the help of a keyboard, enter text into a document.



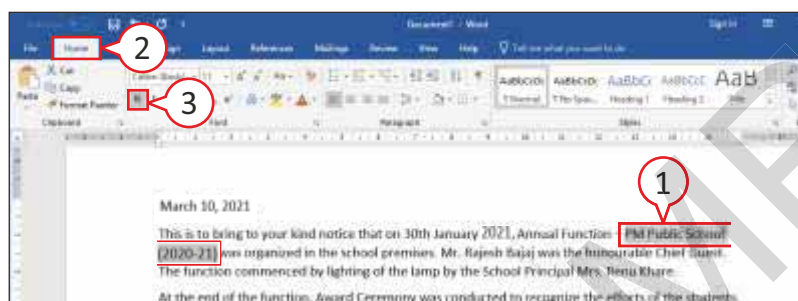
The text you type will appear where the **insertion point** flashes on your screen.

1. Type the text for your document.

The text appears to the left of the insertion point as you type.

MAKING THE TEXT BOLD

You can make your text bold to emphasize information in your document.



1. Select the text you want to make bold.

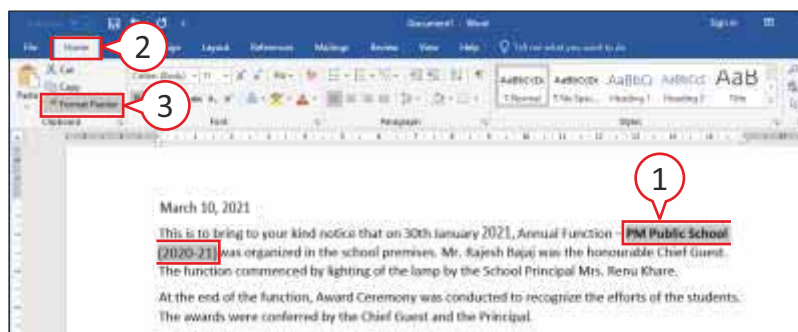
2. Click on **Home** tab.

3. Click on **Bold** [**B**] button (or press **Ctrl+B**).

The text you selected appears in bold format.


FORMAT PAINTER

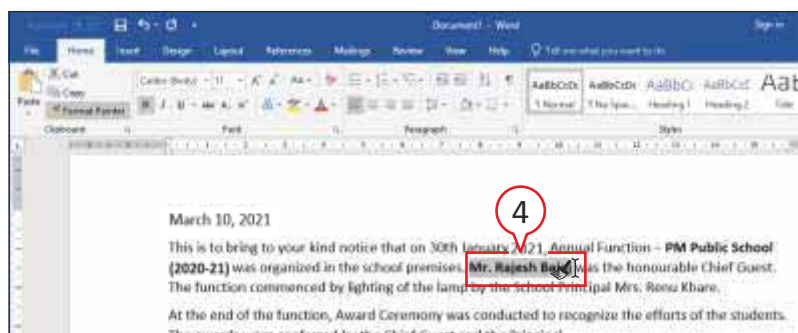
Format Painter tool is used to copy the formatting that you apply to the text in one portion to another portion of your document. This will save your time and give the text a consistent appearance.




1. Select the text that displays the formatting (Bold) you want to copy.

2. Click on **Home** tab.

3. Click on **Format Painter** () to copy the formatting of the text.

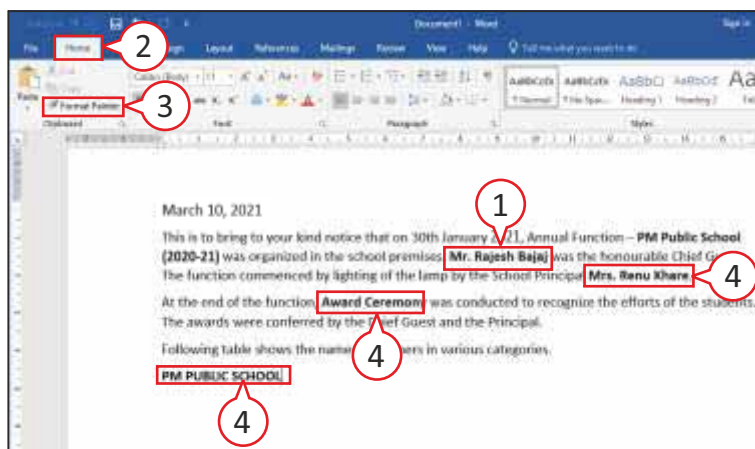



The **mouse pointer** changes to () when over your document.

4. Select the text you want to display with the same formatting.

The text you selected displays the formatting.

Copy Formatting to Several Areas

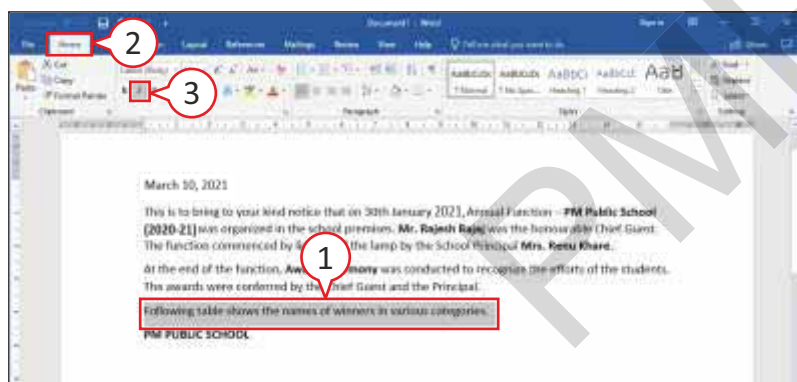



1. Select the text that displays the formatting you want to copy.
2. Click on **Home** tab.
3. Double-click on **Format Painter** tool [] to copy the formatting of the text.
4. Select each area of the text you want to display with the same formatting.

5. When you finish selecting all the text you want to display with the formatting, press **Esc** key.

MAKING THE TEXT ITALIC

You can make your text slant to make it stand apart from the rest of the text in your document.

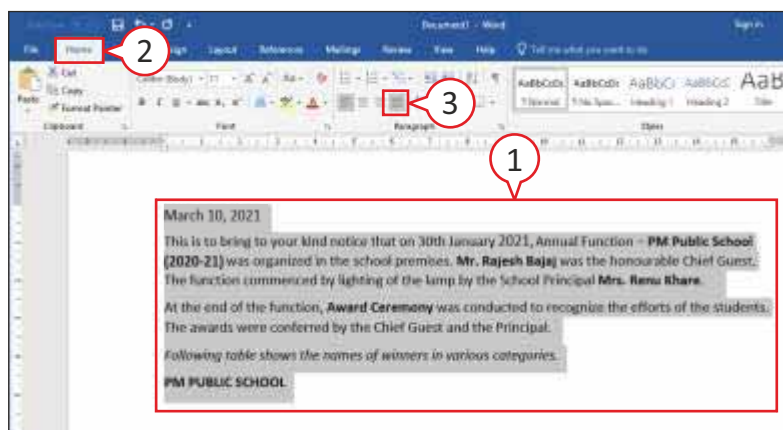



1. Select the text you want to make italic.
2. Click on **Home** tab.
3. Click on **Italic** [] button (or press **Ctrl+I**).

The text you selected appears in italics.

CHANGING ALIGNMENT OF TEXT TO JUSTIFY

You can align the text to determine the appearance and orientation of the edges of the paragraph. By default, Word aligns the text to left.

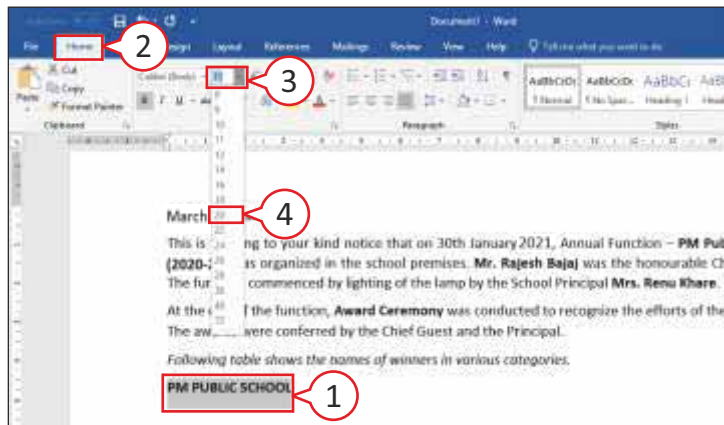


1. Select the text that you want to format.
2. Click on **Home** tab.
3. Click on **Justify** () to justify text between the left and right margins (or press **Ctrl+J**).

The text is displayed with the new alignment.

CHANGING THE FONT SIZE

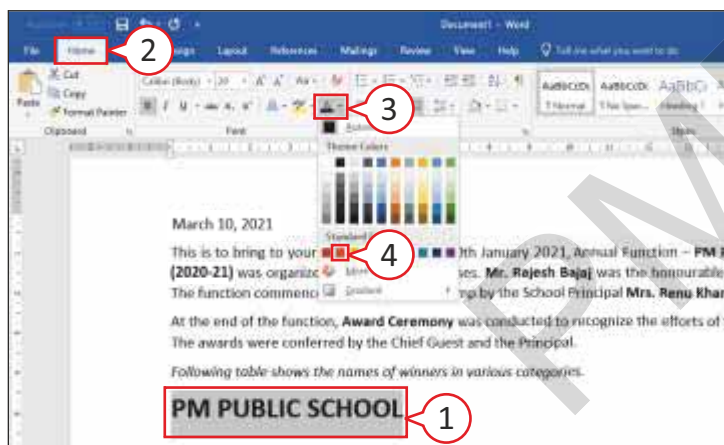
Font size controls the overall size of the font, generally measured in points. You can increase or decrease the size of the text in your document.



1. Select the text you want to change to a different font.
 2. Click on **Home** tab.
 3. Click on the down arrow of **Font Size**.
 4. Click on the size you want to use.
- The text you selected appears in the new size.

CHANGING THE FONT COLOR

Font color of the text can be changed to draw attention towards headings or important information in your document.



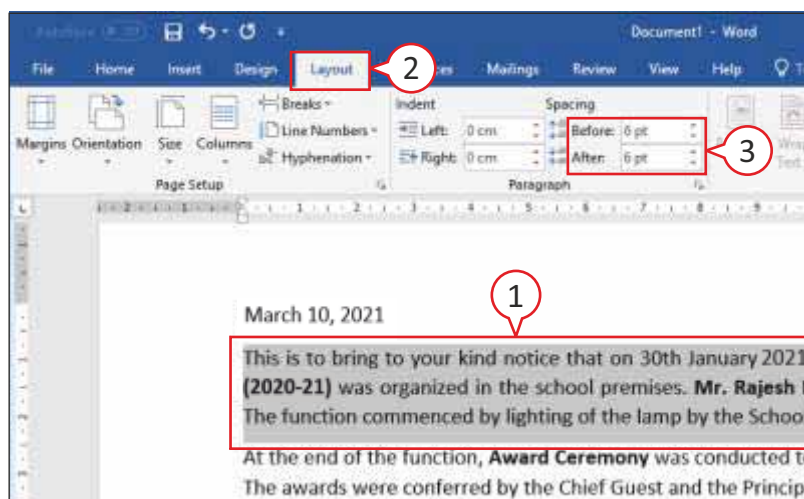
1. Select the text you want to color.
2. Click on **Home** tab.
3. Click on the down arrow of **Font Color**.
4. Click on any color.

Word applies color to the selected text.

In this example, we have applied red color to the text.

CHANGING PARAGRAPH SPACING

Paragraph spacing is the space before and after a paragraph in the document. You can change the amount of space between paragraphs of text.



1. Click anywhere in the paragraph or select it to set spacing before and after it.
2. Click on **Layout** tab.
3. Click on arrows to increase or decrease the space **Before** and space **After** the selected paragraph.

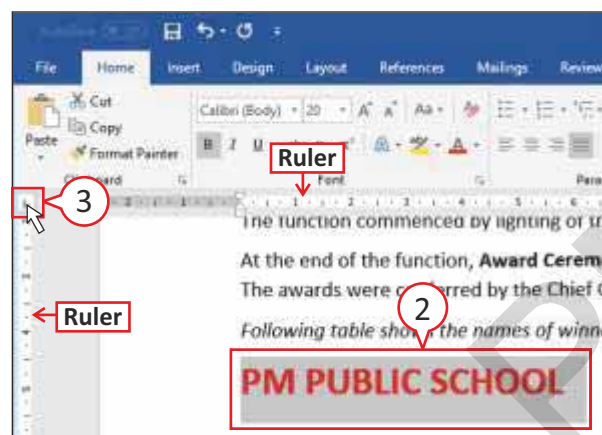
Word applies the spacing before and after the selected paragraph.

CHANGING TAB SETTING

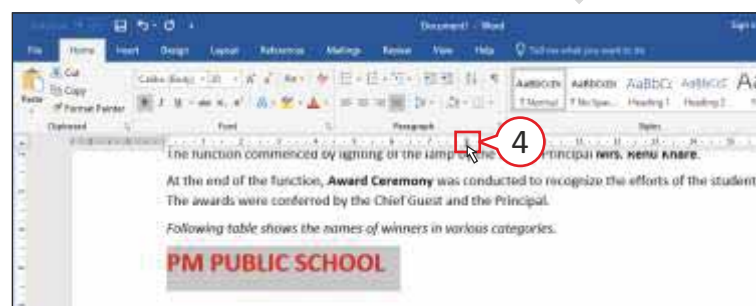
Tab is short for **tabulation** and is used for controlling the position of the text exactly where you would like it in the document or to line up information in your document. By default, Word creates tab stops every **0.5 inch** across the page and left aligns the text on each tab stop. The five different types of tabs are:

- **Left Tab (Normal):** It aligns the text on the left of the tab stop. The text flows to the right.
- **Right Tab:** It aligns the text on the right of the tab stop. The text flows to the left.
- **Center Tab:** It aligns the text at the middle of the tab stop.
- **Decimal Tab:** The decimal tab is used to align numbers and text with a period.
- **Bar Tab:** It creates a vertical line at the designated tab stop.

Adding a Tab



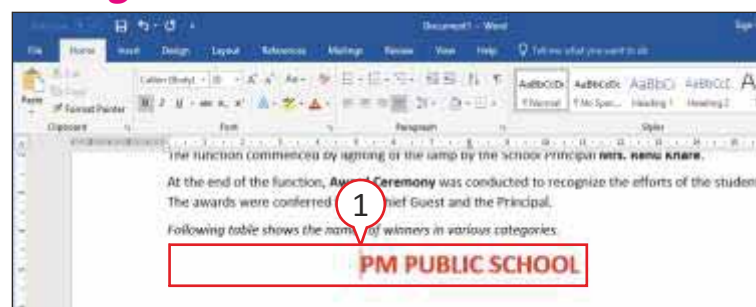
1. In the **View** tab, click on **Ruler** checkbox to display the ruler (not shown).
2. Select the text where you want new tab.
3. Click on this area until the type of tab you want to add appears.
(L) Left tab (+) Center tab
(J) Right tab (±) Decimal tab
(|) Bar tab



4. Click on bottom half of the ruler where you want to add the tab.
The new tab appears on the ruler.
*In this example, we have selected **Center** tab.*

You can remove the tab by dragging the tab off the ruler.

Using a Tab



1. Click on the beginning of the line you want to move to the tab. Then, press the **Tab** key from the keyboard.

The insertion point and text that follows move to the tab you set.

Inserting Table

In Word, tables are a useful tool. They are extremely flexible, easy to create and manipulate. They provide a way of organizing information into horizontal **rows** and vertical **columns**, which intersect to form **cells**.

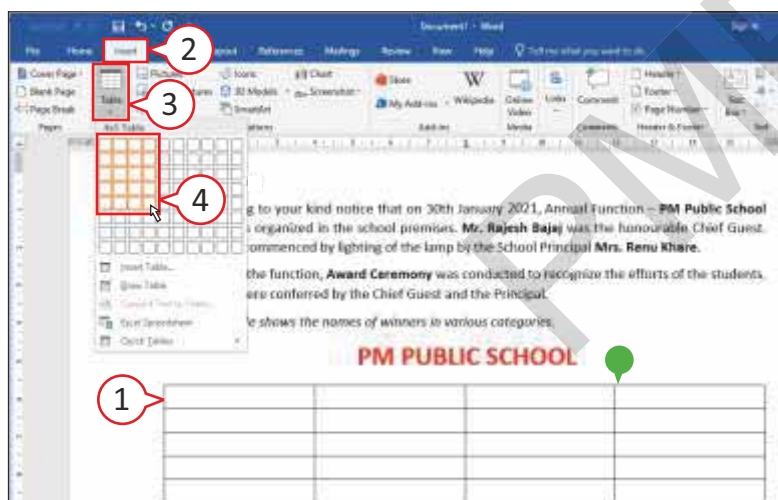
You can insert all types of data in cells, including text and graphics. Tables can be customized and are useful for various tasks, such as presenting textual information and numerical data.

CREATING A TABLE

You can create table in your document by three different ways:

- Firstly, you can create a **blank** table and type data in it.
- Secondly, you can insert a **preset** table in the document and replace the text of the preset table with your own text.
- Thirdly, you can draw a **customized** table by controlling how the rows and columns appear in it.

Creating a Blank Table

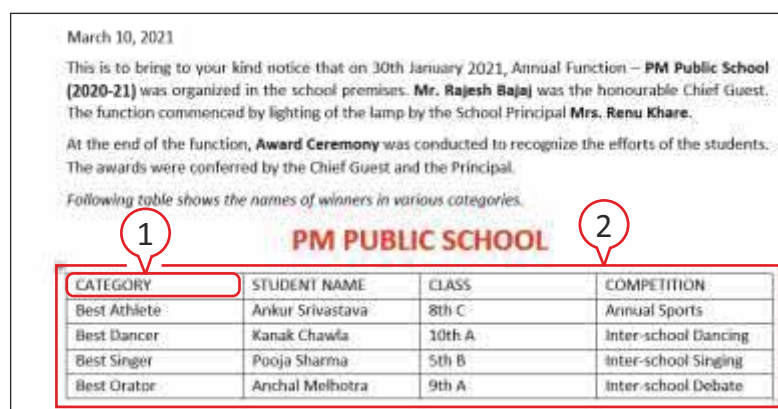


1. Click in the document where you want to insert a table.
 2. Click on **Insert** tab.
 3. Click on **Table** button.
 4. Drag the mouse pointer until you highlight the number of rows and columns, you want the table to contain.
- Word shows the preview of the table as you drag over the cells.

Word adds table to the document. **Table Tools** option appears on the Ribbon.

ENTERING TEXT IN TABLE

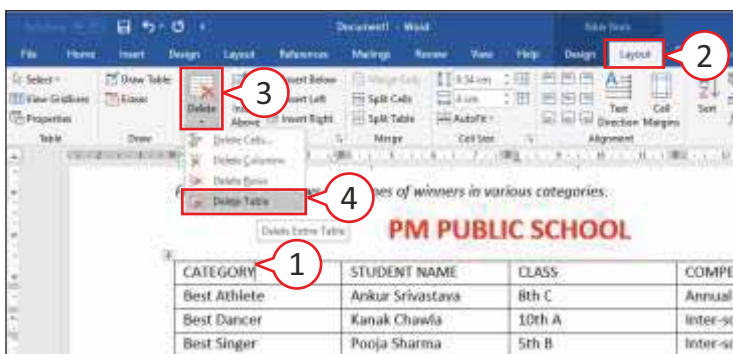
You can enter the text in the table as you enter it in the document.



1. Click on the cell where you want to enter text. Then, type the text.
You can press the Tab key to move the insertion point to the next cell.
2. Repeat step 1 until you finish entering all the text inside the table.

DELETING A TABLE

You can delete your table whenever you want.

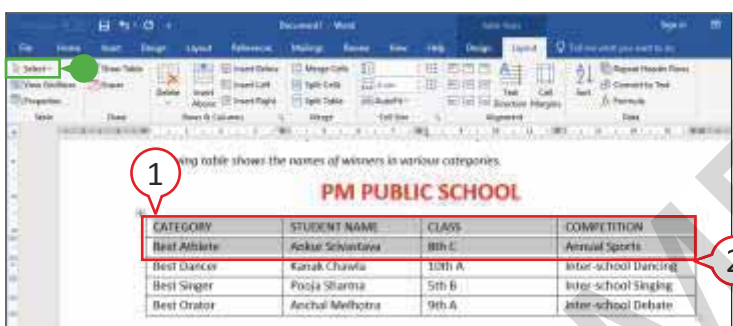


1. Click in the table to delete it.
2. Click on **Layout** tab.
3. Click on **Delete**.
4. Click on **Delete Table**.

The table and its contents disappear from your document.

SELECTING CELLS IN TABLE

You can select table cells, rows, and columns in a table to perform editing tasks, and apply formatting to all the selected areas of the table.



1. Click and drag the mouse over cells that you want to select.
 2. Release the mouse button to select cells.
- In the **Layout** tab, you can also use **Select** tool to select any part of your table.

To Select a Single Cell



1. **Triple-click** the cell to select everything in it.

To Select an Entire Row



1. Take your mouse near the left border of row and click on it.

The entire row will be selected.

To Select an Entire Column



1. Take your mouse near the top border of column and click on it.

The entire column will be selected.

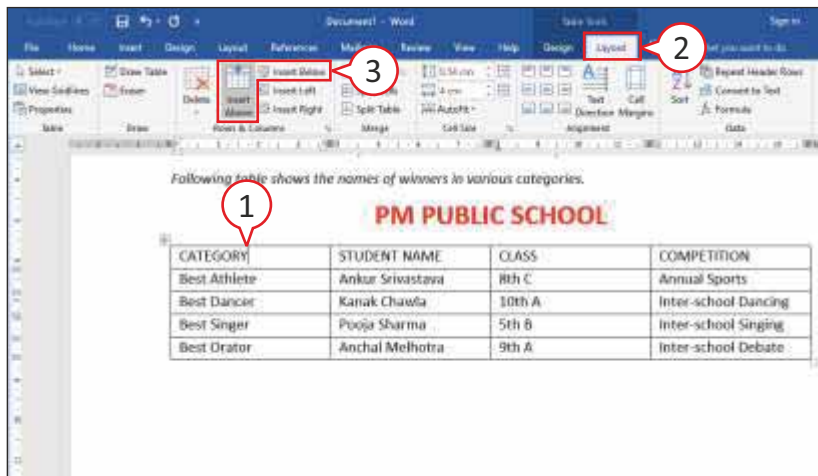


Update Your Knowledge

- Tables can be customized and are useful for various tasks, such as presenting textual information and numerical data. You can create a blank table, and apply a variety of styles and formats to existing tables.
- You can press **Alt, N, T, I** to insert table and **Alt, N, T, D** to draw table.

ADDING ROWS IN A TABLE

You can add rows in your table to insert additional information.



1. Click in the row where you want to add another row.

If you select more than one row, Word duplicates the number when you activate Insert command.

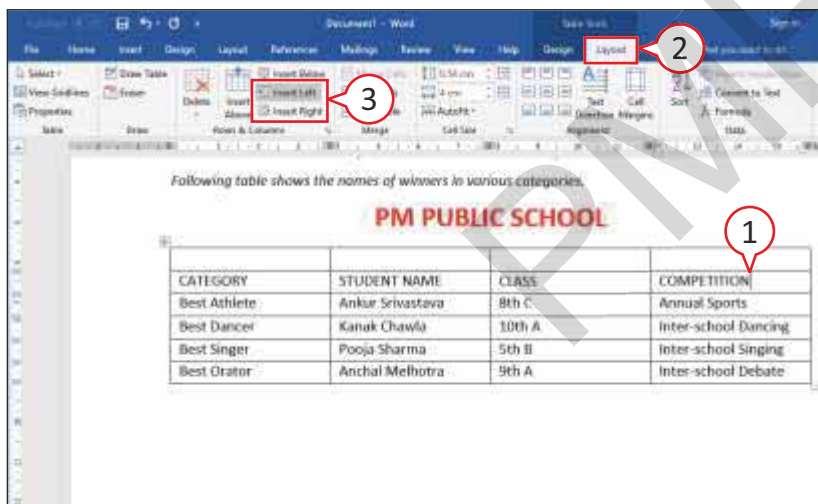
2. Click on **Layout** tab.
3. You can click **Insert Above** or **Insert Below** option to add new rows.

Word adds a row to the table.

In this example, we have inserted a row **above** the selected row.

ADDING COLUMNS IN A TABLE

You can add columns in your table to insert additional information.



1. Click in the column where you want to add another column.

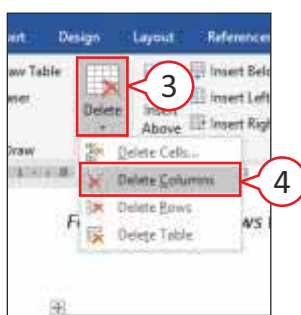
If you select more than one column, Word duplicates the number when you activate Insert command.

2. Click on **Layout** tab.
3. You can click **Insert Left** or **Insert Right** option to add new column.

Word adds a column to the table.

DELETING A ROW OR A COLUMN IN A TABLE

You can delete a row or column you no longer need in your table.

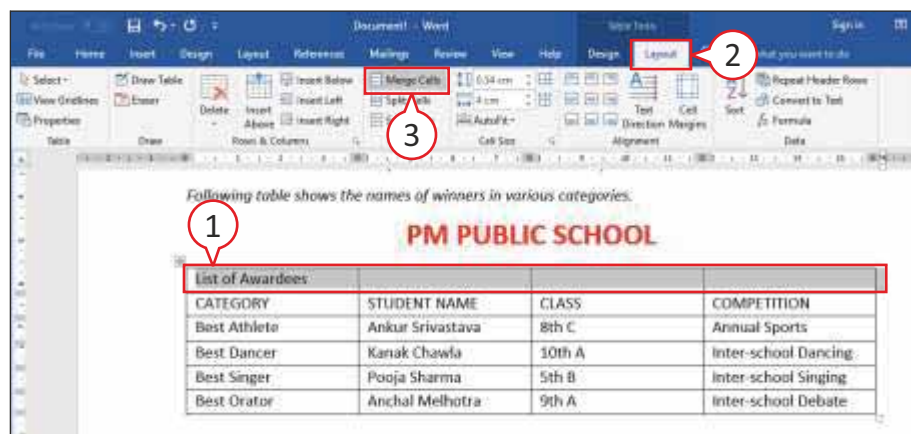


1. Select a row or column you want to delete (not shown).
2. Click on **Layout** tab (not shown).
3. Click on **Delete** button.
4. Click on **Delete Columns** to delete the column or click on **Delete Rows** to delete the row.

Word removes the column or row and the text it contained.

COMBINING CELLS IN A TABLE

You can combine two or more cells in your table to create one large cell. Combining cells is useful when you want to display a title across the top or the down side of your table.

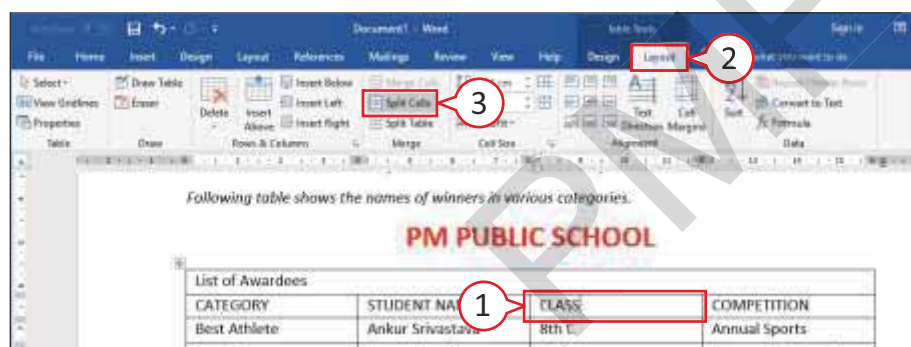


1. Select the cells that you want to merge.
2. Click on **Layout** tab.
3. Click on **Merge Cells** option.

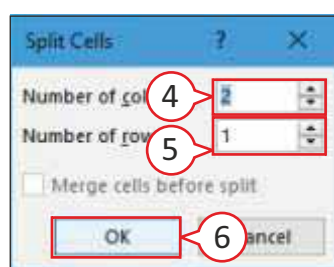
The cells will combine together to create one large cell.

SPLITTING CELL IN A TABLE

You can split one cell into two or more cells in your table to create more than one section. You can even split cells into columns or rows.

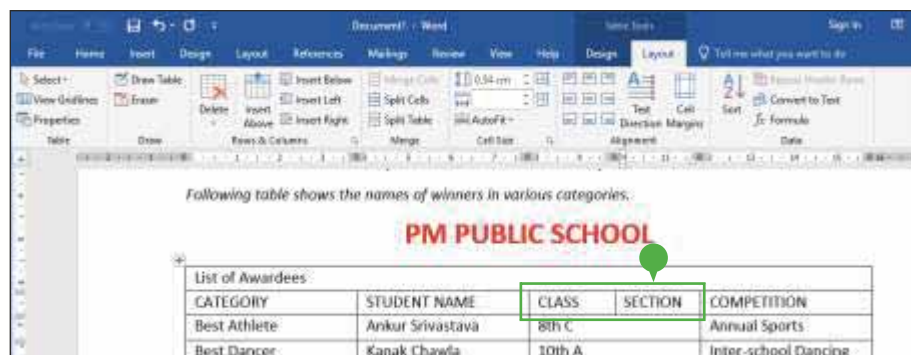


1. Click inside or select the cell that you want to split.
2. Click on **Layout** tab.
3. Click on **Split Cells** option.



Split Cells dialog box appears.

4. To split the cell into columns, double-click on this area and type the number of columns you want to split the cell into.
5. To split the cell into rows, double-click on this area and type the number of rows you want to split the cell into.
6. Click on **OK** to split the cell.



- The cell splits into desired number of cells.

You can now enter text in these split-up cells.

FORMATTING A TABLE

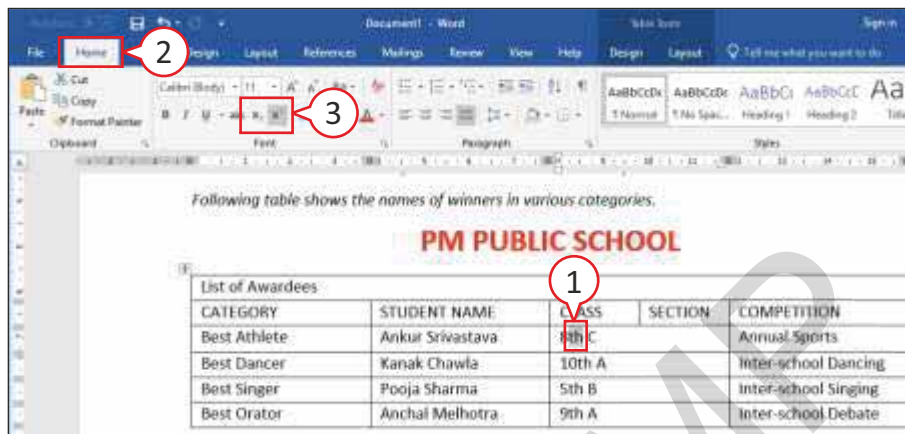
You can format the table to enhance its look and make it attractive.

Superscript or Subscript Text

You can assign superscript or subscript notation to any text to make it appear above or below the regular line of text.

Superscript will make the text appear **above** the regular line of text. **Subscript** will make the text appear **below** the regular line of text.

Superscripting and subscripting are often used in Mathematical and chemical formulas.



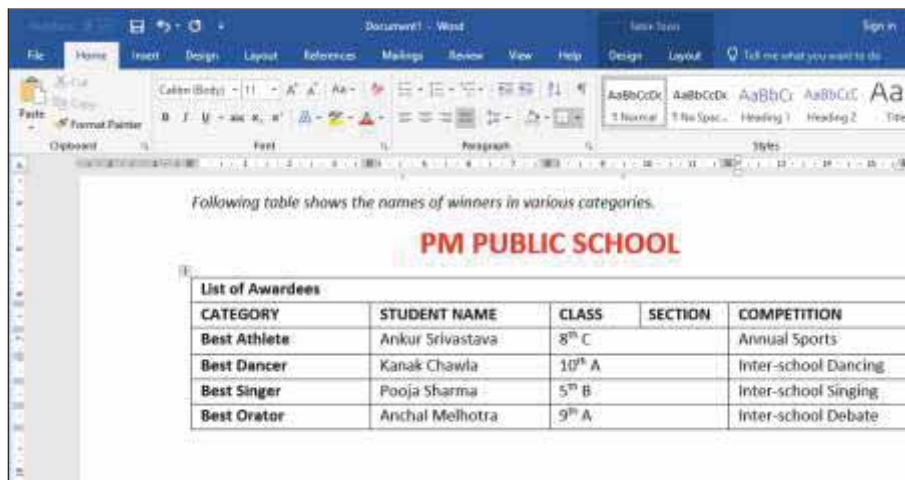
1. Type and select the text that you want to superscript or subscript.
2. Click the **Home** tab.
3. Click the **Superscript** icon (x^2) (or press **Ctrl Shift and +**) or the **Subscript** icon (x_2) (or press **Ctrl+=**).

CLASS	SECTION
8 th C	
10 th A	
5 th B	
9 th A	

- In this example, Word superscripts the selected text.

Bold the Text

You can make your text in cells darker to emphasize information in the table.

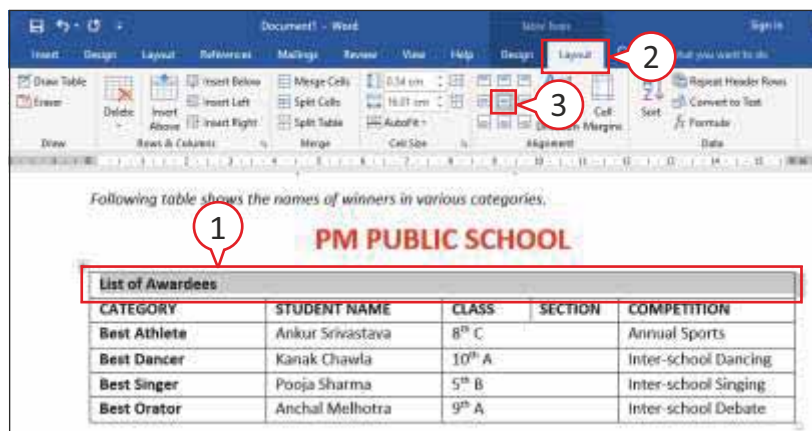


By using **Bold** command and **Format Painter** tool, you can bold the selected text in the table as per the requirement.

Note: You have already learnt about Bold and Format Painter in this chapter.

Aligning the Text in Cell

You can enhance the appearance of your table by changing the position of the text in cells. Word table alignment options include the left, right, center, and justify alignments, as well as vertical alignments, such as bottom center and top right. By default, Word aligns your table text to the left inside each cell.



1. Select the cells that you want to align.
2. Click on **Layout** tab.
3. Click on an alignment from the **Alignment** group.

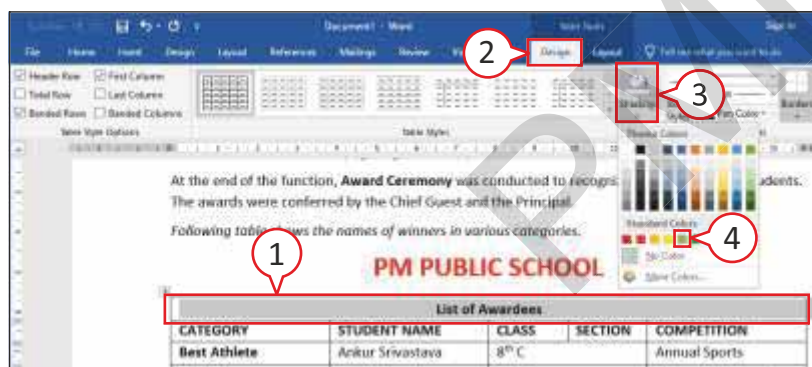
Word will apply the alignment.

This example **centers** the heading in the cell.

You can also center align the data under the split column.

Add Shading to Cell

You can add shading to cells to make them stand out.



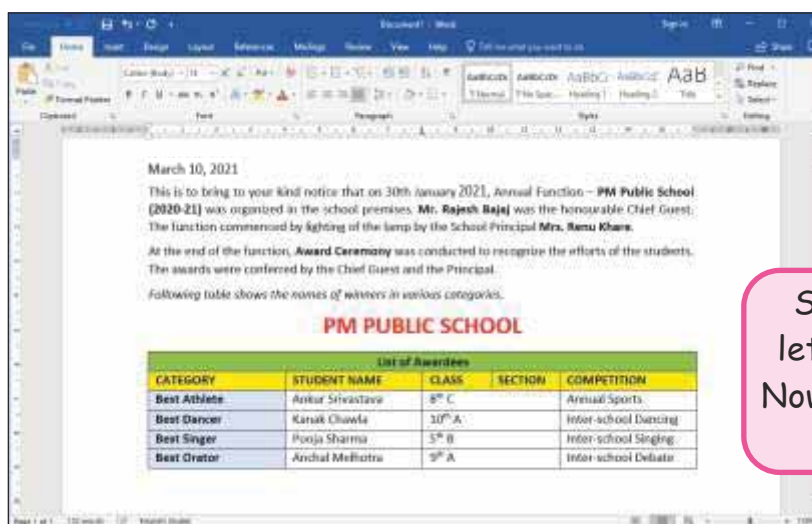
1. Select the cell or cells to which you want to add shading.
2. Click the **Design** tab.
3. Click on **Shading**.

Theme colors palette appears.

4. Click on a color.

Word applies the shading to the selected cell.

You can apply the shading to other cells as per your requirement.



So Friends, your letter is complete. Now it is time to do Mail Merge.



Although the steps in this project focus only on shading in Design tab, you can also use these steps to practice other table design formats to make more appealing documents.

You have created the letter that includes a table. Now, we will send the same letter to various persons through Mail Merge.

Using Mail Merge

You can use the **Mail Merge** feature to produce a personalized document such as an announcement or a greeting card for each person on your mailing list.

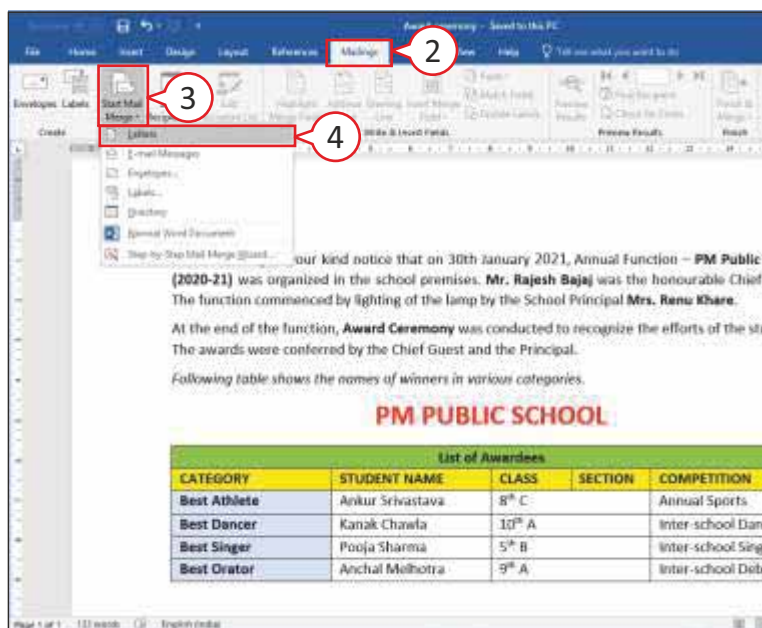
Mail Merge is a process of a **combining** or **merging** the main document with the data source. The **data source** contains the name and address of each recipient to whom you want to send the document.

Suppose, you want to send a circular to 100 different students for an event in the school. With the Mail Merge feature, you can write one circular for all the students; only the student's name and address will be different in each circular. The Word merges each student's information with the circular that you created. This process is very simple and much faster than its manual alternative.

Benefits of Mail Merge

- It is easy to make a change to a single letter and for that change to happen in every letter, for example, change the date.
- Once the merge has been set up, any number of letters can be customized and sent very quickly.
- It becomes much easier to proof-read just one letter rather than reading hundreds of individual letters.
- You can save the main document and re-use it in the future.

CREATING MAIL MERGE

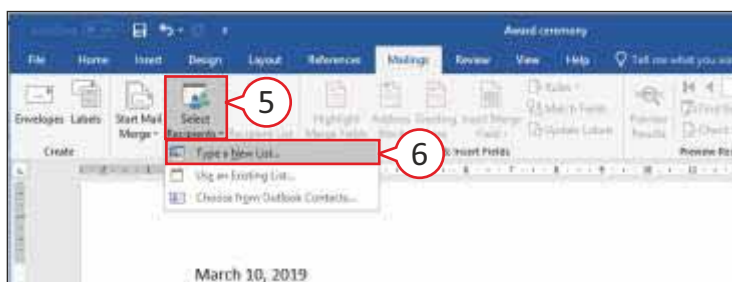


1. Open the Word document that you want to use as the letter.

The information of the letter should not change from letter to letter.

2. Click the **Mailings** tab.
3. Click on **Start Mail Merge** option.
4. Click on **Letters**.

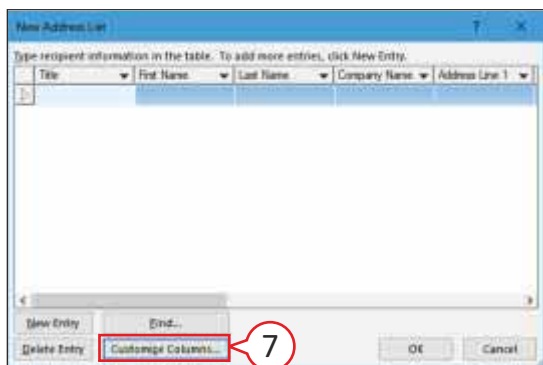
Nothing happens on-screen, but Word sets up for a mail merge.



5. Click on **Select Recipients**.

6. Click on the option to identify the type of recipient list you plan to use.

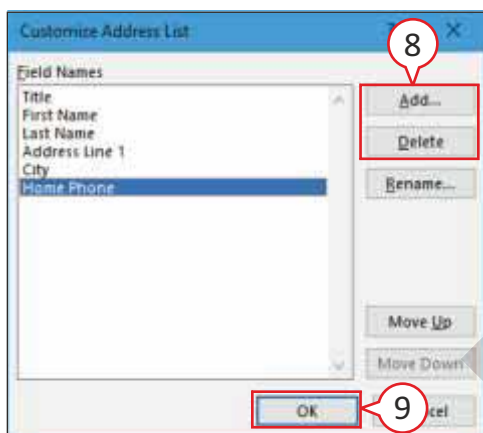
*This example uses a **New List**.*



The **New Address List** dialog box appears, displaying columns where you can enter the information.

7. Click on **Customize Columns**.

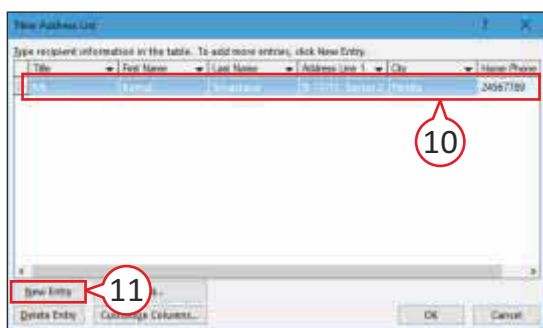
The **Customize Address List** dialog box appears.



8. Click on **Add** button to add a new column or click on **Delete** button to delete an unwanted column.

In this example, we have deleted some of the unwanted fields.

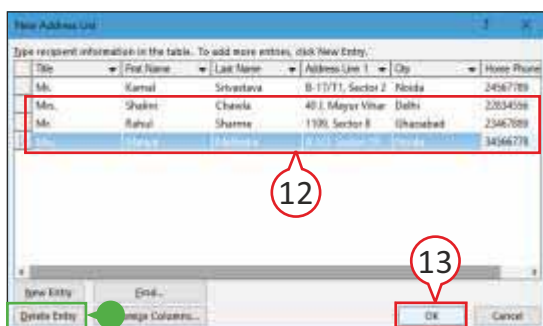
9. Click on **OK**.



The **New Address List** dialog box appears again.

10. Click on each area and type the appropriate information for each person.

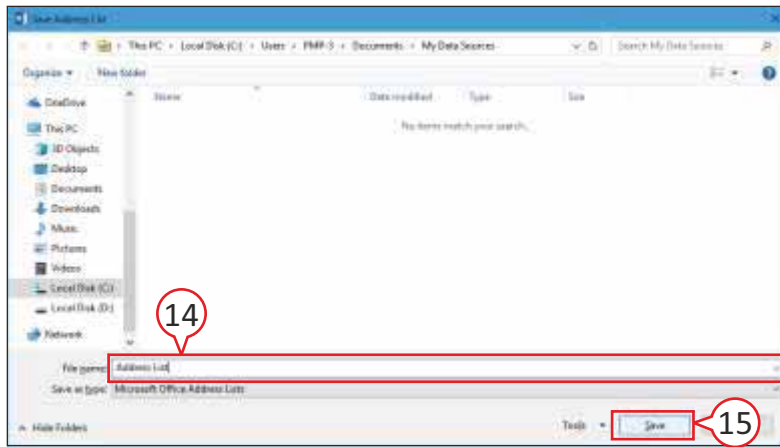
11. To enter the information for another person, click on **New Entry**.



12. Repeat steps 10 and 11 for each person to be added on your mailing list.

● To delete an entry, click on the entry and then click on **Delete Entry**.

13. When you finish creating your mailing list, click on **OK**.

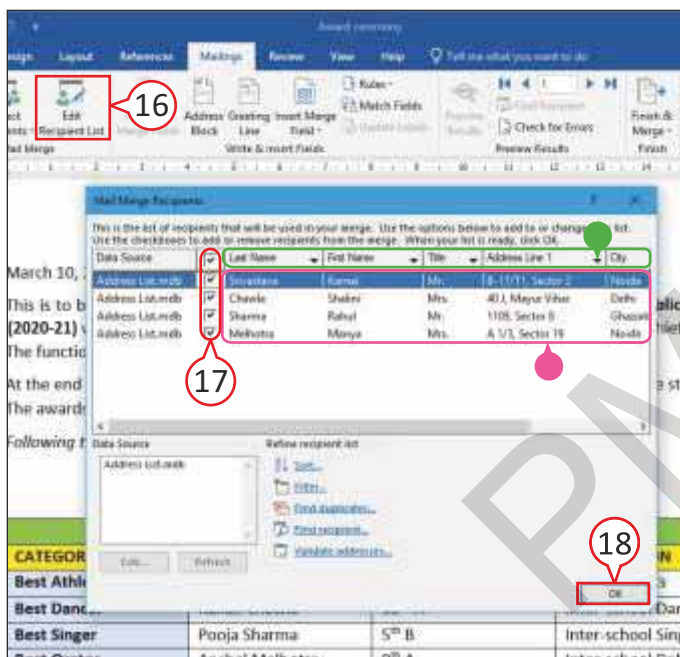


The **Save Address List** dialog box appears.

14. Type a name (Address List) for the file that will store your mailing list.

15. Click on **Save** button to save the file.

Now, you can select specific recipients from the mailing list to send the letter.



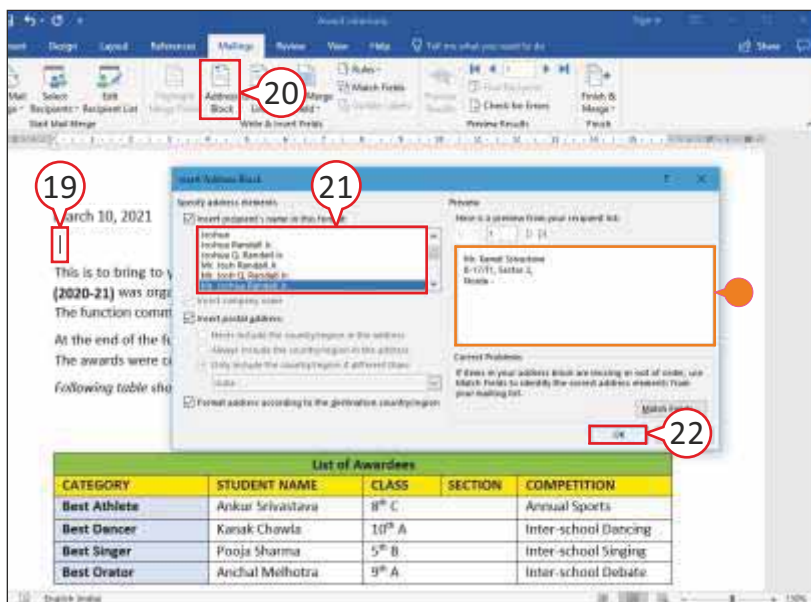
16. Click on **Edit Recipient List**.

The **Mail Merge Recipients** window appears.

- This area shows all the people on your mailing list.
- To sort the list, click on the down arrow of heading of the column you want to use.

17. A **check mark** besides a person's name indicates that Word will create a personalized letter for the person. To add or remove a check mark, click on box besides the person's name.

18. Click on **OK**.



19. Click on the location where you want the address to appear in the letter.

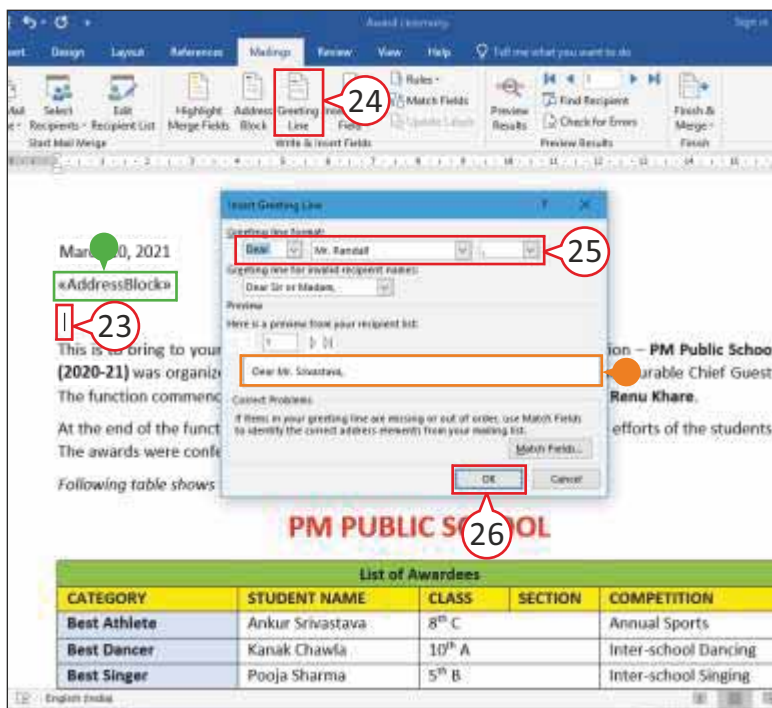
20. Click on **Address Block**.

The **Insert Address Block** dialog box appears.

21. Click on a format for each recipient's name.

- You can preview the address format here.

22. Click on **OK**.



- A merge field, representing the address block, appears in the letter.

23. Click on the location where you want the greeting to appear.

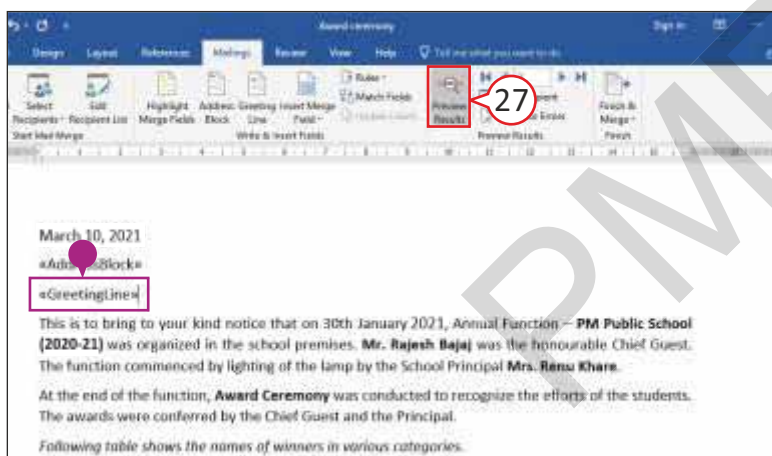
24. Click on **Greeting Line**.

The **Insert Greeting Line** dialog box appears.

25. Click on these areas to specify the greeting format.

- A preview of the greeting appears here.

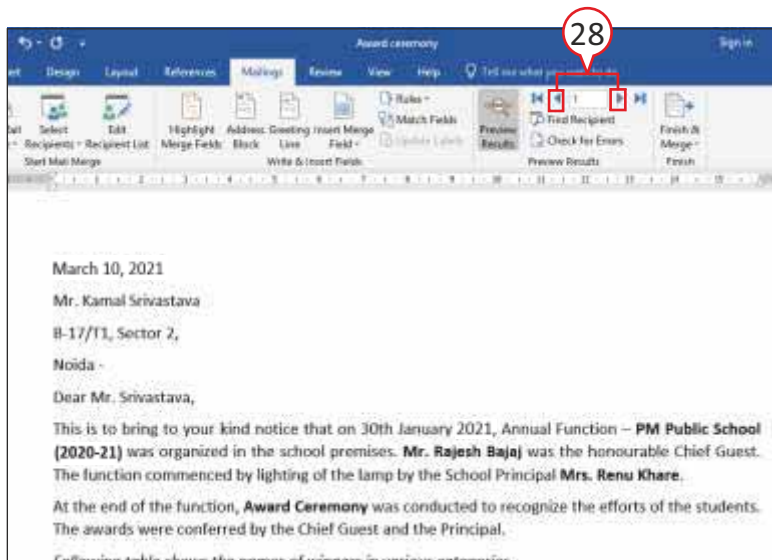
26. Click on **OK**.



- A merge field, representing the greeting line, appears in the letter.

After completing the merge, Word will replace the merge field with greeting information.

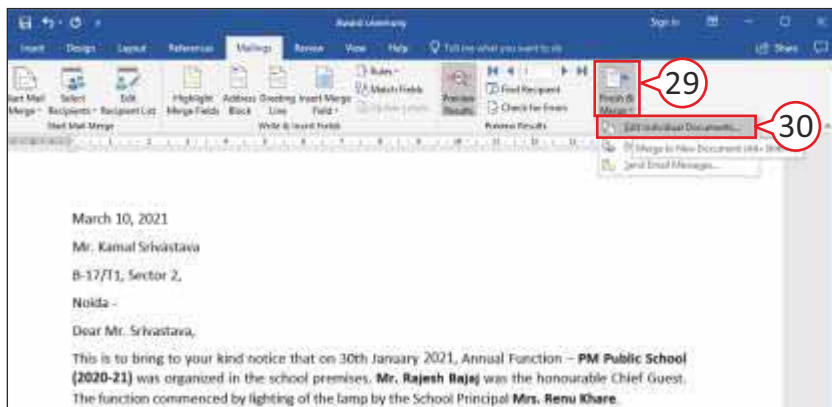
27. Click on **Preview Results**.



Word displays a preview of the merged letter, using the unchanged content of the letter and information from the address file.

28. Click on the **Next Record** icon to preview the next letter, and the **Previous Record** icon to move back and preview the previous letter.

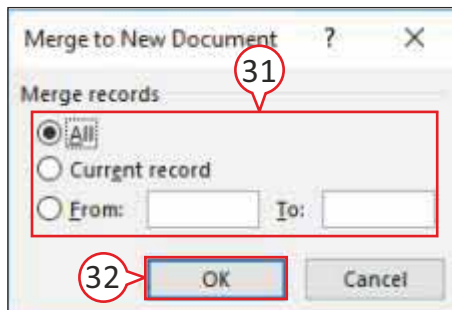
You can click on **Preview Results** to redisplay merge fields.



29. Click on **Finish & Merge**.

30. Click on **Edit Individual Documents**.

The **Merge to New Document** dialog box appears.



31. Click on a radio button to specify which people from your mailing list you want to create letters for.

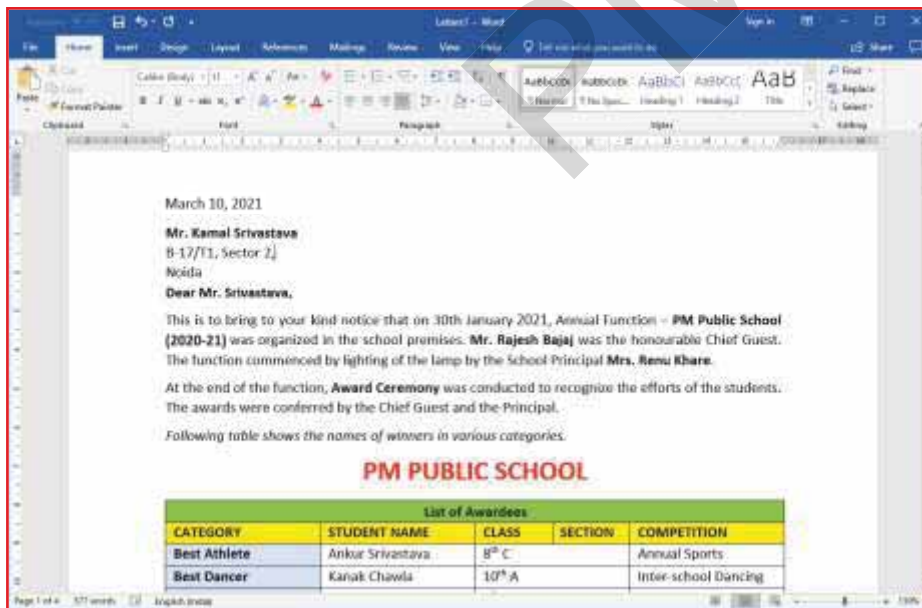
All: All people on your mailing list.

Current record: Only the displayed person.

From: People on your mailing list that you specify.

If you have selected **From:** option in step 31, click on the first text box and type the number of the first person you want to create a letter for. Then press the Tab key and type the number of the last person you want to create a letter for in the **To:** option.

32. Click on **OK** button to create the letters.



Word opens a new document and creates the personalized letters in the document.

You can edit, format and print the letters as you edit, format and print any document.

You can scroll through to see all the pages of your mail merge.



So Friends, your project is now complete.





Self-Evaluation

CHECKLIST

After reading the chapter, I know these points:

- I know that Word is a full-featured word processing program.
- I know that Format Painter tool is used to copy the formatting that we have already applied to a portion of the text.
- I know that we can change the amount of space between paragraphs and lines of text.
- I know that Tab is used for controlling the position of the text.
- I know that Tables are a way of organizing information into rows and columns.
- I know that Mail Merge feature produces a personalized letter for each person on mailing list.

Agree

Disagree

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>



Exercises

A. Tick [✓] the correct answer.

1. is used for controlling the position of the text.

a. Ruler	<input type="checkbox"/>	b. Tab	<input type="checkbox"/>	c. Columns	<input type="checkbox"/>
----------	--------------------------	--------	--------------------------	------------	--------------------------
2. refers to the intersection of a row and a column in the table.

a. Record	<input type="checkbox"/>	b. Cell	<input type="checkbox"/>	c. Label	<input type="checkbox"/>
-----------	--------------------------	---------	--------------------------	----------	--------------------------
3. By default, Word aligns the table text to the inside each cell.

a. center	<input type="checkbox"/>	b. right	<input type="checkbox"/>	c. left	<input type="checkbox"/>
-----------	--------------------------	----------	--------------------------	---------	--------------------------
4. makes the text appear above the regular line of text.

a. Subscript	<input type="checkbox"/>	b. Shadow	<input type="checkbox"/>	c. Superscript	<input type="checkbox"/>
--------------	--------------------------	-----------	--------------------------	----------------	--------------------------
5. is used to produce a personalized letter for more than one person.

a. Mail Merge	<input type="checkbox"/>	b. AutoCorrect	<input type="checkbox"/>	c. AutoFormat	<input type="checkbox"/>
---------------	--------------------------	----------------	--------------------------	---------------	--------------------------

B. Write 'T' for True and 'F' for False statements.

1. Word is a popular word processing program.
2. Table consists of a grid of boxes, arranged in rows and columns.
3. You cannot insert a preset table in a Word document.
4. Superscript and subscript are used only in mathematical formulas.
5. Mail Merge is useful to send the same document to many people.
6. Mail Merge is done by merging data document with the data source.

<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>

C. Fill in the blanks.

1. tool is used to copy the formatting that we apply to text.
2. By default, Word creates tab stops every across the page.
3. To select everything in the cell, on it.
4. contains the name and address of each recipient, to whom we want to send the document.
5. To start Mail Merge, click on tab.

D. Differentiate between the following.

- | | |
|----------------|------------|
| 1. AutoCorrect | AutoFormat |
| | |
| | |
| | |
| 2. Merge Cell | Split Cell |
| | |
| | |
| | |

E. Answer the following questions.

1. What is the use of Format Painter?
.....
.....
2. How many types of tab settings are available in Word? Name them.
.....
.....
3. Why do we need table?
.....
.....
4. What are the three ways to create a table in Word?
.....
.....
.....
5. What do you mean by Mail Merge?
.....
.....

F. Application-based Question

The computer teacher asked Ravi to quickly prepare a letter for 50 students with different names and addresses and then take 50 different printouts. For this, he will have to compose all the letters. What should he do to save his time?

.....

Activity Section

Lab Activity

Skill Formation

- These activities enhance the organizational and linguistic skills of the students.

A. Create a table in Word to store the fee details in tabular format.

- Open a blank document and insert a table containing 5 rows and 6 columns.
- Enter the following values in the table:

Roll No.	Name	Tuition Fee	Transport Charges	Annual Charges	Computer Fee
1	Ajay	4200	800	1550	300
2	Rahul	4000	760	1250	300
3	Jitender	4000	650	1000	300
4	Gopal	4800	850	1250	300

- Insert another column between Tuition Fee and Transport Charges, and give the heading 'Examination Fee' to this column.
- Enter the examination fee as 400 for all the cell values in that column.

5	Harshit	4500	400	750	1550	300
---	---------	------	-----	-----	------	-----

- Save the document as 'My First Table'.

B. Create multiple letters using Mail Merge feature in Word.

- Create the following letter informing about Annual Swimming Competition.

<<Name>>

<<Class>> <<Section>>

<<Address>>

<<City>>

Dear <<Name>>

This is to inform you that your name has been short-listed for the Annual Swimming Competition which is going to be held on 15th December 2021. You are requested to come for a meeting with the coach on 2nd November 2021 at 9:30 a.m. in the school playground. The purpose of meeting is to discuss the training schedule for the upcoming competition.

With regards,

- Create a data source for at least five students, containing **Name**, **Class**, **Section**, **Address** and **City** and merge the above document.

Group Discussion

Discuss the topic- 'Mail Merge is a Time Saving yet Complicated Process'.

Online Link

To learn more about tables in MS-Word, visit the website:

<https://www.pcworld.com/article/2459947/how-to-create-and-customize-tables-in-microsoft-word.html>

4

PowerPoint – Creating Presentation

OBJECTIVES

After completing this chapter, you will be able to:

- Use themes and templates in PowerPoint presentation.
- Change PowerPoint views and slide layout.
- Add slide transition and animation effects.
- Run, save and print a presentation.

Hey Friends! In your previous class, you have learnt how to create and save the presentation. Now, let us learn some more features provided in PowerPoint.



Introduction

PowerPoint is a **presentation program** developed by **Microsoft**. It provides various views and tools which you can use to build a presentation that includes words, graphics, and media. Through presentations, you can communicate ideas, messages, and other information effectively to a group of people.



One page of your presentation is called a **slide**, and a group of slides on any one topic is called **presentation**.

Using Themes and Templates

In PowerPoint, you can start making presentation on the blank presentation, or you can use a theme or a template.

Theme is the look, color, and graphics that the slides in your presentation have in common. When you create a new presentation, PowerPoint prompts you to choose a theme. When you choose a specific non-blank theme, PowerPoint applies a set of pre-set colors, fonts, and placeholders to the slides. All these elements vary from theme to theme.

Templates provide a quick way to create a new PowerPoint presentation. They contain layouts, theme colors, fonts, effects, background styles and the content. You can replace them with your own text, graphics, charts, tables and multimedia while maintaining the preset layout.

Some templates are installed or built-in in PowerPoint, but some need to be downloaded from the Internet.

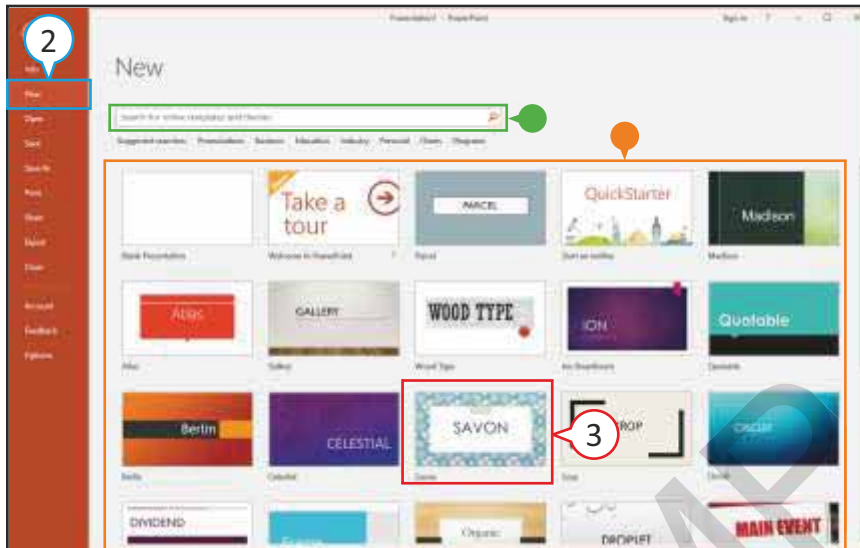
APPLYING THEMES

It is easy to apply a theme to a single slide, a section, or the entire presentation. Generally, it is better to use one theme for an entire presentation so that the slides have a consistent look and feel.



1. Click on **File** tab.

Backstage view will appear.



2. Click on **New**.

Themes and **Templates** available on your computer will appear.

- You can create a new presentation by clicking a preset theme.

- You can use the **search box** to look for a template on Internet.

3. Click on any theme.

The **theme preview** dialog box opens.



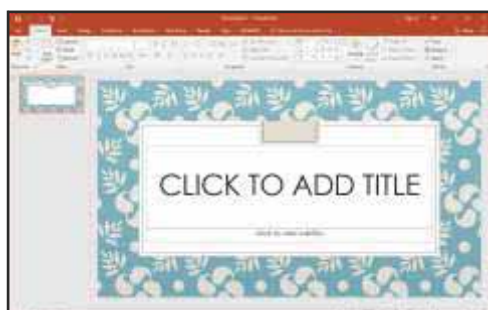
- Click on **More Images** arrows to view more theme layouts.

- You can preview different theme designs here.

- Click the arrows to view the previous or next theme.

4. Click on **Create** to start a new presentation.

- You can click the **Close** button to cancel the preview dialog box.



The theme selected by you appears on the screen.

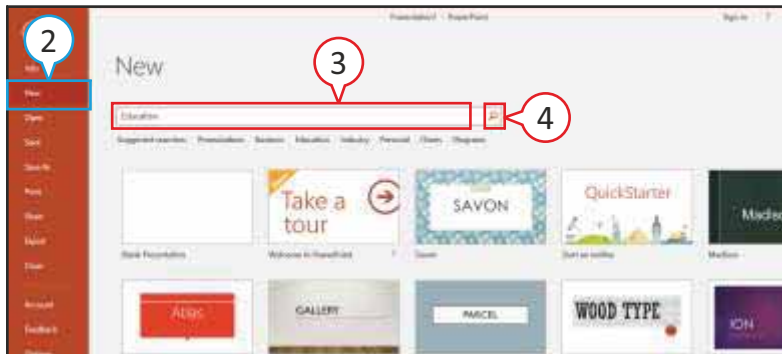


Update Your Knowledge

A template contains several preset slide layouts that consist of different combinations and arrangements of placeholders.

APPLYING TEMPLATE

There are thousands of PowerPoint templates available online. You can search for them by using the search feature. Type the keyword in the search feature, and it shows you online presentation templates associated with that keyword.



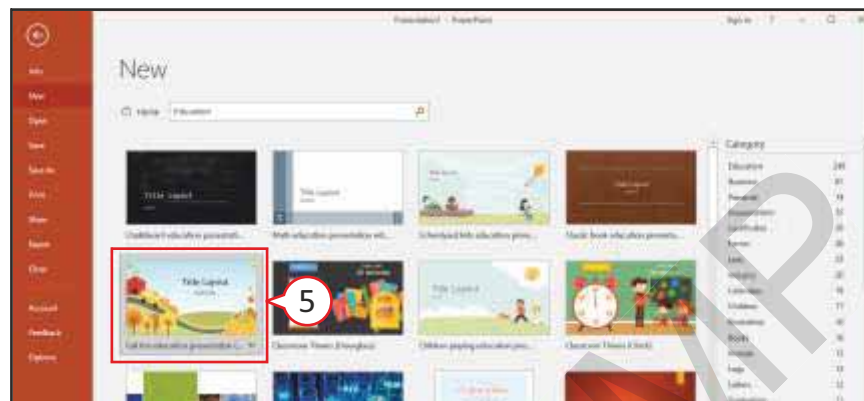
1. Click on **File** tab (*not shown*).
Backstage view will appear.

2. Click on **New**.

3. Type a keyword in the **Search** text box.

*This example uses **Education**.*

4. Click on **Search** [🔍].



PowerPoint shows online templates that match the search text.

5. Click to select the template of your choice.



A dialog box appears showing you a preview of the template and the information related to it.

● You can click the arrows to view the previous or next template.

6. Click on **Create**.



Selected template appears in the PowerPoint window.

It contains layouts, theme colors, fonts, effects, background styles and the content.

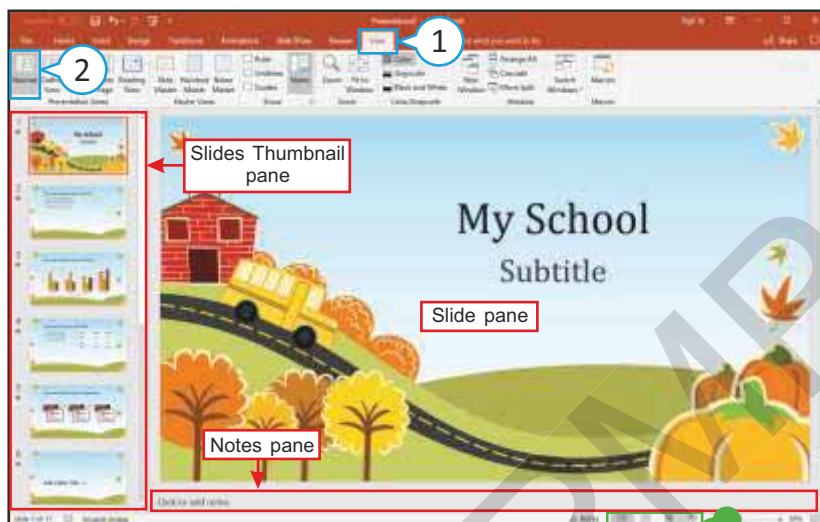
Now, you can replace them with your own text, graphics and multimedia while maintaining the preset layout. It helps you to create a professional-looking presentation very quickly.

Changing PowerPoint Views

You can use various PowerPoint views to change the appearance of your presentation on screen. PowerPoint 2016 has Normal, Outline, Slide Sorter, Notes pane, Reading and Slide Show views. By default, PowerPoint displays your presentation in Normal view.

NORMAL VIEW

Normal view displays a single slide where you can create, position, and format objects. It contains three panes — **Slide pane**, **Slides thumbnail pane** and **Notes pane**. The size of these panes can be adjusted by dragging the pane border.



1. Click on **View** tab.
2. Click on **Normal** option.

PowerPoint shows the default view, displaying the current slide in the presentation.

- You can also click on **View** buttons on the Status bar. These buttons include **Normal view** (🖼️), **Slide Sorter view** (📊), **Reading view** (📖), and **Slide Show view** (🎬).

Slide Pane

Slide pane is the largest pane in Normal view that shows all its contents. Here, you can create and manipulate slide objects, and type text directly onto the slide.

Slides Thumbnail Pane

Slides thumbnail pane contains thumbnails of each slide. The thumbnails are numbered in the order in which they appear in the slide show. You can click and drag the thumbnails to change the order of slides, and you can even delete slides from this pane.



1. Click on the thumbnail of a slide, from the Slides thumbnail pane, to view a particular slide.
- PowerPoint displays selected slide in the Slide pane.

Notes Pane

The **Notes pane** appears below the Slide pane. You can type notes associated with each individual slide that you can refer to while presenting the slide show.



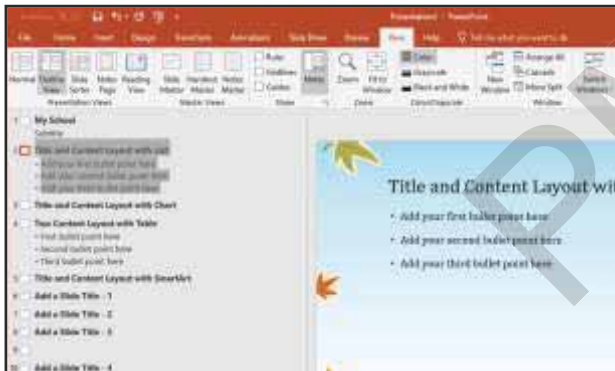
1. Display the slide in which you want to add notes.
2. Click inside the Notes pane and type the note for the slide.

If you type more than one line of the text, you can use the scroll bar to browse through the text.

- If the Notes pane is not visible then click on **Notes** button to display it.

OUTLINE VIEW

In **Outline** view, your presentation appears as an outline made up of titles and main text from each slide.



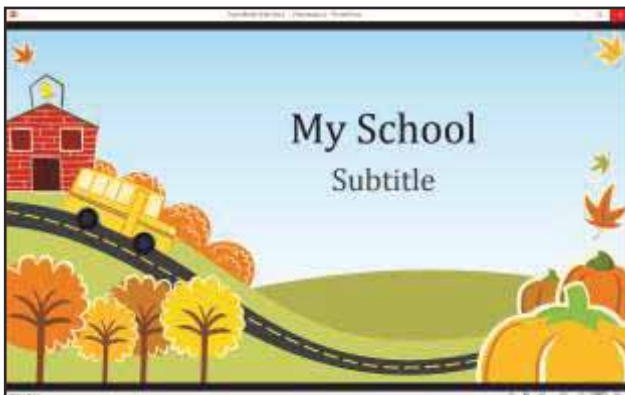
SLIDE SORTER VIEW

You can see miniature slides of the presentation in this view.



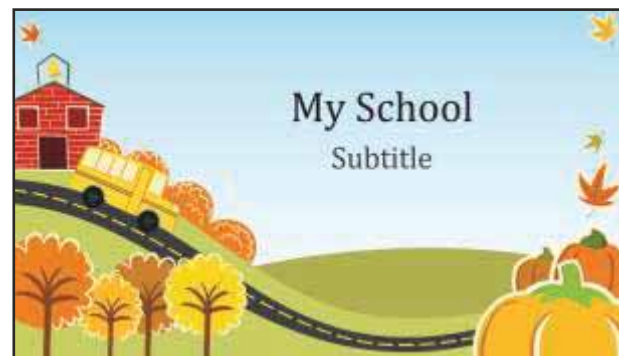
READING VIEW

Reading view allows you to view a presentation not in a full-screen but in a window with simple controls for easy review.



SLIDE SHOW VIEW

The **Slide Show** view is used to view the presentation in full screen.



Modifying a Background

Every slide has a background on which all slide elements reside. You can make the background colorful or plain white, or you can even use a texture or digital image as a background. It greatly enhances the look of your presentation.

In this example, we have used a template of **Sales Training** for modifying the background. But you can also modify the background of Blank presentation.



1. Select the slide which you want to modify.
2. Click on **Design** tab.
3. Click on **Format Background**.

The **Format Background** pane appears on the right.

4. Click on the radio button of **Solid fill**.



5. Click on the **Fill color** button to open the color palette.
6. Select the color you want to apply as the background.

Background color applies to the currently selected slide.

- You can click on **Apply to All** button to apply solid color on all the slides.

- You can click on **Reset Background** button to bring it to its original background color.

7. Click on **Close (x)** button to close the **Format Background** pane.

In the above example, we have applied Solid fill in background, but you can also apply Gradient fill, Textured fill and Pattern fill in the background.



Start

Slide 1

Project: Presentation on Data Handling

Subject Integration

Mathematics

This integration will make the students learn about fundamentals of data handling.

Data Handling Using SmartChart

By the students of class 5

Slide 2

About Data Handling

- ▶ Data is a collection of raw facts and figures.
- ▶ For example, marks of 5 students are 87, 97, 67, 86, 99.
- ▶ Data handling is the way of representing data in an organized and pictorial form.



Slide 3

Stages of Data Handling

- ▶ **Data Collection**
 - ▶ It is the process of collecting data from the different sources so as to proceed it into meaningful information.
- ▶ **Data Organization**
 - ▶ It is the way to structure and partition the collected raw data to make it more usable.
- ▶ **Data Representation**
 - ▶ It refers to the method used to represent information.



Slide 4

Data Organization

- ▶ **Structured**
 - ▶ **Raw Data**

28 31 29 27 30 29 26 30 28
28 29 27 26 32 28 32 31 25 30
27 30 29 30 28 29 31 27 28 28
 - ▶ **Ascending**

25 26 26 27 27 27 27 28 28 28
28 28 28 28 29 29 29 29 29
30 30 30 30 30 31 31 31 32 32

Partitioned	
MARKS	FREQUENCY
25	1
26	2
27	4
28	7
28	6
30	5
31	3
32	2

Slide 5



Slide 6



Slide 7

Final Words

► The knowledge of Data handling can paves the way for lucrative career in Data Science.

This project deals with creation of seven slides which include text, graphics, charts, table, SmartArt and media clip. Now, let us create the project by using various features of PowerPoint.

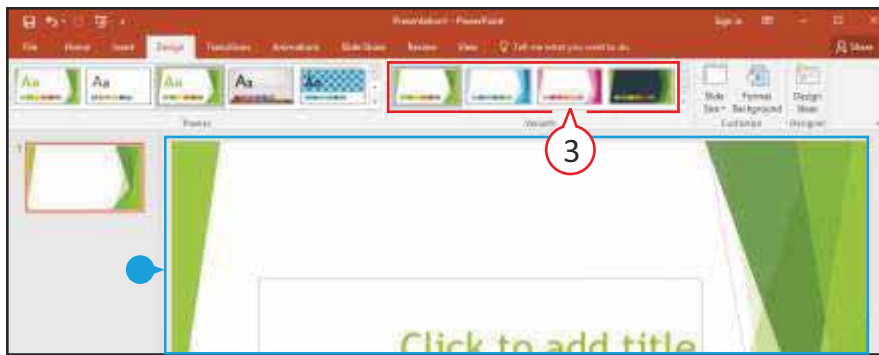
Creating a Presentation

CREATING A BLANK PRESENTATION WITH DESIGN THEME

Design theme is a built-in design for creating a presentation which includes pre-defined information, layout, background, text, and colors. You can select a particular design theme using the **Design** tab. By default, PowerPoint opens a blank slide for you whenever you start the program.



1. Click on **Design** tab.
 2. Click on a theme.
- You can click on the down arrow of **More** button to view the full palette of themes.



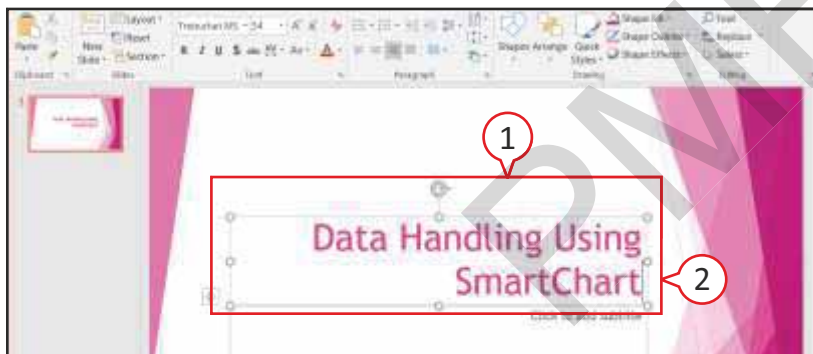
- The theme is applied to Slide 1.
- 3. If you want different color of selected theme then click on any of the **Variants** to apply a different color scheme to the theme.



PowerPoint applies the color scheme to the selected theme in the slide.

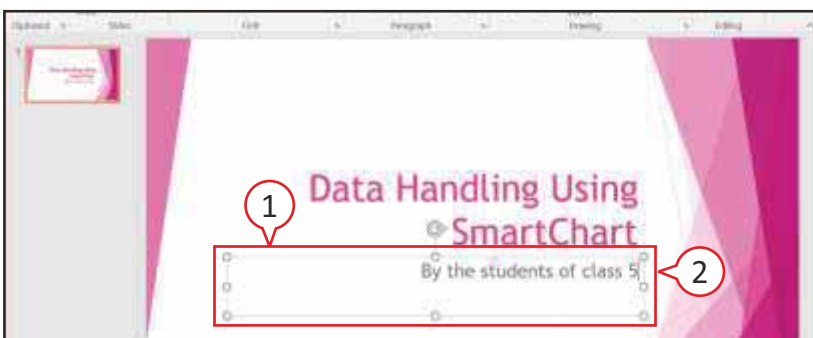
CREATING THE TITLE SLIDE

When you create a new presentation, PowerPoint displays a blank title slide. It assumes that every new slide has a title whenever you create a new one. Any text typed after a new slide display becomes **title text** in the title text placeholder.



1. Click on the **title text placeholder** box.
 2. Type your text in the box.
- The typed text is displayed in the title text placeholder and in the Slides thumbnail pane.*

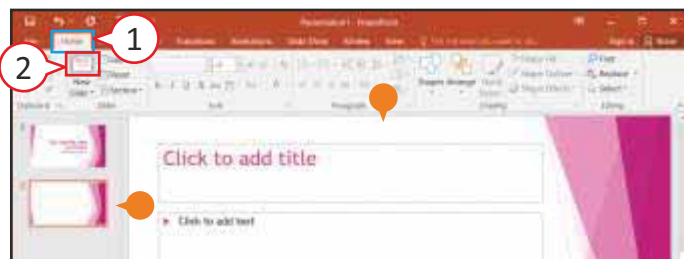
Entering Text in Subtitle



1. Click on the **subtitle text placeholder** box.
 2. Type your text in the box.
- The subtitle text is displayed in subtitle text placeholder and in the Slides thumbnail pane.*

ADDING A NEW SLIDE TO A PRESENTATION

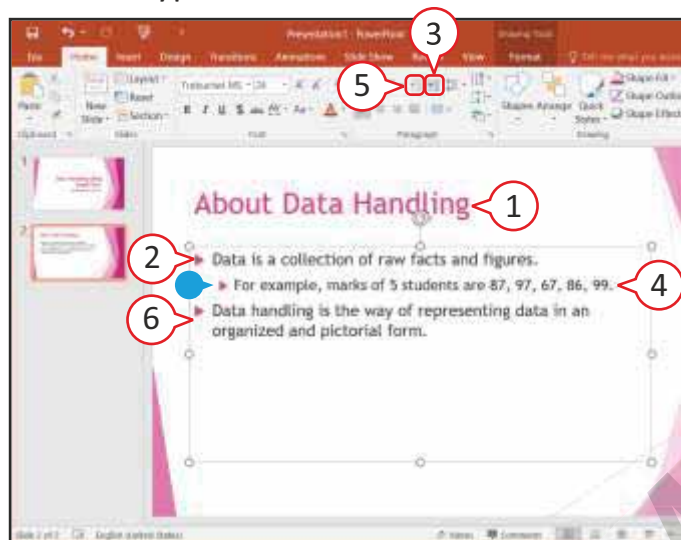
Your next step is to add a new slide after creating a title slide. To build a presentation, you can add as many slides as you like. Normally whenever a presentation is created, in addition to slides, you can add text, graphics, and charts.



1. Click on **Home** tab.
 2. Click on the **New Slide** (or press *Ctrl+M*).
- The slide 2 appears in the presentation and in Slides thumbnail pane.

Adding Text to Slide 2

You can type the text in slide 2 in the same way as you typed text for slide 1.



1. Click on **title** and type your text.
2. Click on **subtitle** and type your text. A bullet [►] appears beside your text. When you press the **Enter** key, a new bullet appears in the next line.
3. Click on **Increase List Level** [►] button to indent the text.
- PowerPoint indents the text.
4. Type your text.
5. Click on **Decrease List Level** [◀] button to decrease the indent.
6. Complete your remaining text.

SELECTING TEXT

You will often need to select the text you want to work with before making changes to the text in your presentation. The selected text appears highlighted on your screen.

To Select a Word

1. **Double-click** on the word you want to select.

To Select a Sentence

1. Click **three times** quickly on the sentence you want to select.

To Select a Point

1. Click on the **bullet** (►) beside the point you want to select.

To Select any Part of Text

1. Position the mouse pointer (I) over the first word you want to select.
2. Drag the mouse pointer (I) over the text you want to select.

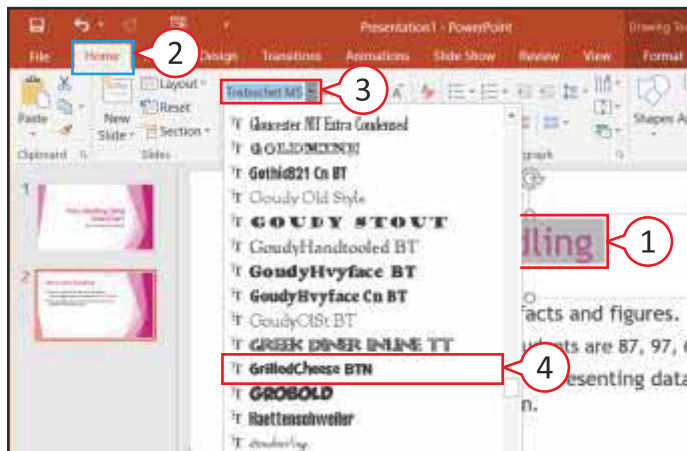
DELETING TEXT

Text can be deleted from a slide to remove information that you no longer need in your presentation.

1. Select the text you want to delete.
2. Press the **Delete** key from the keyboard. *The text will disappear from the slide.*

CHANGING THE FONT OF TEXT

You can change the font of the text to enhance the appearance of a slide.

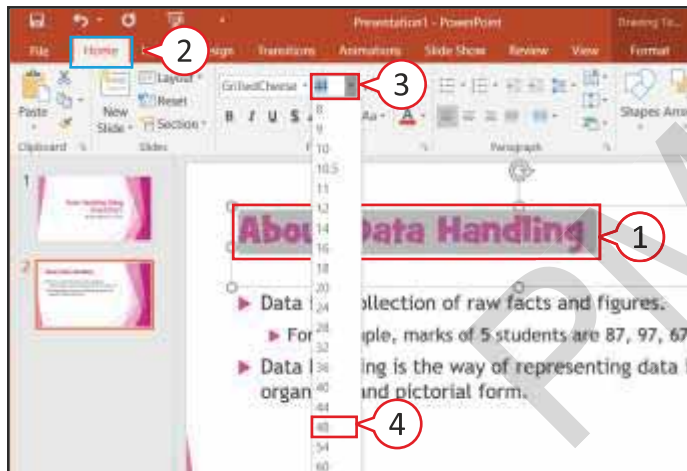


1. Select the text you want to change to a different font.
2. Click on **Home** tab.
3. Click on down arrow button of **Font** to display a list of the available fonts.
4. Click on the font you want to use.

PowerPoint applies new font to the selected text.

CHANGING THE FONT SIZE OF TEXT

You can change the size of the text on a slide in PowerPoint.

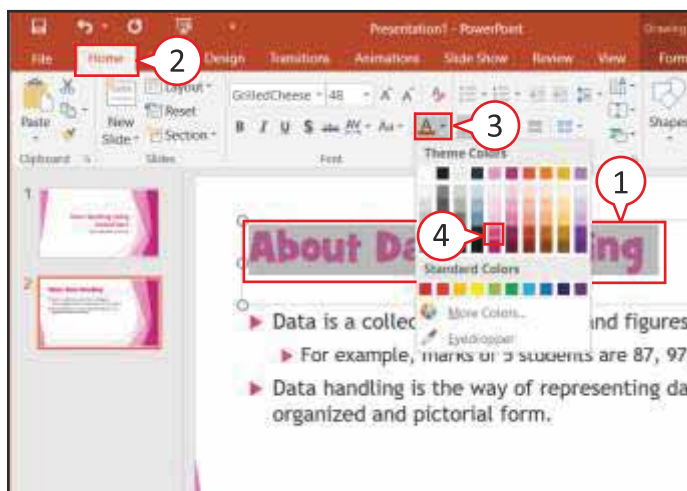


1. Select the text you want to change to a different font size.
2. Click on **Home** tab.
3. Click on down arrow button of **Font size** to display a list of the available sizes.
4. Click on the font size you want to use.

PowerPoint immediately applies the new font size to the selected text.

CHANGING THE FONT COLOR OF TEXT

You can change the font color of the text to make your slide more appealing. It helps to draw attention towards important information in your presentation.

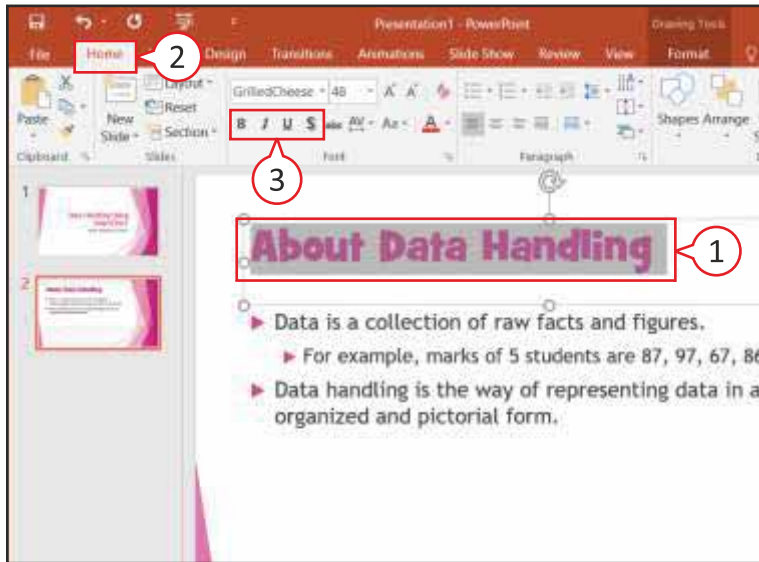


1. Select the text you want to change to a different color.
2. Click on **Home** tab.
3. Click on the down arrow of **Font color**.
4. Click on the desired color.

PowerPoint applies color to the selected text.

CHANGING THE TEXT STYLE

You can change the appearance of the text by changing the text style as per four different styles: **bold**, **italic**, **underline**, and **shadow**.



1. Select the text or text box that you want to change.
2. Click the **Home** tab.
3. Click on any style option:

Bold [**B**] (Ctrl+B)

Italic [*I*] (Ctrl+I)

Underline [U] (Ctrl+U)

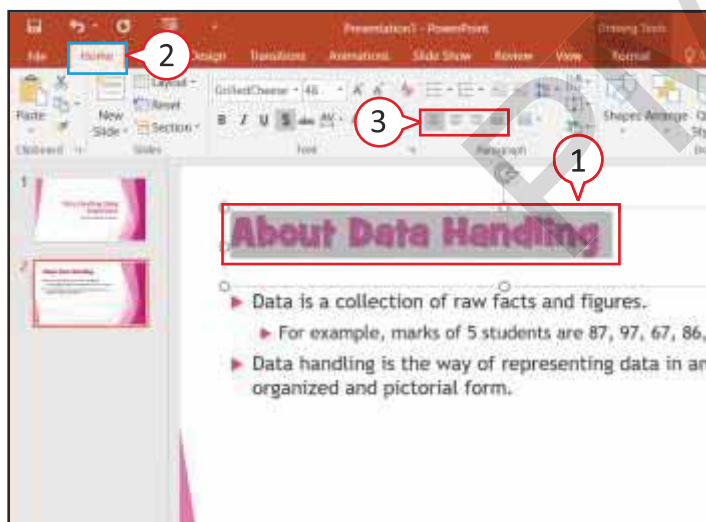
Shadow [**S**]

PowerPoint assigns the desired formatting.

In this example, we have used **Shadow** style.

CHANGING THE ALIGNMENT OF TEXT

You can change the positioning of text in a text box by assigning different alignment commands.



1. Select the text or text box whose alignment you want to change.
2. Click on **Home** tab.
3. Click on any alignment option:

Align Left [] (Ctrl+L)

Center [] (Ctrl+E)

Align Right [] (Ctrl+R)

Justify [] (Ctrl+J)

PowerPoint assigns the alignment of the text.

In this example, we have used **Center** alignment.

SETTING THE LINE SPACING

You can change the line spacing to create more or less space between lines of text.

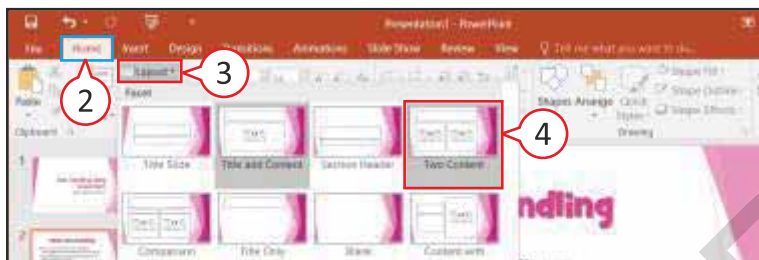
1. Select the text or text box whose line spacing you want to change.
2. Click on **Home** tab.
3. Click on the down arrow of **Line spacing** button.
4. Click to select line spacing option.

PowerPoint applies the selected line spacing.

Changing Slide Layout

A **slide layout** determines the placement of all the items such as title, graphics or text boxes that make up your slide. You can change the layout of the slide any time. Most slide layouts contain the content placeholder. The content placeholders may be to the right or left of the text, above the text, or below the text. You can use content placeholders to build your presentation effectively and efficiently. They enable you to insert **text** or one of the **six graphical objects** so that you can make your presentation quickly.

You may need to make a few adjustments to the text position and size to fit the new layout if you assign a new slide layout to the slide with existing text. For best results, you should assign a new layout before adding content to your slides.



1. Display the slide that you want to change the layout.
2. Click on **Home** tab.
3. Click on **Layout** button.
4. Click on any desired layout.

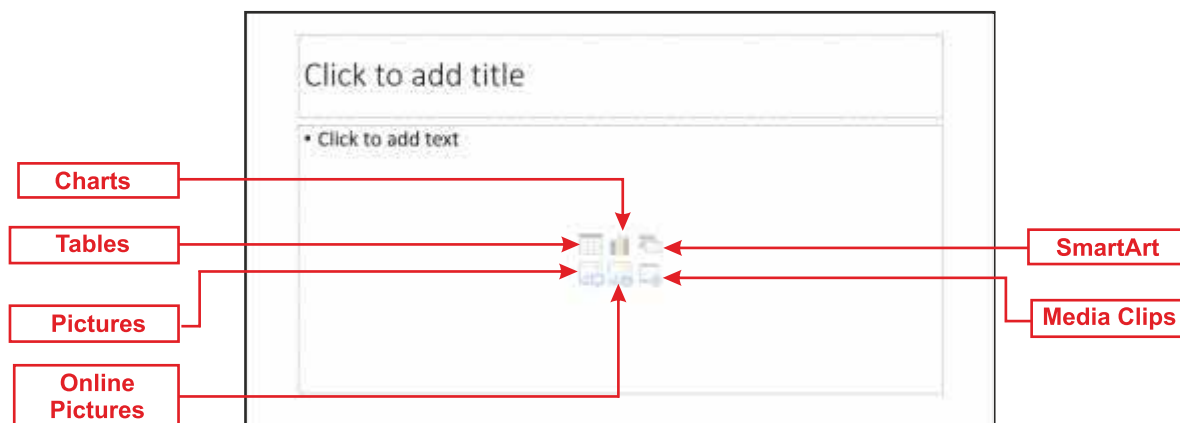
- PowerPoint immediately assigns a layout to the slide.


The text in the slide will automatically adjust itself to the new layout.





CONTENT PLACEHOLDER


Content placeholder appears on most of the slide layouts. You can use them to build your presentation effectively and efficiently. They enable you to insert text or one of the six graphical objects so that you can make your presentation quickly.





Tables: **Table** icon () is used to create a table. You can specify the number of columns and rows in the table.

Charts: **Chart** icon () is used to generate a chart using a chart type that you specify and data that you type into an Excel worksheet.

SmartArt: **SmartArt Graphic** icon () is used to insert a diagram using one of the many diagram styles provided by PowerPoint.

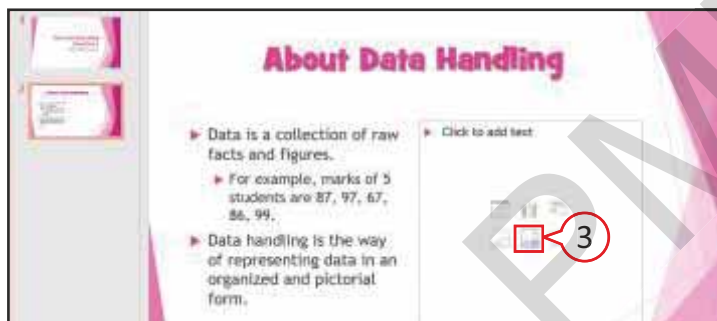
Pictures: **Pictures** icon () is used to insert a picture file such as a bitmap or JPEG you have stored on your computer, or other storage media.


Online Pictures: **Online Pictures** icon () is used to select an image from the built-in pictures collection, or you can import them from Bing Image Search.

Media Clips: **Videos** icon () is used to insert a video file that plays on command during the slide show.

ADDING ONLINE PICTURE


Picture can be added to a slide to make your presentation more interesting and entertaining. It also helps to keep the audience focused. An online picture can be added to the slide in your presentation. Following are the steps:



1. Display the slide in which you want to add an online picture.
2. Change the layout of the slide to the one that includes a placeholder for an online picture.
3. Click on **Online Pictures** icon [] .

In the above example, we are adding online picture using content placeholder. But you can also add online picture by clicking on the **Online Pictures** option from the **Insert** tab.



1. Display the slide in which you want to add an online picture.
2. Click on **Insert** tab.
3. Click on **Online Pictures** icon [] .



Update Your Knowledge

Placeholders are rectangular areas on slides that you replace with your own text, graphics, charts, tables, SmartArt, and/or multimedia while maintaining the preset layout. Several types of placeholders can hold text: title, bulleted, subtitle, section header, caption, quote, and name card. You simply click the placeholder and then start typing. You can also go back and edit text you have already typed.



The **Insert Pictures** dialog box appears.

4. Type a keyword or phrase in the **Bing Image Search** box.

5. Click the **Search** icon.



• You can use the scroll bar to see all the displayed matches.

6. Click on the image to add to the slide.

7. Click on **Insert**.

In this example, we have selected the image of Data Handling.



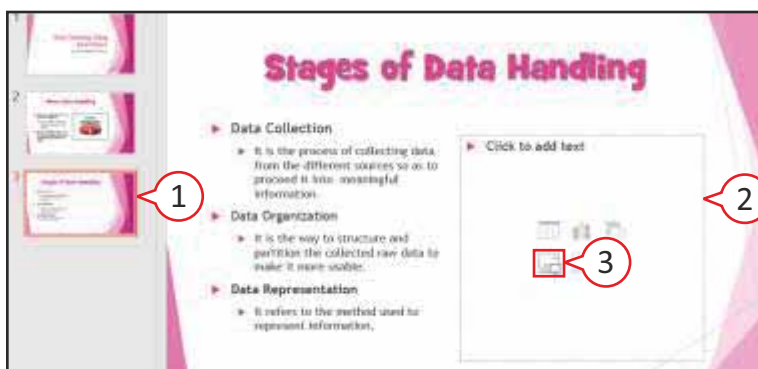
The online picture is inserted and the **Picture Tools** appear in the **Format** tab.

You can resize or move the picture.

To deselect the picture, click anywhere outside the picture.


ADDING A PICTURE

A picture stored on your computer can also be added to the slide in your presentation.



1. Open the third slide and add text in it.

2. Change the layout of the slide to the one that includes a placeholder for a picture.

3. Click on **Pictures** icon () to add a picture to the slide.



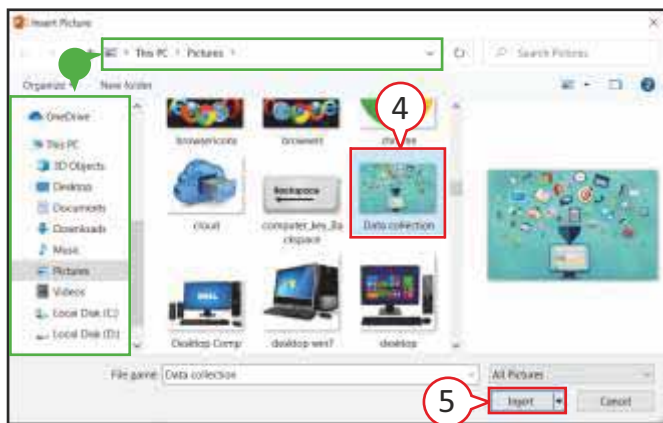
Update Your Knowledge

The online pictures in the Bing Image Search results are available under a **Creative Commons license**; you should credit the source in your presentation. However, you may not be permitted to use the image for commercial purpose.



Update Your Knowledge

If the online pictures from the Bing Image Search feature are not satisfactory, then you should search the web and save the selected image on your computer. Now click on **Pictures**, and use the **Insert Picture** dialog box to browse your saved image.



The **Insert Picture** dialog box appears.

- Navigate these areas to find folder or drive containing picture that you want to use.
4. Click on the picture you want to add to the slide.
 5. Click on **Insert** to add the picture to the slide.



- The picture is inserted and **Picture Tools** appear on the **Format** tab.

You can resize or move the picture.

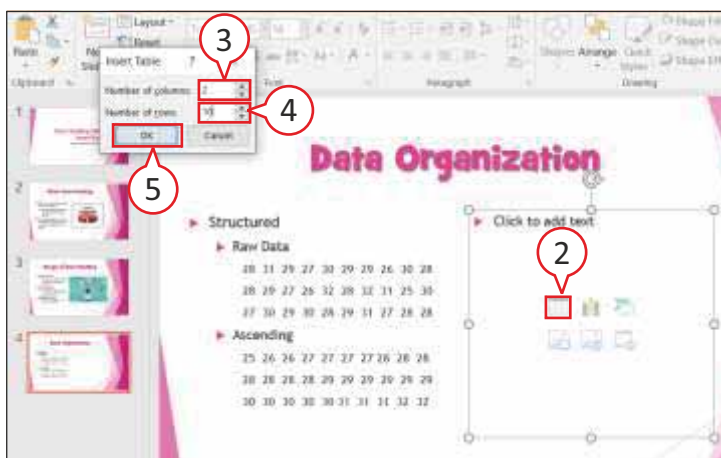
To deselect the picture, click anywhere outside the picture.


Note: In this example, we have added pictures using content placeholder. But you can also add pictures by clicking on the **Pictures** icon from the **Insert** tab.

ADDING A TABLE

Table is used to organize data in rows and columns. You can use a content placeholder to insert a table, and then type data into the table cells. By default, most of the table styles assume that you will enter **column headings** in the top row of the table. If you need **row headings**, add an extra column to hold them.

1. Create the fourth slide, add text and change the layout that includes a placeholder for a table.

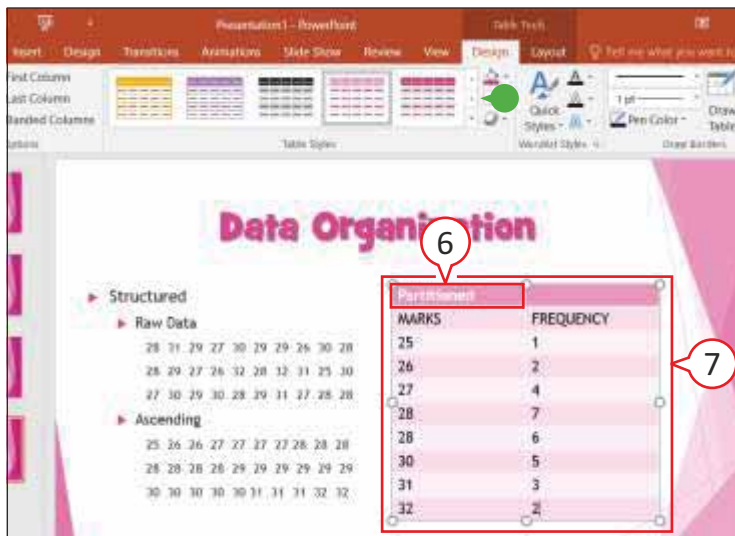


2. In the content placeholder, click on **Table** icon [].

The **Insert Table** dialog box appears.

3. Type the number of **columns** that you want to appear in the table.
4. Type the number of **rows** that you want to appear in the table.
5. Click on **OK**.

PowerPoint inserts table into the slide and displays **Table Tools** tab in the Ribbon.



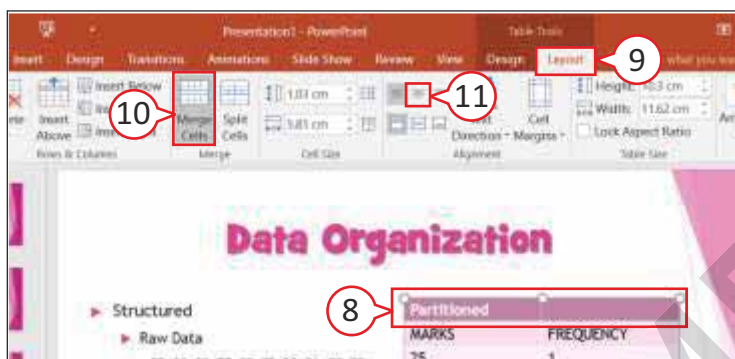
- You can click here to change the **Table Style**.

6. Click inside the first table cell, and type your data.

You can press **Tab** key to move from one table cell to the next.

7. Continue typing the table cell data to fill the table.

Now according to the project, the first row of the table should be a header row.



8. Select first row in table.

9. Click on **Layout** tab.

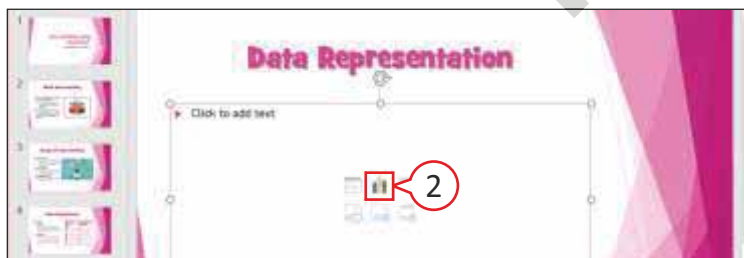
10. Click on **Merge Cells**.

11. Click on **Centre Align** button.


The two selected row will be merged with the data center aligned.

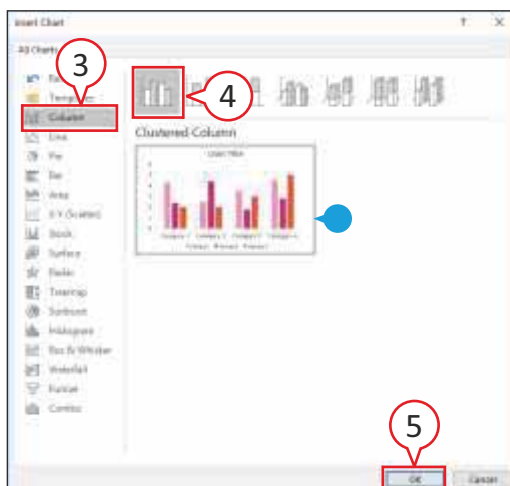
ADDING A CHART

Charts tell a story by conveying statistical information effectively. In PowerPoint, you can insert a chart using an Excel worksheet. You can type your own chart data and choose the type of chart that you want to display.



1. Create the fifth slide, add text and change the layout that includes a placeholder for a chart.

2. In the content placeholder, click on **Chart** icon [].



The **Insert Chart** dialog box appears.

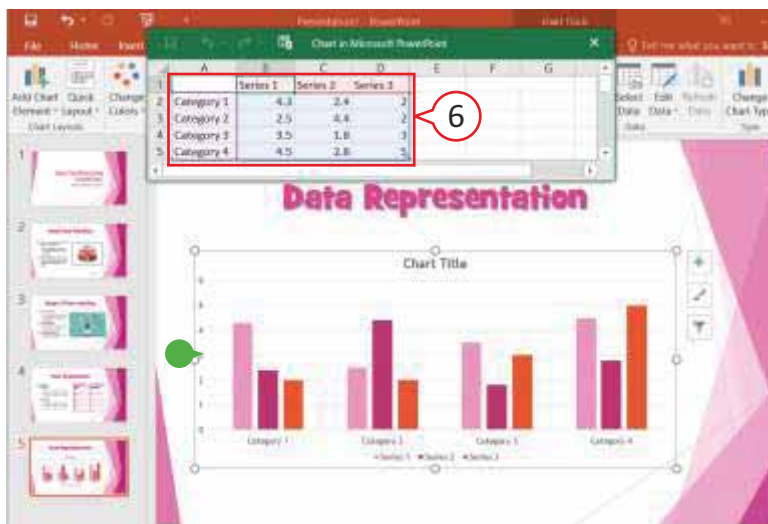
3. Click on a **chart category**.

4. Click on a **chart type**.

• The preview of selected chart type appears here.

5. Click on **OK**.

Note: In this example, we have added chart using content placeholder. But you can also add chart by clicking on the **Chart** icon from the **Insert** tab.

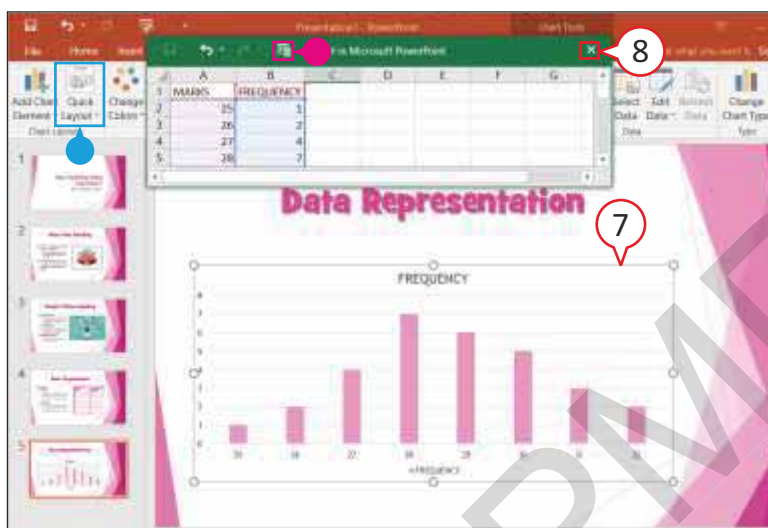


- PowerPoint immediately displays a sample of the chart type on the slide.

The Excel program window opens with a sample of the chart data.

6. Replace the data with your chart data that you want to illustrate.

You can press **Tab** key from keyboard to move from cell to cell.



7. When finished entering chart data, click anywhere in the chart area to update the data.

- You can click on **Edit Data** button to edit the chart any time.
 - You can click on **Quick Layout** button to change the chart style.
8. Click on **Close** button to close the Excel window.

ADDING A SMARTART

You can use **SmartArt Graphics** to illustrate a process or structure. PowerPoint offers many SmartArt layouts to help you communicate graphically with your viewers. It shows you a variety of shapes to which you can add your own text.

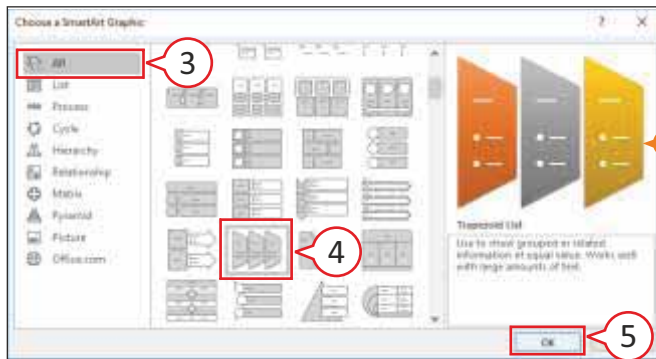


1. Create the sixth slide, add text and change the layout that includes a placeholder for a SmartArt.
2. In the content placeholder, click on **SmartArt Graphics** icon [].



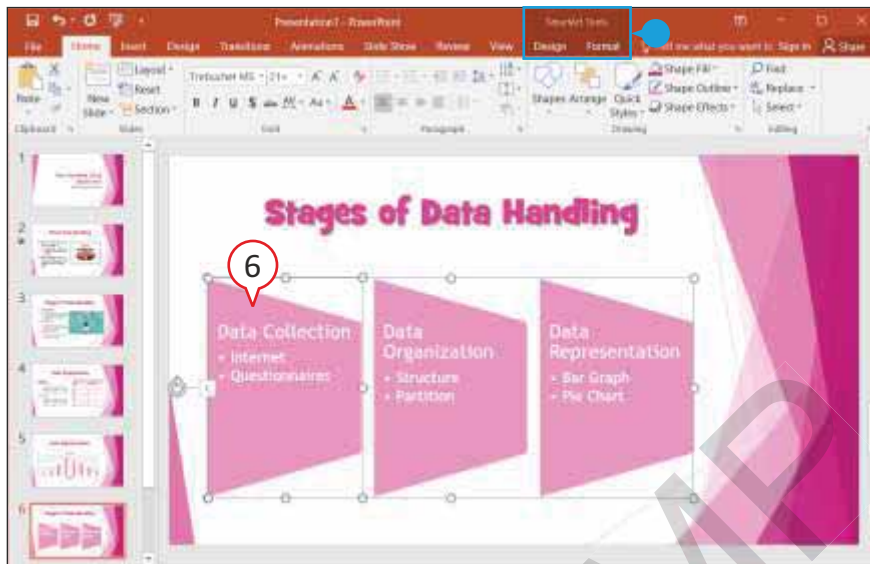
Update Your Knowledge

When you insert a chart, PowerPoint automatically applies a style to it, based on the theme of the slide. You can also change the formatting of charts. To format any object on a chart, click it and then use the formatting tools on the Chart Tools Design as per your requirement.



Choose a SmartArt Graphic dialog box appears.

3. Click on a **SmartArt category**.
4. Click on a **SmartArt type**.
- You can see the preview of selected type in this area.
5. Click on **OK**.



PowerPoint adds the graphic to your slide and displays the Text boxes.

6. Type text into the Text box.
7. Click anywhere outside the SmartArt to view it.
- You can format the smartart by using **SmartArt Tools**.

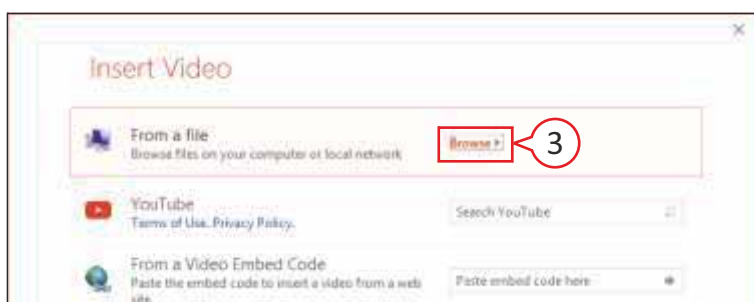
*Note: In this example, we have added SmartArt using content placeholder. But you can also add SmartArt by clicking on the **SmartArt** icon from the **Insert** tab.*

ADDING MEDIA CLIPS

Media clips can be inserted into your PowerPoint slides to add visual effect and are played during a slide show.

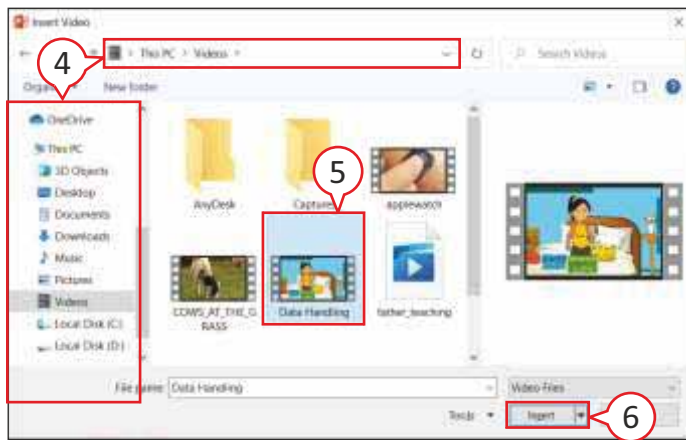


1. Create the seventh slide, add text and change the layout that includes a placeholder for media clips.
2. In the content placeholder, click on **Video** icon [].



Insert Video dialog box appears.

3. Click on **Browse** button.



The **Insert Video** dialog box appears.

4. Navigate these areas to find folder or drive containing media clip that you want to use.
5. Click on the file you want to insert.
6. Click on **Insert**.



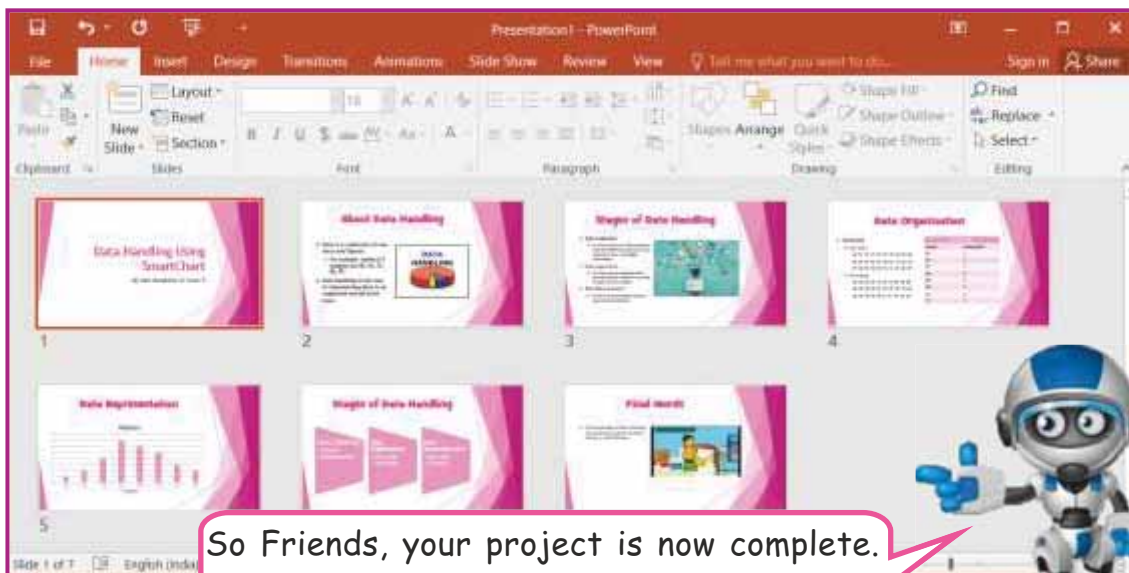
PowerPoint displays the clip to play in the slide.

7. Click on **Playback** tab.
8. Click on the down arrow of **On Click** and choose an option:
 - Click on **Automatically** to play the clip automatically.
 - Click on **On Click** to play the clip only when it is clicked.
9. Click on **Play/Pause** button in the toolbar beneath the media icon to play the file.

- You can resize the media clip to adjust it in your slide.

Note: In this example, we have added video clip using content placeholder. But you can also add video by clicking on the **Video** icon from the **Insert** tab.

You can also add sound to the presentation by clicking on the **Audio** icon [] from the **Insert** tab.



So Friends, your project is now complete.
All the seven slides have been created.



Adding Slide Transition

A **transition** is a visual effect that appears when you move from one slide to another. You can apply a transition in Normal or Slide Sorter view to a single slide, multiple slides, or all slides.

1. Click on the slide to which you want to add a transition.
2. Click on **Transitions** tab.



3. Click on a transition effect. *PowerPoint immediately displays a preview of the transition effect.*

4. Click on the down arrow of **Effect Options** button.
5. Click on an effect option for setting transition effect.



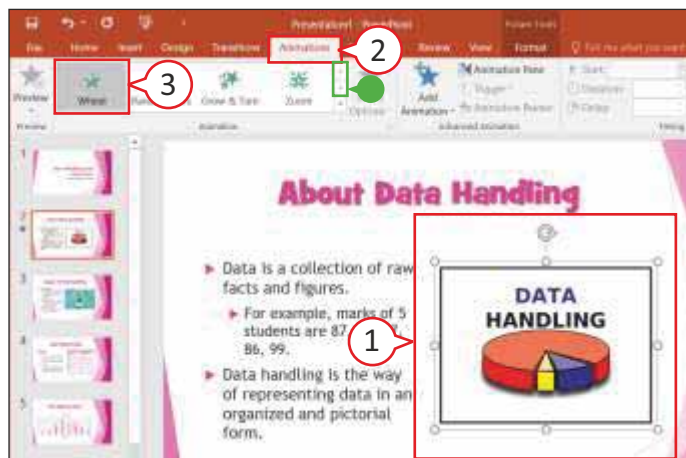
PowerPoint displays a preview of the transition effect.

- You can click on **Apply to All** if you want to apply the same transition effect to the entire slide show.

- PowerPoint adds an **animation** icon below the slide number.

Adding Animation Effects

Animation is the illusion of showing a series of still pictures in motion in rapid succession. Animation effects make the PowerPoint slide show interesting and give it a professional look. Special visual and sound effects applied to the text or content are included in animation. For example, each line on the slide can swivel as it is displayed on the screen.



1. Click on any **slide element** (such as text box, shape, or picture) to which you want to add animation in Normal view.
2. Click on **Animations** tab.
- You can scroll through the available animation effects.
3. Click on an animation effect.

PowerPoint immediately previews the effect on the slide and assigns a sequence number to the object or element.

You can click on **Preview** button to preview the effect.

PowerPoint adds an animation icon below the slide number.

PowerPoint allows you to apply animation effects not only on one element or object, but on the other elements on a slide too. The animation effects are displayed in the order they are applied.

Running a Presentation

Slide Show view is used to give the presentation to a group of people. You can run a slide show of your presentation on the computer screen. A slide show displays one slide at a time, covering the entire screen.



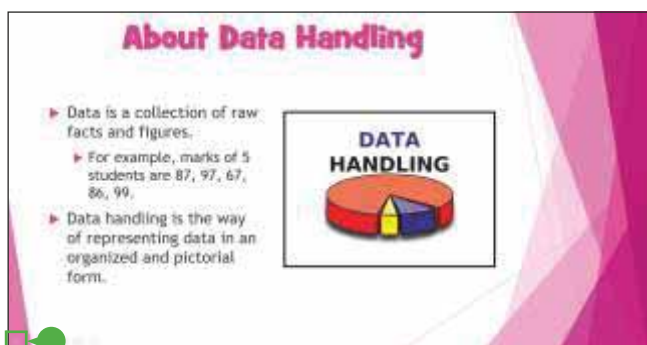
1. Click on the first slide you want to view in the slide show.
2. Click on **Slide Show** tab.
3. Click on **From Beginning** (or press **F5**).



The slide you selected fills your screen.

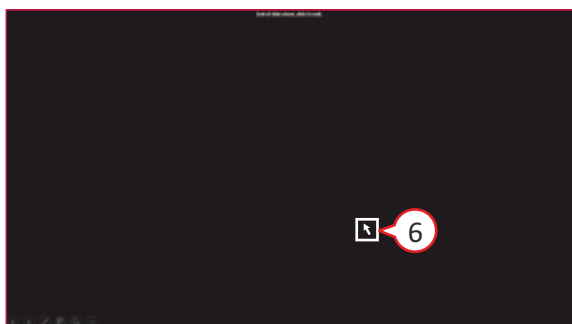
You can press **Esc** key on the keyboard to end the slide show any time.

4. To display the next slide, click on **Next** button or click anywhere on the current slide.



The next slide appears.

- To return to the previous slide, click on **Back** button or press **Backspace** key from the keyboard.



5. Repeat step 4 until the blank screen appears, indicating that you have reached at the end of the slide show.
6. Click on the screen to exit the slide show.

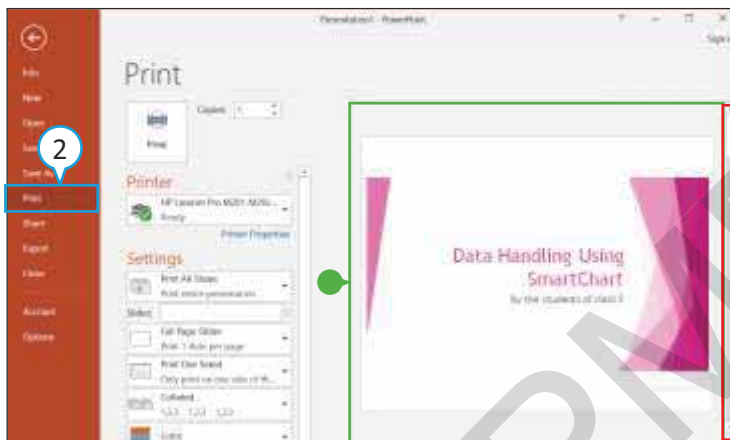
Saving a Presentation

After creating the presentation, it must be saved for its future use. The default extension of PowerPoint 2016 file is **.pptx**. Steps for saving a presentation are same as saving a **Word** document.

Printing a Presentation

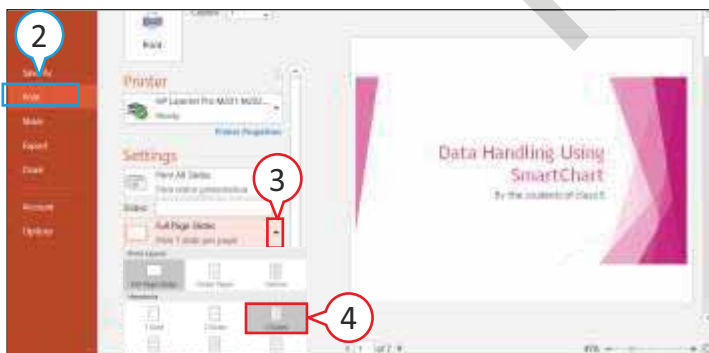
You can print the slides on the paper to review them separately from your computer, or you might want to print **handouts** for your audience to follow during your live presentation, or you might print your presentation **outline** to preserve a hard copy of the presentation text. If you want to see how your printout will look, you can see the **Preview** of the slides.

USING PRINT PREVIEW

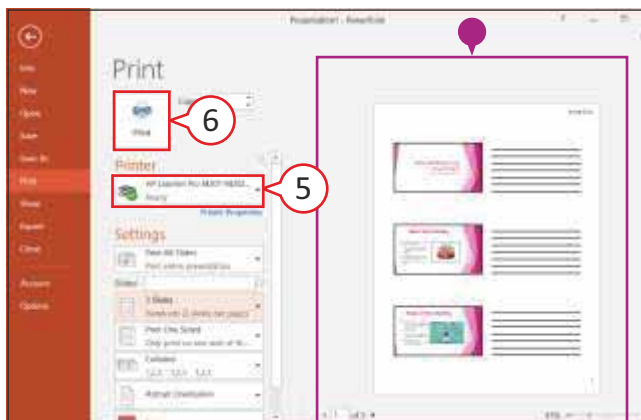


1. Click on **File** tab (*not shown*). Backstage view appears.
2. Click on **Print** (or press **Ctrl+P**).
 - The **Print Preview** appears on the right side of the Print option.
3. Drag the scroll bar to move to any other slide in the presentation.

PRINT HANDOUTS



1. Click on **File** tab (*not shown*). Backstage view appears.
2. Click on **Print** (or press **Ctrl+P**).
3. Under the **Settings** section, click on the down arrow of **Print Layout** section.
4. Click a layout under the **Handouts** section.



- The slide layout changes to Print Preview. In this example, we have chosen **3 slides**.
5. Select the printer if you have multiple printers installed.
 6. Click on **Print**.

PowerPoint prints the presentation in the layout you specified.



Self-Evaluation

CHECKLIST

After reading the chapter, I know these points:

- I know that PowerPoint is used to build a presentation.
- I know that PowerPoint allows users to make blank presentation; they can also use a theme or a template.
- I know that different views in PowerPoint are Normal view, Outline view, Slide Sorter view, Reading view, and Slide Show view.
- I know that we can add text, graphics, and charts to a slide.
- I fully know that layout of a slide can be changed any time.
- I know that Transition is a visual effect that appears while moving from one slide to another.
- I know that Animation effects make the slide show interesting and give it a professional look.

Agree	Disagree
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>



Exercises

A. Tick [✓] the correct answer.

1. A group of slides on any one topic is called a
 a. presentation ☐ b. spreadsheet ☐ c. database ☐
2. The view in which PowerPoint displays the presentation by default is
 a. Outline view ☐ b. Slide view ☐ c. Normal view ☐
3. Miniature slides of the presentation can be seen in view.
 a. Slide Sorter ☐ b. Reading ☐ c. Outline ☐
4. Most slide layouts contain placeholder.
 a. object ☐ b. graphic ☐ c. content ☐
5. is used to organize data in rows and columns.
 a. Table ☐ b. Chart ☐ c. SmartArt ☐
6. appears while moving from one slide to another.
 a. Animation ☐ b. Transition ☐ c. Slide Show ☐

B. Write 'T' for True and 'F' for False statements.

1. There are thousands of PowerPoint templates available online.
2. Theme provides a quick way to create a new presentation.
3. Layout of the slide cannot be changed.
4. You can insert image using the content placeholder.
5. You cannot apply transition in Normal view.

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

C. Fill in the blanks.

1. theme is a built-in design for creating a presentation.
2. You can use graphics to illustrate a process or structure.
3. The default extension of PowerPoint 2016 file is
4. A displays one slide at a time, using the entire screen.

D. Differentiate between the following.

- | | |
|------------------|----------------|
| 1. Theme | Template |
| | |
| | |
| | |
| 2. Print Preview | Print Handouts |
| | |
| | |
| | |

E. Answer the following questions.

1. How many presentation views are available in PowerPoint? Name them.
.....
.....
.....
2. What is content placeholder?
.....
.....
.....
3. What is the benefit of inserting a SmartArt in presentation?
.....
.....
.....
4. What is the use of slide show?
.....
.....

F. Application-based Question

Rahul saw a presentation in his brother's laptop in which there was visual effect applied on every object, that appeared when he moved from one slide to another. Tell him, which effect was used to make that presentation.

.....

Activity Section

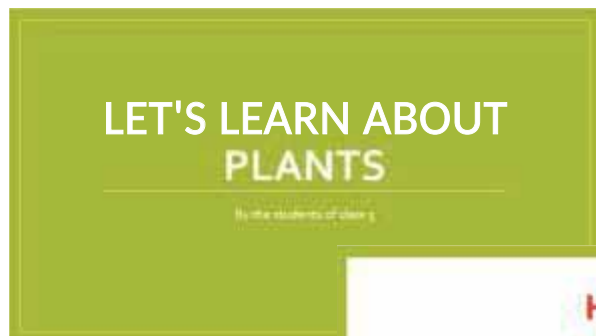
Lab Activity

Create a PowerPoint presentation on 'Plants'.

Subject Integration

Science

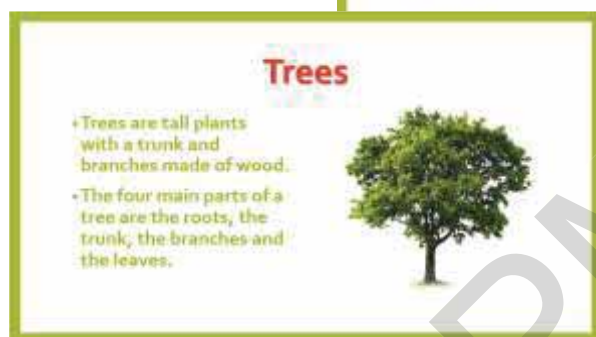
This integration will make the students learn about plants and their types.



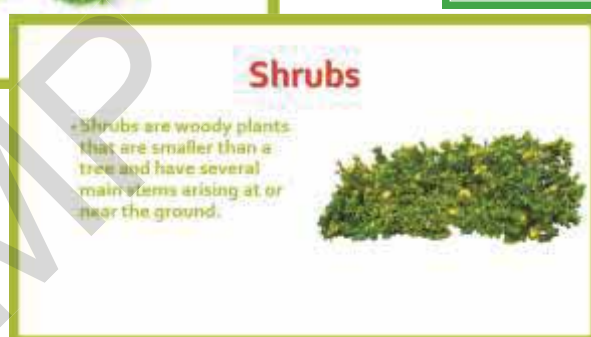
Slide 1



Slide 2



Slide 3



Slide 4

Instructions:

- Start PowerPoint program and open **Blank Presentation**.
- Click on **Design** tab and choose **Basis** theme. The theme is applied to **Slide 1**.
- Create a Title Slide as shown in **Slide 1**.
- Add second slide and change the layout of the slide to the one that includes a placeholder for text and images.
- Create the second slide as shown in **Slide 2**.
- Repeat steps 4 and 5 to create the slides 3 and 4.
- In slides 2, 3, and 4, change the title text in red color, add shading, make it center-aligned and change the font size to 60.
- In slides 2, 3 and 4, change the sub-title text in bold and in 32 font size.
- Add **Cube** transition effect to the presentation and add **Wheel** animation to the title text of all the slides.
- Run the slide show and save it on the desktop with file name 'Plants'.

Note: The pictures shown above may vary in your presentation.

Online Link

To learn more about creating slides in PowerPoint, visit the website:

<https://www.instructables.com/id/How-to-Create-a-PowerPoint-Presentation/>

5

Excel – Introduction

OBJECTIVES

After completing this chapter, you will be able to:

- Understand about spreadsheet program Microsoft Excel.
- Create and save workbook in Excel.
- Add worksheet and switch between them.
- Generate a series using AutoFill.

Hey Friends! You already known about PowerPoint and its presentation. Now, in this chapter you will learn about Excel, which is a spreadsheet program.



Introduction to Microsoft Excel

Microsoft Excel is a powerful **spreadsheet program** that allows you to organize data and complete calculation in rows and columns. These rows and columns are collectively called **worksheet**.

A spreadsheet file is called a **workbook**, which is like a notebook having many individual worksheets. On each worksheet, data is organized vertically in columns and horizontally in rows. By default, workbook contains one worksheet.

Each worksheet of Excel 2016 typically has **16384 columns** and **1048576 rows**. The intersection of a column and a row is called **cell**. A cell is the basic unit of a worksheet in which you enter data. Cells may contain three types of data: **labels (text)**, **values (numbers)**, and **formulas**.

STARTING EXCEL

1. Click on the **Start** icon (or press **Windows**). The Start menu will appear. A list of all the installed apps appears on the left of the Start menu.
2. Scroll down the list and click on **Excel**.



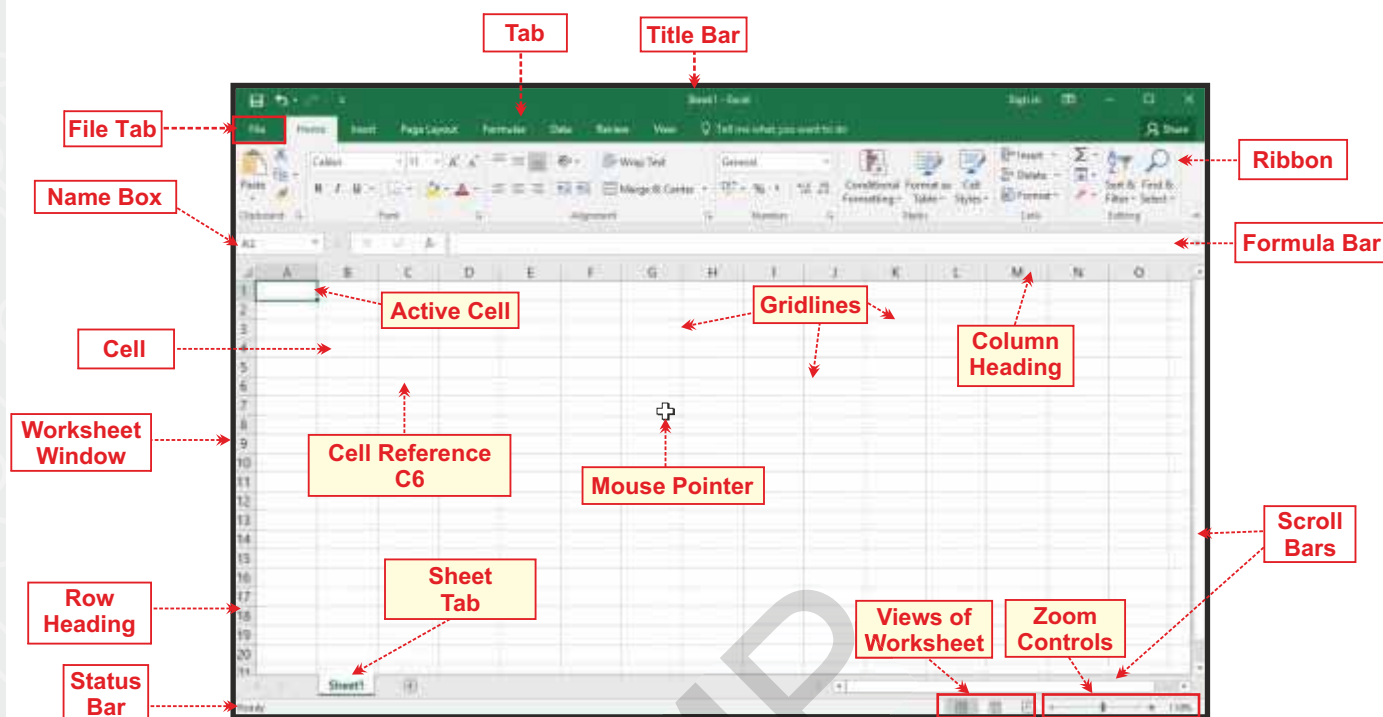
The Excel opens and displays its Start up screen.

3. Click on **Blank workbook**.

An empty workbook titled **Book1** is displayed in the Excel window.

THE COMPONENTS OF EXCEL WINDOW

The Excel 2016 program window displays many components that you can use to create and work with your workbook. Let us study about these components.



Title Bar: It shows the name of the opened workbook file.

File Tab: When you click on File tab, a Backstage view appears, which resembles a menu. In Backstage view, you will find a list of commands such as save, open, etc.

Tab: Each tab provides a set of tools related to an overall task you are likely to be performing in a specific document.

Ribbon: It displays groups of related commands in tabs. Each tab offers shortcut buttons to common tasks.

Formula Bar: It is used to enter and edit formulas, and perform calculations on your worksheet data.

Worksheet Window: The workbook contains sheets called **worksheets**. By default, workbook contains one worksheet. You can also add additional worksheets to it. Each sheet has a name displayed on a Sheet tab at the bottom of the workbook.

Row and Column Heading: A worksheet is organized into a rectangular grid containing columns (vertical) and rows (horizontal). A column letter above the grid, also called the **column heading**, identifies each column. A row number on the left side of the grid, also called the **row heading**, identifies each row.

Cell: A cell is the intersection of each column and row in a worksheet. A cell is the basic unit of a worksheet in which you enter data.

Active Cell: Active cell has a dark border around it. The default active cell in the screen is **A1**.

Cell Reference: A cell is referred to by its **unique address** or **cell reference**, which is the coordinate of the intersecting column and row. To identify a cell, specify the column letter first, followed by the row number. For example, cell reference **C6** refers to the cell located at the intersection of column **C** and row **6**.

Name Box: The cell reference of an active cell is displayed in this box.

Gridlines: The horizontal and vertical lines representing the rows and columns on the worksheet are called **gridlines**. They allow us to see and identify each cell within a worksheet. The gridlines can be turned off, but it is recommended that you leave them on.

Mouse Pointer: The mouse pointer is displayed as a **block plus sign** whenever it is located in a cell on the worksheet. Another common shape of the mouse pointer is the **block arrow**. The mouse pointer turns into a block arrow, whenever you move it outside the worksheet.

Scroll Bars: A worksheet window allows you to view the portion of the worksheet displayed on the screen. Scroll bars are used to move the window around to view remaining portion of the active worksheet.

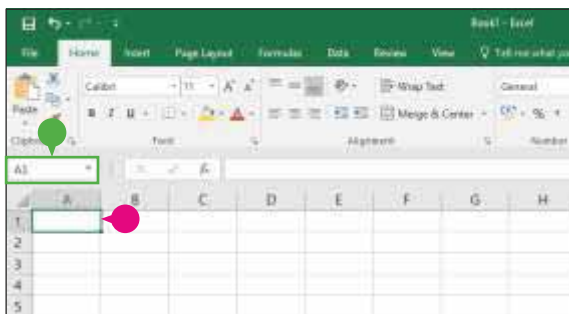
Status Bar: It is located at the bottom of the worksheet window that displays the progress of current tasks and controls for viewing the worksheets.

Views of Worksheet: Excel provides access to three different views of your worksheet – Normal, Page Layout and Page Break Preview.

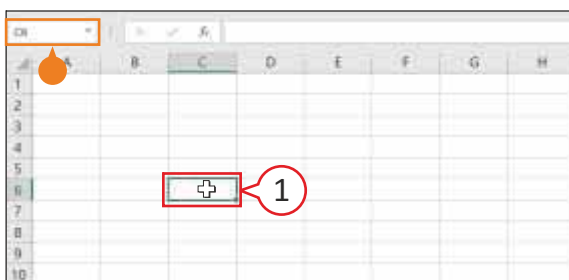
Zoom Controls: They are used to enlarge or reduce the view of worksheet.

CHANGING THE ACTIVE CELL

You can make any cell in your worksheet an active cell. Active cell has a **dark border** around it. You enter data into the active cell.



- The active cell displays a dark border.
- The cell reference for the active cell appears in this area. It identifies the location of each cell in a worksheet and consists of a column letter followed by a row number. (example: A1)

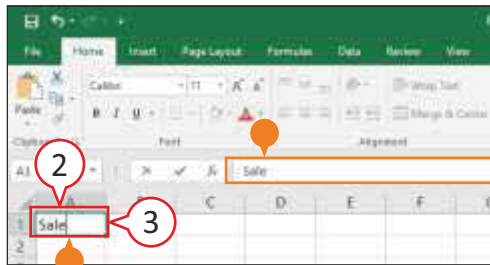


1. Click on the cell you want to make active cell.
- The cell reference (C6) for the new active cell appears in this area.

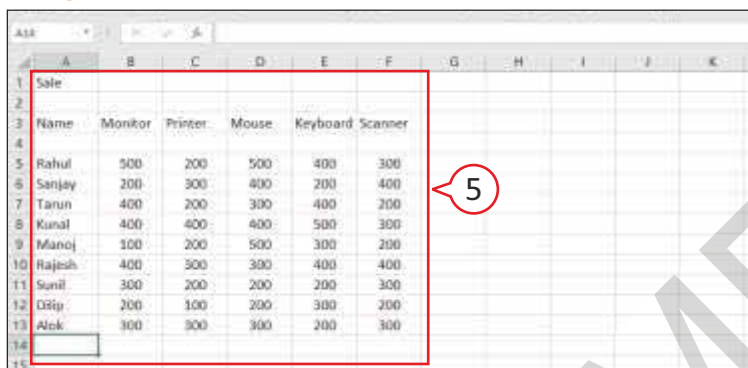
Creating and Saving Worksheet

ENTERING DATA

Entering data is the first step in creating a worksheet. You can enter data in the form of numbers or text. Excel automatically **left-aligns** the text data and **right-aligns** the numbers in a cell.



1. Open a blank worksheet.
 2. Click on the cell where you want to enter data.
 3. Type the data.
- The data you type appears in the **active cell** and in the **Formula bar**.



	A	B	C	D	E	F
1	Sale					
2						
3	Name	Monitor	Printer	Mouse	Keyboard	Scanner
4						
5	Rahul	500	200	500	400	300
6	Sanjay	200	300	400	200	400
7	Tanun	400	200	300	400	200
8	Kunal	400	400	400	500	300
9	Manoj	100	200	500	300	200
10	Hajesh	400	300	300	400	400
11	Sunil	300	200	200	200	300
12	Olip	200	100	200	300	200
13	Alak	300	300	300	200	300
14						
15						

4. Press **Enter** key to enter the data and move down one cell.

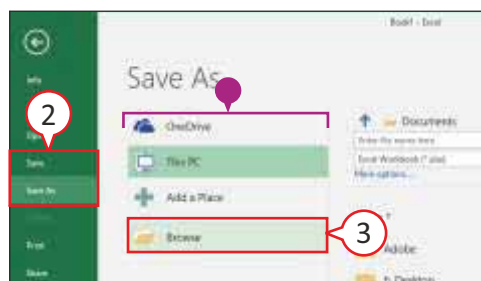
To enter the data and move one cell in any direction, press **Arrow** key from keyboard.

5. Repeat steps 2 to 4 until you finish entering all your data.

SAVING A WORKBOOK

You can save your workbook to reuse it or share it with others. Saved file can be opened and used on other computers also. By default, Excel workbook is saved in the **.xlsx** file extension.

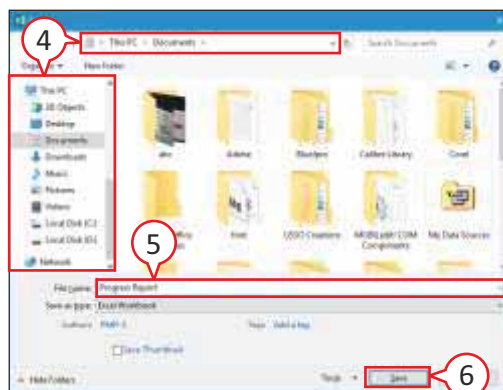
1. Click on **File** tab. **Backstage view** will appear.



2. Click on **Save** or **Save As** option (or press **Ctrl+S**).

- Locations where you can save files appear here. Once you select a location, folders available at that location appear on the right side of the screen.

3. Click on **Browse**.



Save As dialog box will appear.

4. Click on these areas to navigate to the folder in which you want to save the file.

5. Type a name for the file.

6. Click on **Save**.

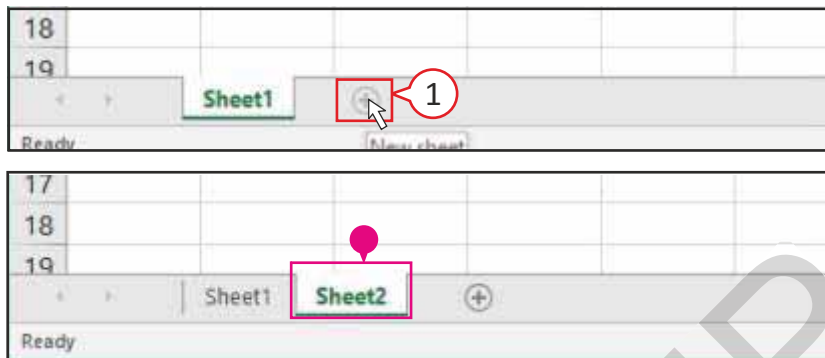
Excel saves the file, and the new file name appears on the Title bar.

Worksheet

The Excel workbook contains sheet called **worksheet**. By default, the Excel 2016 workbook contains one worksheet. You can also add additional worksheets. Each sheet has a name displayed on Sheet tab at the bottom of the workbook.

ADDING A WORKSHEET

A worksheet is quite large. Scrolling to the end of a large worksheet using only **Tab** and **Arrow** keys is quite time-consuming. So, it is a better option for you to add a new worksheet to your workbook.



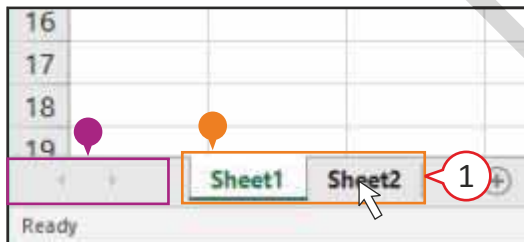
1. Click the **New sheet** icon.

- Excel adds a new worksheet with default worksheet name (Sheet2).

Excel adds a new worksheet immediately after the last worksheet on the right.

SWITCHING BETWEEN WORKSHEETS

You can switch to another worksheet in a workbook by clicking tabs along the bottom of the Spreadsheet window.



- This area displays a tab for each worksheet in your workbook. The displayed worksheet has a white tab.

1. Click on the tab of the worksheet you want to display.

The worksheet you selected will appear. The contents of other worksheets in your workbook remain hidden behind the displayed worksheet.

- If you have added many worksheets in your workbook and the worksheet tabs are not visible, then click on one of these buttons to move through the worksheet tabs:
(◀) **Display previous tab** (▶) **Display next tab**

These buttons only become active when worksheet tabs are not visible.

DELETING A WORKSHEET

You can delete a worksheet you no longer need in your workbook. Always check the sheet contents before deleting to avoid loss of important data. After you delete a worksheet, it gets permanently removed from the workbook file.

1. Right-click on the worksheet tab and click on **Delete**.

If there is no data in the worksheet, Excel deletes it immediately.

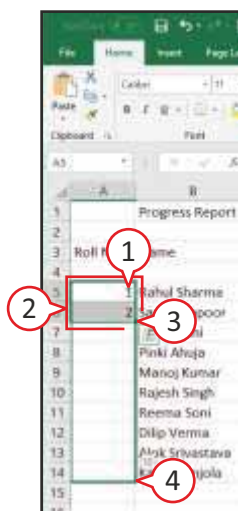
If the worksheet contains any data, Excel prompts you to confirm the deletion.

2. Click on **Delete**. *Excel deletes the worksheet.*

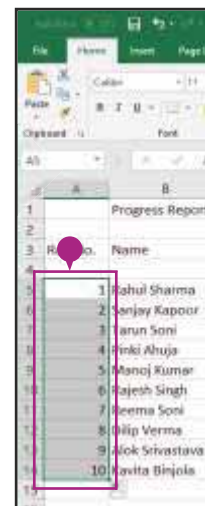
Generating a Series

AutoFill feature of Excel is used to add duplicate entries or a data series to your worksheet cells. You can create your own custom data lists as well as use built-in lists of common entries, such as days of the week, months of the year, and number series. You can complete a series across a row or down a column in a worksheet. It will save your time by completing the text or number series for you.

NUMBER SERIES



1. Enter the first two numbers you want to start the series with.
2. Select both the cells containing the numbers you have entered.
3. Position the mouse pointer over the **bottom right corner** of the last selected cell. The mouse pointer changes to (+).
4. Drag the mouse pointer over the cells you want to include in the series.

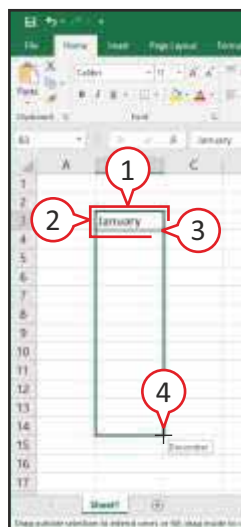


- The cells display the number series automatically.

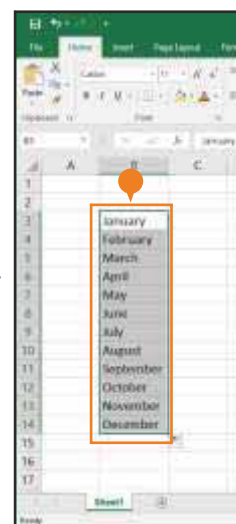
To deselect the cells, click any other cell.

Just like number series, you can also create text and date series in Excel.

TEXT SERIES



1. Enter the text you want to start the series with, e.g. **January**.
2. Click on the cell containing the text you entered.
3. Position the mouse pointer over the **bottom right corner** of the cell. Mouse pointer changes to (+).
4. Drag the mouse pointer (+) over the cells you want to include in the series.



- The cells display the text series automatically.

If Excel cannot determine the text series you want to complete, it will copy the text in the first cell to all the cells you have selected.

To deselect the cells, click any other cell.



Self-Evaluation

CHECKLIST

After reading the chapter, I know these points:

- I know that Microsoft Excel is a powerful spreadsheet program that allows us to organize data.
- I know that the rows and columns in Excel are collectively called worksheet.
- I know that each worksheet of Excel 2016 typically has 16384 columns and 1048576 rows.
- I know that, by default, Excel workbooks are saved with .xlsx file extension.
- I know that AutoFill feature is used to add duplicate entries or a data series to worksheet cells.

Agree	Disagree
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>



Exercises

A. Tick [✓] the correct answer.

1. is a spreadsheet program that organizes data in rows and columns.

a. Excel	<input type="checkbox"/>	b. Word	<input type="checkbox"/>	c. Access	<input type="checkbox"/>
----------	--------------------------	---------	--------------------------	-----------	--------------------------
2. The number of rows in a single worksheet is

a. 1056384	<input type="checkbox"/>	b. 1048576	<input type="checkbox"/>	c. 1084756	<input type="checkbox"/>
------------	--------------------------	------------	--------------------------	------------	--------------------------
3. bar shows the name of the opened workbook file.

a. Formula	<input type="checkbox"/>	b. Title	<input type="checkbox"/>	c. Status	<input type="checkbox"/>
------------	--------------------------	----------	--------------------------	-----------	--------------------------
4. By default, Excel workbooks are saved with file extension.

a. .xls	<input type="checkbox"/>	b. .xlsx	<input type="checkbox"/>	c. .xlss	<input type="checkbox"/>
---------	--------------------------	----------	--------------------------	----------	--------------------------
5. The Excel workbook contains sheets called

a. worksheet	<input type="checkbox"/>	b. workbook	<input type="checkbox"/>	c. sheet tab	<input type="checkbox"/>
--------------	--------------------------	-------------	--------------------------	--------------	--------------------------

B. Write 'T' for True and 'F' for False statements.

1. By default, workbook contains two worksheets in Excel 2016.
2. Mouse pointer is displayed as a block plus sign, whenever it is located in a cell.
3. Formula bar shows the formula we are using in last selected cell.
4. Excel provides access to three different views of the worksheet.
5. Excel automatically left-aligns the text data and right-aligns the numbers in a cell.

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

C. Fill in the blanks.

1. The intersection of a column and a row is called
2. There are columns and rows in a single worksheet.
3. The cell reference of an active cell is displayed in the
4. is used to enter and edit formulas, and perform calculations on worksheet data.
5. A cell in a worksheet has a unique address called

D. Define the following.

1. Gridlines:
2. Mouse Pointer:

E. Differentiate between the following.

Workbook

Worksheet

.....
.....
.....

F. Answer the following questions.

1. What is the use of Microsoft Excel?

.....

.....

2. How do you save a workbook?

.....

.....

3. What is the purpose of generating a series?

.....

.....

G. Application-based Question

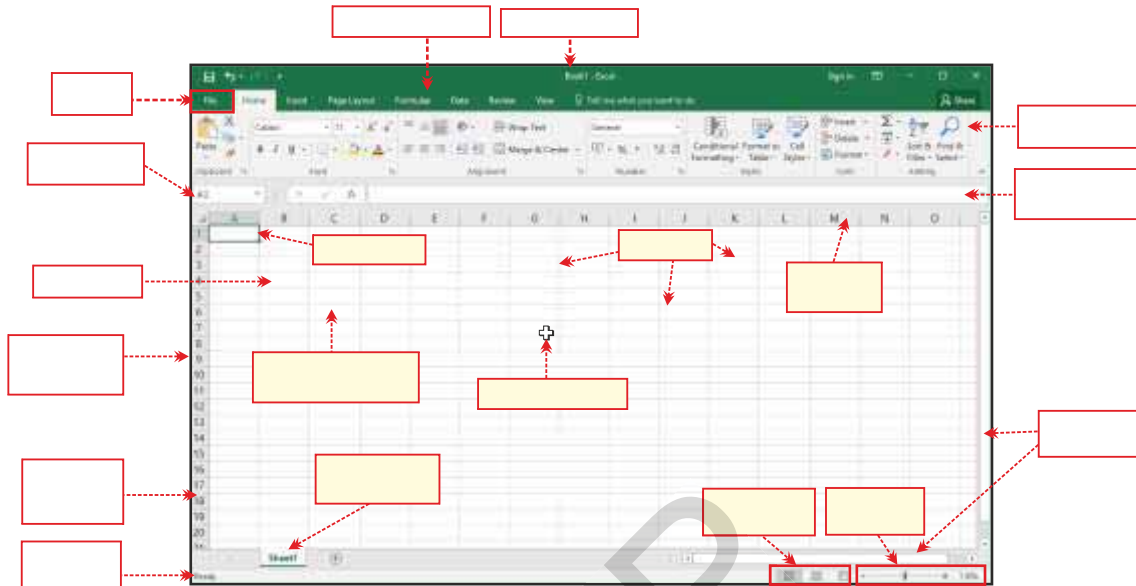
You are making a spreadsheet in Excel. The horizontal and vertical lines representing the rows and columns on the worksheet can be turned off, but it is recommended by your teacher to leave them on. Tell the name of these lines.

.....

Activity Section

Activity Label

Label the following window of Excel 2016.



Lab Activity

Open Excel and create a worksheet of the following records.

Skill Formation

- This activity will enhance the data organization skills of the students.

S.No.	Team	Played	Won	Lost	Tied	NR	Points
1	India	8	7	1	0	0	10
2	Sri Lanka	8	6	1	0	1	9
3	Australia	8	6	1	0	1	9
4	Zimbabwe	8	2	6	0	0	4
5	Canada	8	1	7	0	0	2
6	Pakistan	8	3	5	0	0	0

- Use the AutoFill feature to generate the S.No. column.
- Apply the formatting as shown above and save the workbook as 'Cricket Teams'.

Group Discussion

Divide the students into groups and discuss the topic- 'Benefits of Electronic Spreadsheet Over Manual Sheets'.

Online Link

To learn more about Excel, visit the website:

<https://excelchamps.com/blog/learn-basic-excel/>

Worksheet-I

Chapters 1 - 5

A. Tick [✓] the correct answer.

- The first calculating device was
a. Napier's Bones ☐ b. Abacus ☐ c. Pascaline ☐
- is known as the 'Father of Computer'.
a. Charles Babbage ☐ b. Herman Hollerith ☐ c. Blaise Pascal ☐
- A group of files stored under a common name is called a
a. file ☐ b. cupboard ☐ c. folder ☐
- Deleted file goes into
a. Music Folder ☐ b. Recycle Bin ☐ c. Desktop ☐
- makes the text appear above the regular line of text.
a. Subscript ☐ b. Shadow ☐ c. Superscript ☐
- is used to produce a personalized letter for more than one person.
a. Mail Merge ☐ b. AutoCorrect ☐ c. AutoFormat ☐
- A group of slides on any one topic is called
a. presentation ☐ b. spreadsheet ☐ c. database ☐
- The number of rows in a single worksheet is
a. 1056384 ☐ b. 1048576 ☐ c. 1084756 ☐

B. Write 'T' for True and 'F' for False statements.

- Herman Hollerith invented Tabulating Machine in 1990.
- The third generation of computers used vacuum tubes.
- A file and a folder are represented with the same icon.
- A file can have any number of folders in it.
- Mail Merge is done by merging data document with the data source.
- Layout of a slide cannot be changed.
- By default, workbook contains two worksheets in Excel 2016.

C. Fill in the blanks.

- was invented by Blaise Pascal in 1642.
- The goal of fifth generation is to develop the computers that can respond to language.
- A computer represents files and folder with an
- You can press keys to select all the files of a folder.
- In Word, to select everything in the cell, on it.
- To start Mail Merge, click on tab.
- The default extension of PowerPoint 2016 file is
- In Excel, the intersection of a column and a row is called

D. Define the following.

1. Abacus
2. Microprocessor
3. Folder
4. Thesaurus
5. Mail Merge
6. Template
7. Formula Bar

E. Differentiate between the following.

1. Difference Engine and Analytical Engine
2. Restoring a file and Emptying the Recycle Bin
3. Copying File and Moving File
4. AutoCorrect and AutoFormat
5. Transition and Animation
6. Name Box and Formula Bar

F. Answer the following questions.

1. Name the five key features that Charles Babbage used in Analytical Engine.
2. How many generations of computer are there? Write the time period of each.
3. What is the main goal of fifth generation of computers?
4. What is the use of Recycle Bin?
5. How do we rename a file/folder?
6. What is the use of Format Painter?
7. How many types of Tab settings are available in Word? Name them.
8. How many presentation views are available in PowerPoint? Name them.
9. What is the purpose of generating a series in Excel?

6

Internet – Electronic Mail (E-Mail)

OBJECTIVES

After completing this chapter, you will be able to:

- Understand about e-mail and its programs.
- Learn about the parts of an e-mail message.
- Learn common e-mail terms.
- Create e-mail account and learn e-mail etiquettes.



For hundreds of years, people have been using various means to communicate with each other. Today, e-mail has become one of the most popular sources of communication.

E-mail or Electronic Mail

E-mail is the most popular service of Internet. It enables us to electronically exchange messages with other Internet users, wherever they may be.

Today, almost anyone who has Internet access also has access to e-mail. So, theoretically you can communicate with any Internet user in the world. This versatility has made e-mail one of the most popular Internet services.



HISTORY OF E-MAIL

Ray Tomlinson developed the first e-mail application for the ARPANET in 1971, consisting of a program called **SENDMSG** for sending mail and a program called **READMAIL** for reading mail. In the 1980s, such messages were exchanged between

computers in offices and universities that had been linked together. By 1990, e-mail had gone worldwide, and today our lives without e-mail seem incomplete.



E-MAIL vs POSTAL MAIL

E-MAIL: Switch on the computer and log in to your e-mail ID. Just type the e-mail address, compose your message, and press the Send button. E-mail would be delivered in seconds or in minutes.



POSTAL MAIL: First get a headed notepaper and write your message in it. Find an envelope and paste the stamp on the envelope. Now, go to the post box to drop the letter. Postal mail could take three-four days or even more to be delivered.

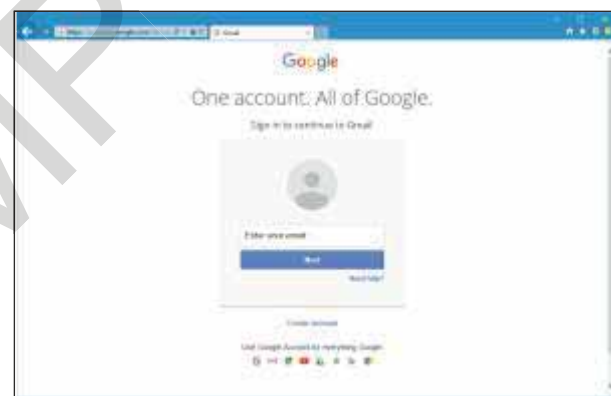
ADVANTAGES OF E-MAIL

- E-mail is **extremely fast**. You can receive an e-mail message in a matter of seconds after it has been sent, irrespective of the geographical location of the sender and the recipient.
- E-mail is **convenient** because you can send it anytime, and your recipient does not need to be at his or her computer or even connected to the Internet.
- You can send a message to a group of people free of cost **quickly** and **easily**.
- You can send documents, graphics, sound, or any kind of file as an **attachment** along with your e-mail.
- E-mail is very **economical** because you do not have to pay to send e-mail messages, no matter where in the world you send them. E-mail saves your money because you can send a message instead of making a long-distance phone call.

E-mail Programs

You can create, send, receive, and manage an e-mail message by using different programs such as Windows Mail, Outlook, Hotmail, and Gmail.

The message can be a simple text or can include an attachment, such as a word processing document, a graphical image, an audio, and/or a video clip.



Gmail

E-MAIL ACCOUNT

You must have an **e-mail account** to use e-mail service. E-mail account is provided by the companies which provide e-mail service such as yahoo.com, gmail.com, etc. This account gives you a unique e-mail address to which others can send messages. Every e-mail account comes with its own e-mail address. An e-mail address is a set of characters that uniquely identifies the location of your Internet mailbox.

E-MAIL ADDRESS

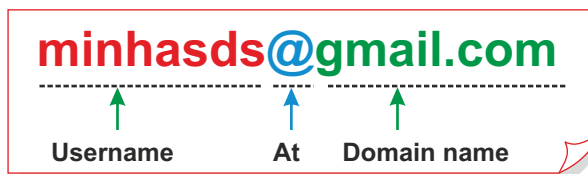
You can send e-mail messages anywhere around the world if you have an **e-mail address**. All e-mail users have their own, unique e-mail addresses. The messages are sent to the correct recipient because of the uniqueness of the address.

Parts of an E-mail Address

An e-mail address is a combination of a **username** and a **domain name** that identifies the user uniquely. The username and domain name are separated by the **@** symbol, which means **at**.

Your **username** is a unique combination of characters that identifies you, and it must differ from other user names located on the same mail server. Your username is sometimes limited to eight characters, and is often a combination of your first and last names, such as the initial of your first name and your last name.

Domain name is separated into two parts by a **period (.)**. The first part is the name of the service provider such as yahoo, gmail, etc. The second part depicts the type of website, for example: **.com** means commercial, **.gov** means government, etc.



An e-mail address cannot use commas, spaces, or brackets. However, hyphen and underscore can be used.

ELEMENTS OF AN E-MAIL PROGRAM

- **Inbox:** Inbox stores all your incoming messages.
- **Outbox:** It stores outgoing messages that have not been sent.
- **New (Compose):** Clicking this button allows to write a new e-mail message to someone.
- **Reply:** This button allows you to send a reply to someone who has sent you an e-mail.
- **Reply to All:** Sometimes, you receive an e-mail of which you are not the only recipient. Pressing this button allows you to reply to all the e-mail addresses from that e-mail.
- **Forward:** This button helps you forward a received message to someone else.
- **Send:** Pressing this button sends the message that you have typed in your e-mail server.
- **Delete:** This button allows you to delete the selected messages.
- **Print:** This button allows you to take a printout of an e-mail if your system is connected to the printer.
- **Sent Mail:** Sent mail stores all the outgoing messages that you have sent.
- **Attachment:** It is used to send a file prepared in any program with your e-mail.

- **Spam/Junk:** E-mail stores messages in this folder that the e-mail program considers to be unsolicited commercial mails.
- **Drafts:** It stores messages that you saved but have not yet finished composing.

Parts of E-mail Message

While sending or receiving an e-mail, you should understand several parts of the message, like **From:**, **To:**, **Cc:**, **Bcc:**, and **Subject**.

From: abc@gmail.com
To: xyz@pmpublishers.in
Cc: aabb@hotmail.com
Bcc: cbhj@yahoo.com
Subject: Computer Books

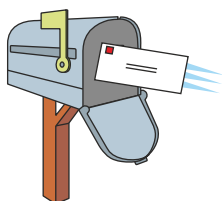
Please send me the details of your computer books.

Thanks
 With Regards,
 Davinder Singh Minhas

FROM

It refers to the person who is sending the e-mail message; his or her e-mail address is written in this section.

From: minhasds@gmail.com

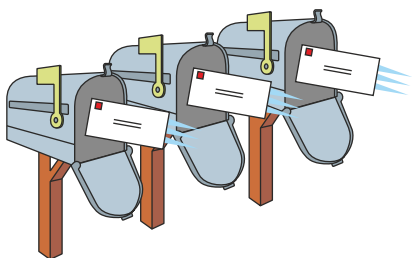


TO

The e-mail address of a person who shall be receiving the e-mail message should be written in this section.

CC

Cc stands for **carbon copy**. It is an exact copy of the message. The e-mail address of a person, who is not directly involved but you would like the message to be sent to him/her too, should be written in this section.

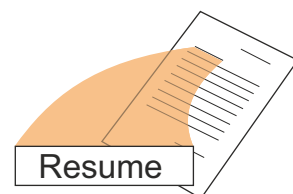


BCC

Bcc stands for **blind carbon copy**. You can take the help of Bcc if you want to send the message to several people, without showing them that others have also received the same message.

SUBJECT

A very short description of your message is written in this section. For example, if you are sending a resume by e-mail, you can write **Resume** in this section.



Common E-mail Terms

There are some e-mail terms that you can use while composing the e-mail messages.

SMILEYS

You can use special characters, called **smileys** or **emoticons**, to express emotions in messages. These characters resemble human faces if you turn them sideways.

Cry	→	:-(
Smile	→	:~)
Laugh	→	:~D
Sad	→	:-(
Wow	→	:~o
Wink	→	:~)

Great!	→	:^D
Screaming	→	:~@
Tongue out	→	:~&
Kissing	→	:*
Angel	→	O:~)
Clowning	→	:*)



ABBREVIATIONS

Abbreviations are commonly used in messages that you can use to save time while typing. Some of the common abbreviations are given alongside.

AISI
AS
ASAP
B4N
BAK
BBiAB
BBL
TC

As I See It
Another Subject
As Soon As Possible
Bye For Now
Back At Keyboard
Be Back In A Bit
Be Back Later
Take Care

SHOUTING

A MESSAGE WRITTEN IN CAPITAL LETTERS IS ANNOYING AND HARD TO READ. THIS IS CALLED **SHOUTING**.

Always use a combination of upper and lower case letters while typing messages.



Please Don't
Shout

BOUNCED MESSAGE

A message that returns to you because it could not reach its destination is called a **bounced message**. A message usually bounces because of mistake in typing an e-mail address. So make sure that you check the receiver's e-mail address for accuracy before you send the message.

SIGNATURE

You can add your unique signature at the end of every message you send through an e-mail program.



ATTACHMENT

Most e-mail messages consist of only text but you can also attach some other types of information, such as a photo, a spreadsheet file or a word processing document to share. When you attach a file and send the message, the file or information is sent along with the e-mail as **attachment**.



Creating an E-mail Account

Electronic mail or e-mail is used to send messages electronically from one place to another. But to use this facility, you need to get **registered** with an e-mail service provider to get your unique e-mail ID.

CREATING AN E-MAIL ACCOUNT IN GMAIL



Following are the steps to create an e-mail account in Gmail.

- Open browser and enter the web address www.gmail.com in the address bar. **Gmail sign in** page will appear on the screen.
- Click on the link '**Create account**' in the 'sign in' page to open Gmail registration form.
- Firstly, enter your **first name** and the **last name** in the form, and then enter the desired **username**.
- If someone else has already taken the same username, a message will appear 'Someone already has this username. Try another.' It shows you the possible alternates from where you can select the new user name.
- Once your username is selected, enter a **password** of minimum 8 characters with a mix of letters, numbers and symbols. Repeat the same password in the box called '**confirm**' password.
- Fill the rest of the entries in the form as they are asked, and finally click the button '**I accept**' or '**Continue to Gmail**'.

If all the entries are correctly added by you, you will get a confirmation for your new account, and now your new e-mail address is **<username>@gmail.com**.

SENDING AND RECEIVING E-MAIL IN GMAIL


After creating the e-mail account, you can share it with your friends and relatives to send you e-mail messages and to read your incoming mails. Follow these steps to check your mails using your login ID and password.

- Open web browser once again, and enter the web address www.gmail.com in the address box.
- Click on **Go** button, or press **Enter** key to open **Gmail sign in** page.
- Click in the **Username** box, and type your user ID. Make sure that the letters are typed in the same case as they were typed while creating the account.
- Click on **Next**.
- Enter the **password** in the **Password** text box, which appears in the form of black dots or asterisks.

- Click **Sign in** button to open your mail box.
- It will show you the list of all your incoming mails. You can now click any one of them to open and read the contents of that mail.
- Click **Inbox** button for coming back to your mail box.
- To send an e-mail, click **Compose** button to open compose mail page.
- In the **To:** box, write the e-mail address of your friend, relative or the one to whom you want to send the mail. Write the **subject** and then type the **message** in the space provided.
- Click on **Send** button. Your mail will be sent to the recipient instantly.
- Close your mail box by clicking the **Sign out** button.

ATTACHING A FILE IN GMAIL

Most e-mail messages consist only of text. But you may attach other types of files like photo, spreadsheet file, word processing document, etc. in your mail. When you attach the file and send the message, the file is sent along with the e-mail.

- Click the **Compose** button to open New Message window.
- In the **To:** box, write the e-mail address of the one to whom you want to send the mail. Write the **subject** and the **message** in the space provided.
- Click on **Attach Files** () button. The **Open** dialog box appears.
- Click the file you want to attach and then click on **Open**. Gmail attaches the file to the message.
- Click on **Send** button.
- Your mail will be sent to the recipient with the attachment.

E-mail Etiquettes

While sending a message through e-mail, we must follow certain etiquettes.

- Your message should have a subject line that conveys its content clearly.
- The e-mail message should not be in capital letters.
- You may use **smileys** for casual comments and **abbreviations** for phrases.
- Take care of what you write in an e-mail message as it is not always private and can mistakenly be sent to the wrong person.
- Open only those email attachments that come from trusted sources.
- Do not click on web links sent by someone you do not know.
- If you use a public computer for e-mail, make sure to sign out.
- If you suspect an email to be **spam**, do not open or respond; just delete it.



Self-Evaluation

CHECKLIST

Agree

Disagree

After reading the chapter, I know these points:

- I know that an e-mail enables us to electronically exchange messages with other users.
- I know that an e-mail address is a combination of a username and a domain name.
- I know that a message written in capital letters is called shouting.
- I know that we can send file and photos as an attachment with the e-mail.
- I know that we should follow certain etiquettes while sending an e-mail message.

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>



Exercises

A. Tick [✓] the correct answer.

1. First e-mail application was developed by
 - a. Ray Tomlinson ☐
 - b. Sabeer Bhatia ☐
 - c. Charles Babbage ☐
2. Domain name is separated into two parts by a
 - a. comma (,) ☐
 - b. period (.) ☐
 - c. colon (:) ☐
3. @ symbol used in an e-mail address is pronounced as
 - a. at ☐
 - b. as ☐
 - c. all ☐
4. The message written in capital letters is called
 - a. bounced ☐
 - b. shouting ☐
 - c. abbreviation ☐
5. button sends a message that we have already received from someone.
 - a. Forward ☐
 - b. Move ☐
 - c. Reply ☐

B. Write 'T' for True and 'F' for False statements.

1. We can send only text files as an attachment with our e-mail.
2. We cannot use commas, spaces, or brackets in an e-mail address.
3. Password appears in the form of bullets or asterisks.
4. We can receive the e-mail message only if our computer is on.
5. 'From' section contains address of person who is writing the e-mail.
6. We should open e-mail attachment only from a trusted source.

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

C. Fill in the blanks.

1. An is a unique address of each e-mail user.
2. A username is sometimes limited to characters.
3. Smileys are also called
4. can save time while typing the e-mail message.
5. section contains a very short description of our e-mail message.

D. Differentiate between the following.

- | | |
|-----------|-------------|
| 1. E-mail | Postal mail |
| | |
| | |
| | |
| 2. To | From |
| | |
| | |
| | |
| 3. Reply | Forward |
| | |
| | |
| | |

E. Answer the following questions.

1. What are the advantages of an e-mail?
.....
.....
2. What is the purpose of attachment in an email?
.....
.....
3. Describe some etiquettes of writing a good e-mail.
.....
.....
.....

F. Application-based Question

Ram needs to send his photograph urgently to his father who is out of station for some work. But he does not know which feature is used to send the photograph through e-mail. Help him.

.....

Activity Section

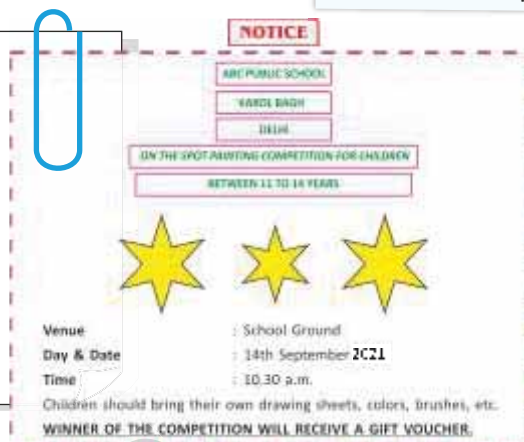
Lab Activity

Send e-mail message with an attachment using an e-mail program.

Skill Formation

This activity will make students learn about email correspondence.

To: abc@gmail.in
Cc: admin@hotmail.com
Bcc: info@yahoo.com
Subject: Painting Competition
Please find the details of next painting competition in the school.
Thanks
With Regards,
Davinder Singh Minhas



The following steps will guide you through the process of sending an attachment.

- In MS-Word, create a **Notice** of Painting Competition and save it on the desktop.
- Run any email program on your computer.
- Locate and then click on the compose button to compose a new email message.
- Type the recipient's email address in the **To:** text box. If you are sending the email message to multiple recipients, separate each email address with a comma (,).
- If you would like to send a carbon copy of the email message to one or more people, type their email address(es) in the **Cc:** text box.
- To send a copy of the email message to someone whose email address you wish to hide from the other recipients, enter his/her email address in the **Bcc:** text box.
- Enter a descriptive subject in the **Subject:** text box.
- Type the body text of the email in the appropriate space.
- Click on **Attach Files** (📎) button. The **Open** dialog box appears. Navigate the file you have previously created and saved on the desktop.
- Click on the file and then click on **Open**.
- Email program attaches the file to the message.
- Click on the **Send** button, which sends the email message to everyone listed in the **To**, **Cc**, and **Bcc** text boxes.

Online Link

To learn about advantages and disadvantages of e-mail, visit the website:

<https://www.toppr.com/guides/business-communication-and-ethics/e-correspondence/advantages-and-disadvantages-of-email/>

Programming Basics

OBJECTIVES

After completing this chapter, you will be able to:

- Understand the concept of computer programming language.
- Learn about making algorithm and flowchart.
- Understand about the categories of computer languages.
- Understand the meaning and examples of language processor.

Dear Friends, you all know that to communicate with each other, you need some language. Similarly, to communicate with a computer, you need a Computer Language. Let us learn about it.



Introduction to Programming

Humans can understand a variety of spoken languages (English, Hindi, Punjabi, etc.), whereas computers understand only one language, that is, the **Machine Language**.

Let us understand it in the following manner:

If someone asks you to add $8 + 5$, you will quickly add and give the answer 13. But if the same question is asked to the computer, it will not be able to answer this.

This is because your verbal instruction is not understood by the computer. It can only understand the instructions given in computer language. The set of instructions written in a language which a computer can understand is called a **program**.

Whenever you have to solve any problem or do any work, you have to follow a **step-by-step procedure** so that you can get the desired outcome. In the same way, a computer also carries out its functions in a step-by-step procedure to give you accurate results. Basically, a computer program involves three steps:

1. **Algorithm:** Creating an algorithm
2. **Flowchart:** Making a flowchart
3. **Program:** Converting a flowchart into a program

Algorithm

An **Algorithm** is a step-by-step procedure to carry out any particular task, such as a mathematical or a logical problem.

Let us understand it by an example. What steps would you follow to buy a shirt?
The possible steps are as follows:

- Step 1: Take money and go to the garments shop in the market.
 - Step 2: Tell the shopkeeper which color and style of shirt you want.
 - Step 3: Choose and finalize the desired shirt.
 - Step 4: Pay money to the shopkeeper.
 - Step 5: Take the balance amount (if any) from the shopkeeper.
- Finally, you get the desired result, i.e. a new shirt.

ONE MORE EXAMPLE OF ALGORITHM

An Algorithm To Add Any Two Numbers.

- Step 1 : Start
- Step 2 : Take two numbers
- Step 3 : Add the numbers
- Step 4 : Print the result
- Step 5 : Stop



Flowchart

A **flowchart** is a diagrammatic representation of a problem-solving process, i.e. algorithm. It is called a flowchart as it charts the flow of a program. The direction of flow in a flowchart is always from top to bottom or left to right.

Herman Goldstine and **John von Neumann** developed the flowchart (originally a diagram) in 1946 to plan computer programs.

In a flowchart, each operation is represented using specific **geometrical symbols**. These symbols are connected to each other by arrows to show the operations.

Following are some basic symbols that are used while making a flowchart.

START/STOP BOX

It is an **oval-shaped** symbol used at the beginning and at the end of the flowchart. It shows the starting and ending of a flowchart.



INPUT/OUTPUT BOX

It is a **parallelogram-shaped** box that is used to indicate the input and output of a program, i.e. the instructions related to the input and getting the result.



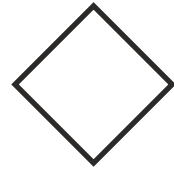
PROCESSING BOX

It is a **rectangle-shaped** box that is used to show the processing part of the flowchart, like calculation.



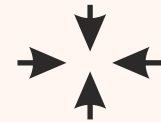
DECISION BOX

It is a **rhombus-shaped** box that is used to check the conditions, display comparisons, and take the decisions to solve the problems.



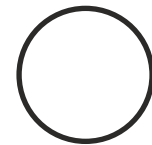
FLOW LINES

These are the **arrow lines** used to connect the different shapes and show the flow of logic in a flowchart.



CONNECTORS

It is **circle-shaped** symbol that is used to join the parts of a flowchart.



ADVANTAGES OF FLOWCHART

1. Flowchart helps in solving a problem or carry out procedure in a more systematic way.
2. It is a better way of communicating the logic of a system.
3. It acts as a guide during the program development phase.
4. It helps in finding out errors.

DISADVANTAGES OF FLOWCHART

1. Sometimes, the flowchart becomes complex if the program logic is long.
2. If you want to change something in the flowchart, you have to redraw it all over again.

RULES FOR MAKING A FLOWCHART

These are the rules that should be followed while making a flowchart.

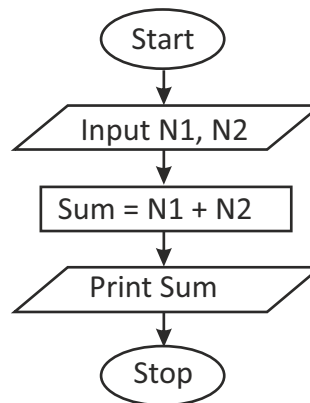
- The flowchart should be clear, neat, and easy to follow.
- Only one flow line should be used in conjunction with terminal symbol.
- The direction of flow, in a flowchart, should be from top to bottom or from left to right.
- Avoid the intersection of flow lines if you want to make it more effective and clearer.
- If the flowchart becomes complex, it is better to use connector symbols to reduce the number of flow lines.

Converting an Algorithm into a Flowchart for Adding Two Numbers

ALGORITHM

- Step 1: Start
- Step 2: Take two numbers
- Step 3: Add the numbers
- Step 4: Print the result
- Step 5: Stop

FLOWCHART



Start: The beginning of flowchart.

Input: Give two numbers to computer.

Processing: Give instruction to calculate.

Output: The result is displayed.

Stop: The end of flowchart.

Program

Normally, an algorithm is first represented as a flowchart, and the flowchart is then expressed in a programming language to prepare a **computer program**. Preparing a computer program is the last step in solving a problem which is written in the **computer language** to get the desired result. Let us study about it.

COMPUTER LANGUAGE

A computer understands the instructions given to it in its language, that is, **machine language**. This language uses binary digits — **0** and **1**. But it is difficult for the programmers to write their programs directly in these digits. Therefore, other computer languages have been developed in which writing programs have become easier.

A **computer language**, also known as programming language, is a special language understood by the computers. It consists of a set of words, symbols, and codes that is used to write a computer program. A **program** is a set of instructions given to a computer to get a particular task done. The process of writing a program is called **programming**. The people who write programs are called **programmers**.

However, a computer cannot understand these languages directly. So, some special software programs have also been developed which translate the programs written in other languages into machine language.

Categories of Computer Languages

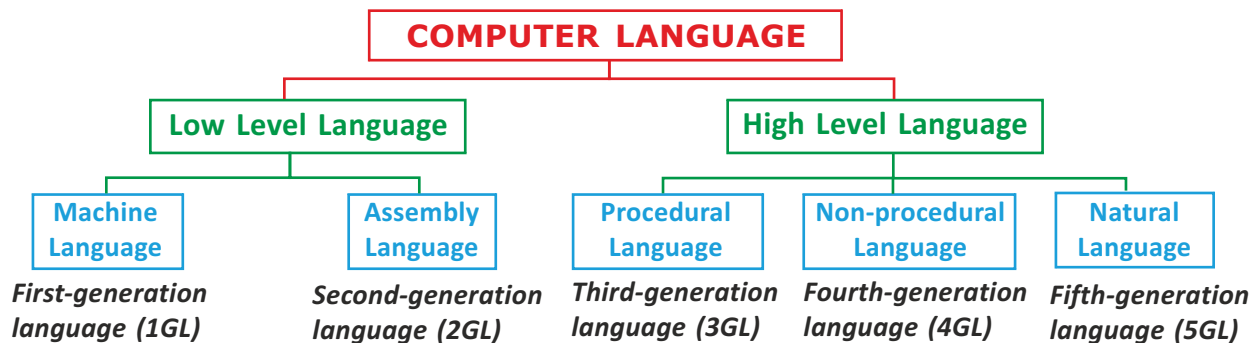
There are a number of computer languages available nowadays. Computer languages are classified into two major categories:

1. Low Level Language (LLL)

- (i) Machine Language
- (ii) Assembly Language

2. High Level Language (HLL)

- (i) Procedural Language
- (ii) Non-procedural Language
- (iii) Natural Language



LOW LEVEL LANGUAGE

Low level languages are written to run on a particular computer and hence, they cannot be easily used on other computers.

Two main categories of low level languages are:

Machine Language

A **machine language**, also called **first-generation language**, is a language directly understood by a computer without any translation. It refers to **0s** and **1s** that a computer can understand as instructions. Due to this reason, it is also called **Low Level Language (LLL)**.

Limitations of Machine Language

1. Machine language programs run only on the computer for which they have been developed, i.e. they are machine-dependent.
2. Machine language programs are not portable to other computers.

Assembly Language

Assembly language, also called **second-generation language**, is also a low-level programming language.

An assembly language uses letters and symbols instead of using numbers (1s and 0s). A program written in assembly language uses short sequence of letters called **mnemonic codes** like ADD for addition, CMP for comparison, LDA for loading, and MUL for multiplying.

Assembly language program is a **source program** which must be translated into machine language before a computer can understand it.

An **assembler** is a program used to translate assembly language into machine language so that the computer can understand it.



HIGH LEVEL LANGUAGE

A **high level language** (HLL) has instructions which are almost similar to English language. It is user-friendly and resembles the language that we use. It is easier to understand and write a program in this language. HLL is machine-independent. A program written in HLL can be run on almost all the computers, without any change.

Interpreter and **compiler** are the two programs used to translate high level language into machine language so that the computer can understand it.



Three main categories of high-level languages are:

Procedural Language

A **procedural language** is also called the **third-generation language (3GL)**. In this language, the programmer writes instructions that tell the computer what to accomplish and how to do it. This language uses English-like words like ADD for addition or PRINT to print, to make it easy for the programmer to write a program. Many third-generation languages also use arithmetic operators, such as '*' for multiplication and '+' for addition.

The **3GL** is also called the **source program** which must be translated into machine language before the computer can understand it. A **compiler** or an **interpreter** is used to perform the translation for third-generation languages. C, BASIC, COBOL, and FORTRAN are the examples of 3GL.

Non-procedural Language

A **non-procedural language** is also called the **fourth-generation language (4GL)**. In this language, the programmer only specifies what the program should accomplish without explaining how. It uses English-like statements.

In fact, 4GLs are so easy to make that users with very little programming knowledge can also develop programs easily. It is also a **source program**, which must be translated into machine language with the help of a compiler or an interpreter. Visual Basic, JAVA, etc. are the examples of 4GL.

Natural Language

A **natural language**, sometimes called the **fifth-generation language (5GL)**, is a type of query language that allows the user to enter requests that resemble human speech. Natural languages are often associated with **expert systems** and **Artificial Intelligence**. These systems are popular in the medical field.

Language Processor

A **language processor** is a software that converts source program into machine language because a computer does not understand the program written in HLL or assembly language; it understands only machine language. **Compiler** and **interpreter** are the examples of language processors.

COMPILER: A compiler converts the entire HLL program into machine language at once and also displays errors for the whole program together.

INTERPRETER: Interpreter converts one line of program at a time. It displays error of one line at a time and goes to the next line only after correction of that error.



Self-Evaluation

CHECKLIST

After reading the chapter, I know these points:

- I know that algorithm is a step-by-step procedure to solve any task.
- I know that a flowchart is a diagrammatical representation of algorithm.
- I know that there are two categories of programming languages.
- I know that language processor is used for converting source program into machine language.

Agree	Disagree
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>



Exercises

A. Tick [✓] the correct answer.

- The direction of flow in any flowchart should be from
a. top to bottom ☐ b. bottom to top ☐ c. right to left ☐
- The symbol used to indicate input and output of a program is
a. rectangle ☐ b. parallelogram ☐ c. circle ☐
- language is directly understood by computer.
a. Machine ☐ b. High level ☐ c. Assembly ☐
- language is machine-independent language.
a. Low level ☐ b. Assembly ☐ c. High level ☐

B. Write 'T' for True and 'F' for False statements.

- An algorithm is a graphical representation of a flowchart.
- The flowchart helps in finding out errors.
- Decision box is a rectangular box used for doing calculations.
- The people who write computer programs are called users.
- An assembly language does not need a translator.

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

C. Fill in the blanks.

1. Flowchart was developed by and
2. The rhombus-shaped symbol is known as
3. Natural language is sometimes called generation language.
4. A computer only understands digits directly.
5. converts the assembly language program into machine language.

D. Name the following flowchart symbols.

1. 
2. 
3. 
4. 

E. Define the following.

1. Machine Language:
2. Assembly Language:

F. Differentiate between the following.

- | Compiler | Interpreter |
|----------|-------------|
| | |
| | |

G. Answer the following questions.

1. What do you mean by flowchart?
.....
.....
2. What do you mean by computer language?
.....
.....
3. What do you understand by HLL?
.....
.....

H. Application-based Question

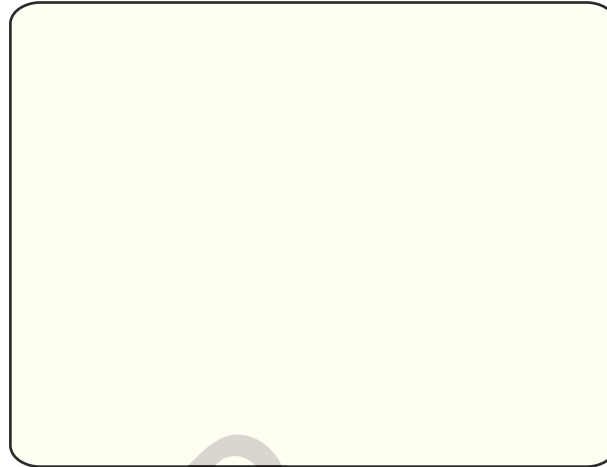
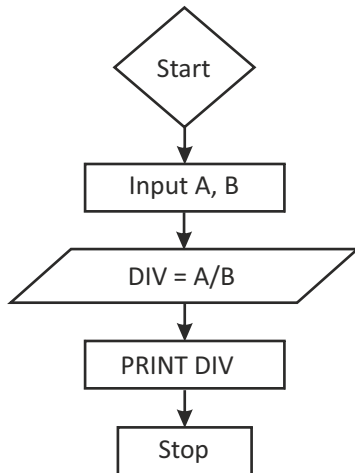
Several years ago, a programmer, who is no longer with the company, wrote a program for company using a high-level language. Now, his colleague is working on the same program and has discovered that the program is not working. By which software can he detect the errors? Help him.

.....

Activity Section

Activity Redraw

Redraw the following flowchart after correcting the symbols.



Lab Activity

Open Word, type the following algorithm to find the area of rectangle and draw the flowchart by using correct symbols.

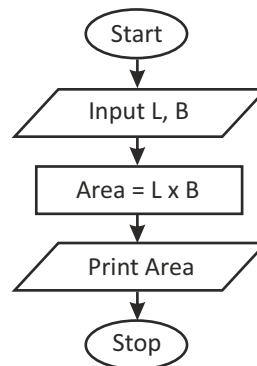
ALGORITHM

- Step 1: Start
- Step 2: Take two different sides
- Step 3: Calculate area by multiplying the sides
- Step 4: Print the area
- Step 5: Stop

Skill Formation

- This activity aids in enhancing the problem-solving skills of students.

FLOWCHART



Group Discussion

Divide the students into two groups and discuss the topic– 'Algorithm and Flowchart Make the Computer Programming Easier'.

Online Link

To learn more about programming basics, visit the website:

<https://www.edrawsoft.com/en/explain-algorithm-flowchart.html>

Scratch 3 Programming

OBJECTIVES

After completing this chapter, you will be able to:

- Understand about Scratch 3 and its Data types.
- Learn about mathematical operators.
- Understand the meaning of conditional programming.
- Understand the use of repeat command.
- Learn about broadcasting and receiving messages.



Scratch 3

Scratch 3 is a free, fun-based visual programming language. This computer language is fairly easy for anyone to learn with fun. All commands (blocks) are on the screen; you move blocks into a set order and then configure them to create interactive stories, games, and animations.



Data Types

All computer applications require some sort of **data** with which to work as they execute. Like all computer programs, Scratch applications need to be able to process and store data.

Scratch lets you work with a number of different types of data. Each of these different types of data are String, Boolean, Integer and Real.

A **string** is a piece of text data.


Boolean represents data that has an assigned value of either True or False.

An **integer** (sometimes referred to as a whole number) is a numeric value that does not include a decimal point.

A **real** number is a number that includes a decimal.

Variables

Variables are the names you give to computer memory locations which are used to store value (data/information) in a computer program. For example, you want to store two values 10 and 20 in your program and at a later stage, you want to use these two values.

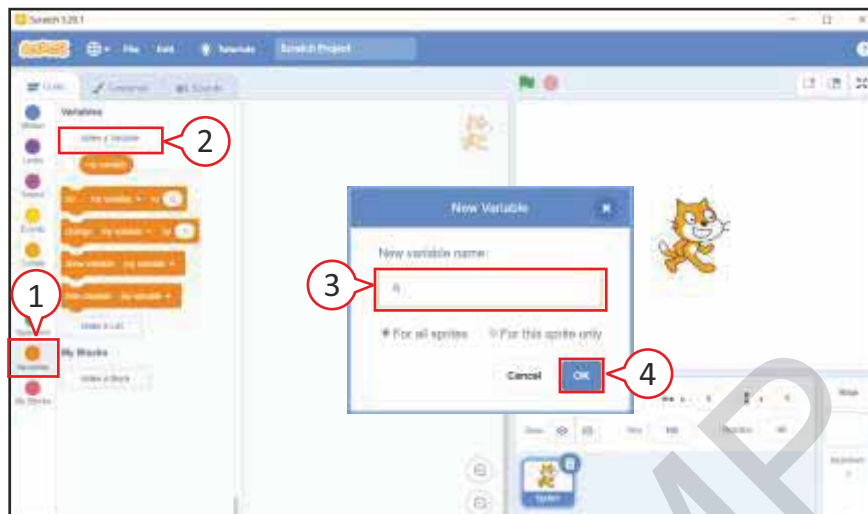
In Scratch, variables are represented with an **elongated block** [] which is labeled by the programmer. A variable is a changeable value recorded in the Scratch memory. Variable can store one value at a time. In Scratch, variables can only store numeric data. They cannot store string or Boolean data.

CREATING SCRATCH VARIABLES

In order to store, modify, and retrieve data in a Scratch application, you need to create variables.

To work with variables within your Scratch applications, you must first define and add them to your application projects.

Creating variable is also called **defining variable**. In Scratch, you can create a variable for a selected sprite or for all sprites.



1. Click on **Variables** in the blocks palette.

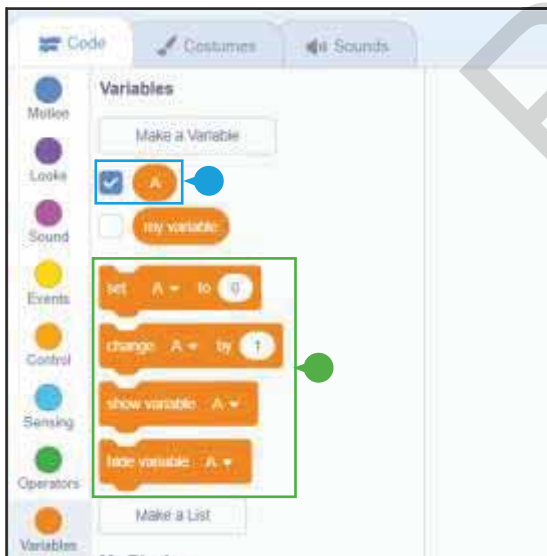
2. Click on **Make a Variable**.

New Variable dialog box appears.

3. Type a **name** (A) for the variable.

4. Click on **OK**.

Note: Variable name can include letters, numbers, special characters and blank spaces.



• Scratch creates the variables.

• Scratch also creates four code blocks under the variable block.

- **First** one is used to assign a variable value.

- **Second** one is used to increment variable value.

- **Third** one is used to retrieve variable value.

- **Fourth** one is used to hide the variable.

Mathematical Operators

Operator block provides you many operators which are used to add, subtract, multiply and divide numeric data. These blocks are green in color. Working with these blocks is very easy because all the blocks clearly identify their uses.



ADDITION OF TWO NUMBERS

In the programming language, we assign variable to calculate the addition.
For example:

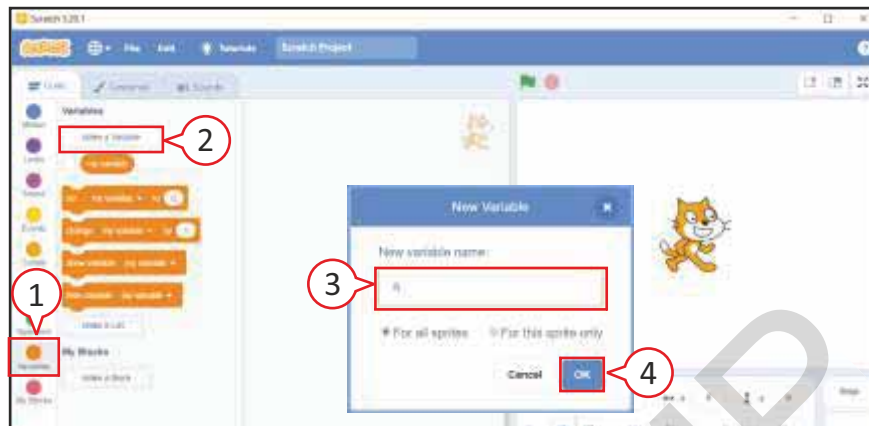
A is the **first** number variable; assign the number to A like **A=25**.

B is the **second** number variable; assign the number to B like **B=30**.

C is the **third** number variable and is used to calculate the addition like **C=A+B**.

Then, finally display the output of variable C.

Now, we will do the same calculation in Scratch.



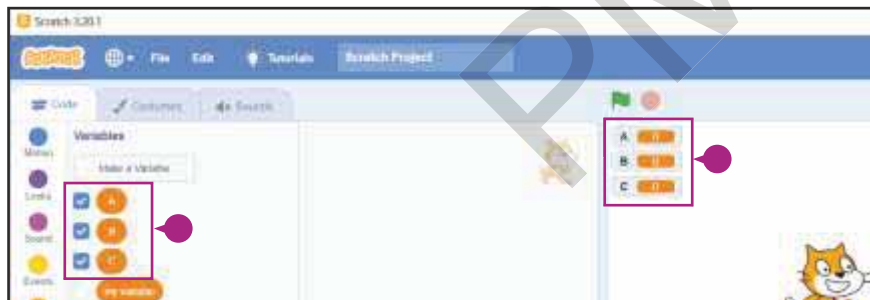
1. Click on **Variables** in the blocks palette.
2. Click on **Make a Variable**.

New Variable dialog box appears.

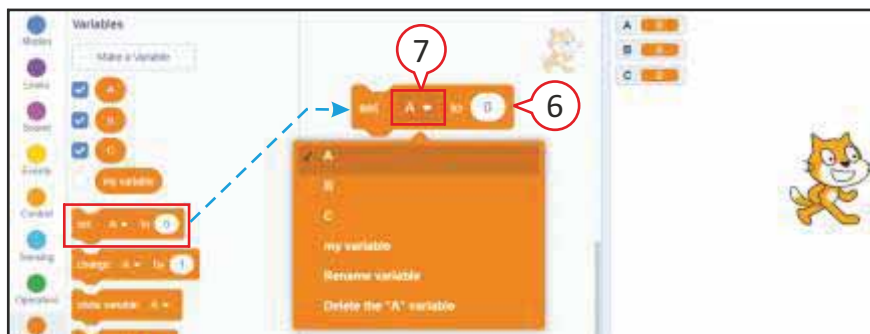
3. Type a **name** (A) for the variable.
4. Click **OK**.

Scratch creates the **A** variable.

5. Repeat steps 1 to 4 and create two more variables **B** and **C**.



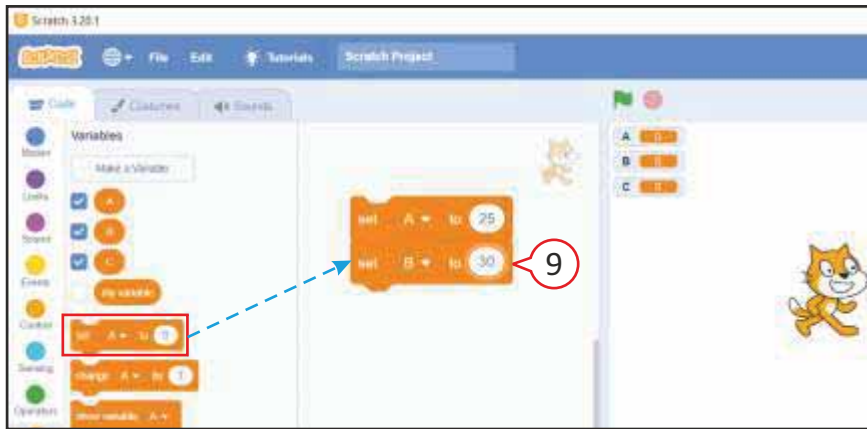
- After creating all the three variables A, B and C, these variables appear in **Variables** panel and on the stage.



6. Drag the **Set** command to Script area.
7. Click on the down arrow and select variable **A** from the list.

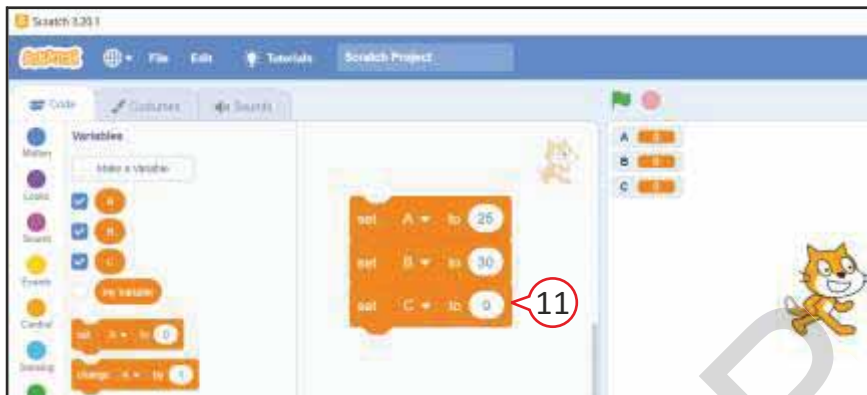


8. Type the value of A (25).

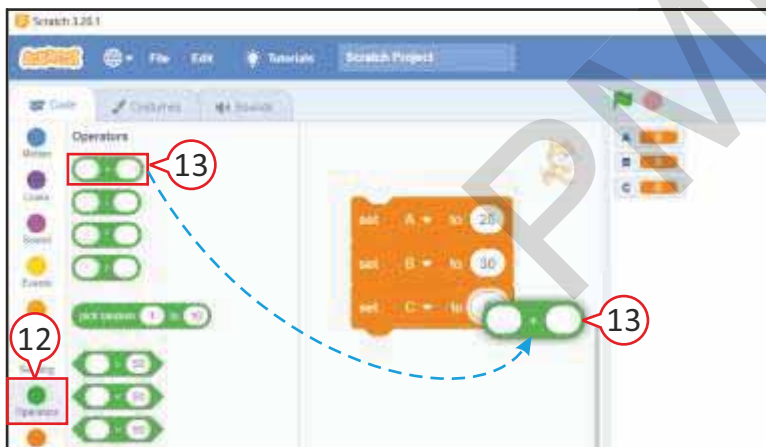


9. Drag the **Set** command to Script area and paste it under A.

10. Repeat steps 7 to 8 and set the value of B as 30.



11. Repeat the previous steps and set the value of C as sum of A and B.



12. Click on **Operators**.

All Operator blocks appear.

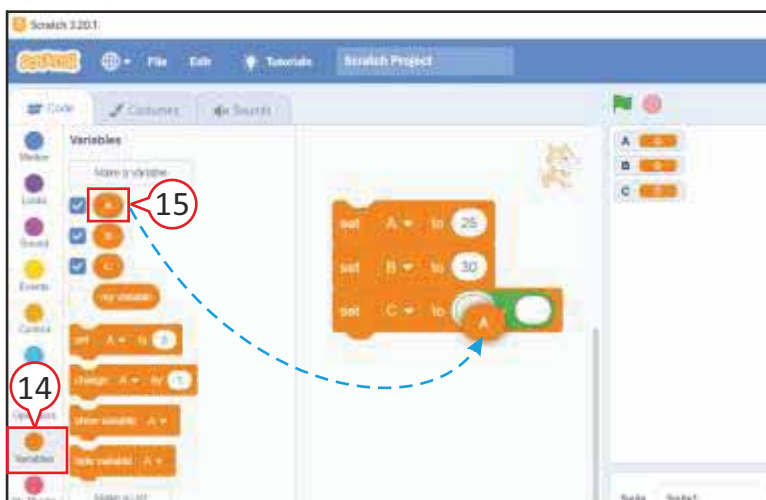
13. Drag the first operator to fit into the value slot of C variable.

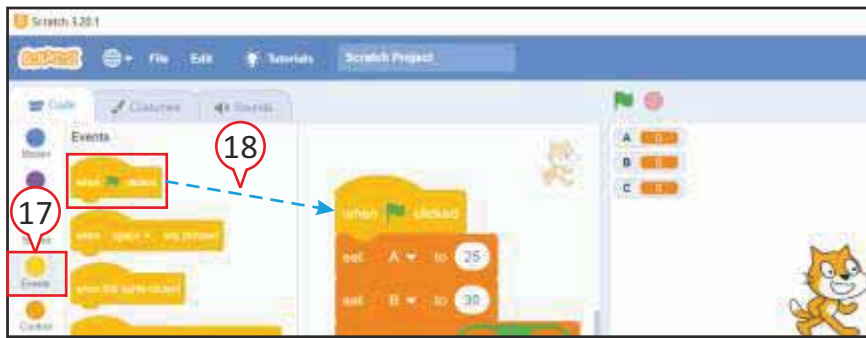


14. Click on **Variables**.

15. Drag variable A from **Variables** menu to fit into the slot of operator.

16. Repeat step 15 and drag variable B from **Variables** menu to fit into the second slot of operator.





17. Click on **Events**.

18. Drag the **when flag** [] **clicked** block and put it at the top of the script.



19. Click on the **Flag** [].

- The script starts code blocks and shows the calculation in the variable area on the stage.



$$A + B = C$$

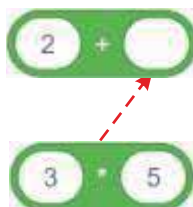
$$25 + 30 = 55$$

FOR MATHEMATICAL EXPRESSION

In all green-colored mathematical operators, rounded ends represent parentheses.



For example, to build a mathematical expression $2 + (3 \times 5)$,



Drag it to fit into the slot.



The result of $2 + (3 \times 5)$ is 17.

Program to Calculate the Average of Four Numbers

Create six variables: **A**, **B**, **C**, **D**, **ADD** and **AVG**.

A is the first variable: **A = 50**

B is the second variable: **B = 60**

C is the third variable: **C = 70**

D is the fourth variable: **D = 80**

ADD is the fifth variable: **ADD = A+B+C+D**

AVG is the sixth variable: **AVG = ADD / 4**

Code Blocks



Output



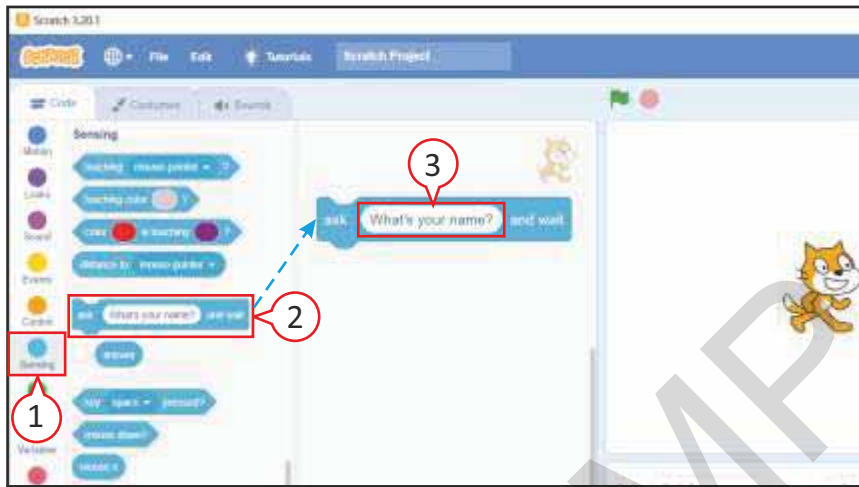
DATA INPUT BY USER

Sensing menu provides you many blocks which are used to get information from the users.

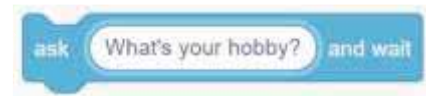
Ask () and wait block asks the question and stores the answer as a keyboard input in **answers** block.

EXAMPLE

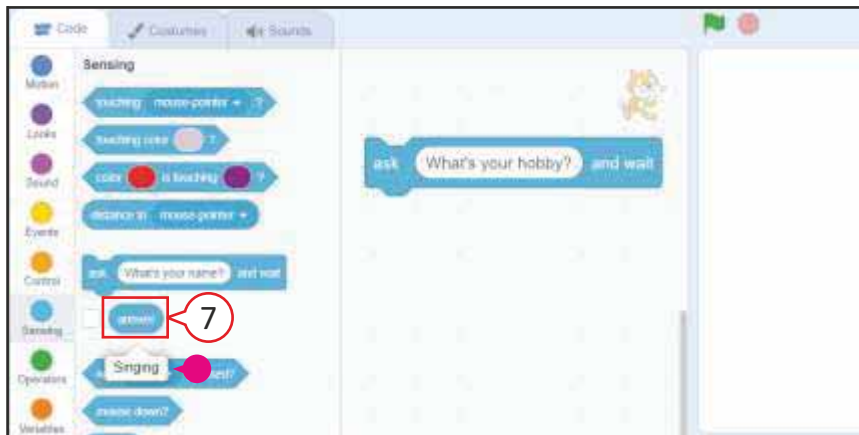
Write a script which asks user for his/her hobby. User will type the hobby, program stores the output in answer block and displays in the script.



1. Click on **Sensing**.
2. Drag **Ask () and wait** block to Script area.
3. Replace the text with **What's your hobby?**



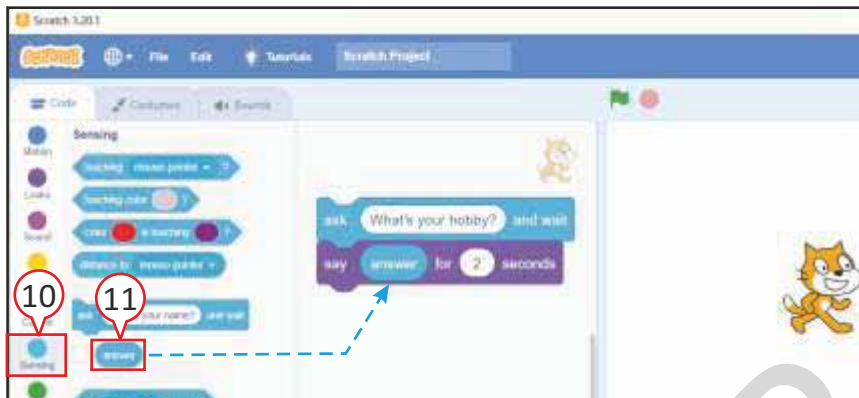
4. Click on the **Script**.
 - It gets executed.
 5. Enter the **value** (Singing).
 6. Click on the **check mark**.
- This stores the value (Singing) into the variable.*



7. Click on the **answer** to see the stored value.
- Stored value appears.



8. Click on **Looks**.
9. Drag **say () for 2 seconds** block and fit it under the first block.





10. Click on **Sensing**.
11. Drag **answer** block and fit it within text slot of **say** command.



12. Click on **Events**.
13. Drag the **when green flag clicked** block and put it at the top of the script.



14. Click on the **Flag** [].

After clicking the **Flag** [], it will first ask the question. The question appears in the form of a **voice balloon** on the stage. Then it waits for the user response. Type the response and press **Enter** key or click on the **check mark**. The response or answer will appear in a voice balloon on the stage for 2 seconds.

Conditional Programming

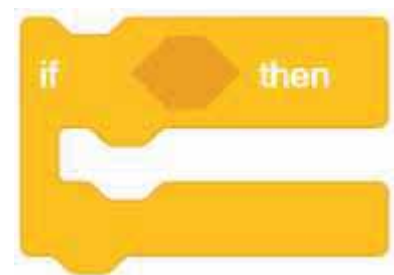
A **program** is a set of instructions which are executed in a sequential manner. In some situations, we have to change the order of execution of the program based on conditions.

Sequential Statement: A sequential statement shows one or more actions following each other in order. Actions include input, process, and output. All the codes that you have written so far are executed in the sequence, i.e. each line of code runs after the previous one.

Conditional Statement: A conditional statement tells the program which action to take, based on a certain condition. Scratch provides you different commands by which you can control the flow of execution.

IF-THEN BLOCK

The **If-then** block is a control block which is used to check its condition. If the condition is true, the code inside the C block will run. If the condition is false, the code inside the C block will be ignored.



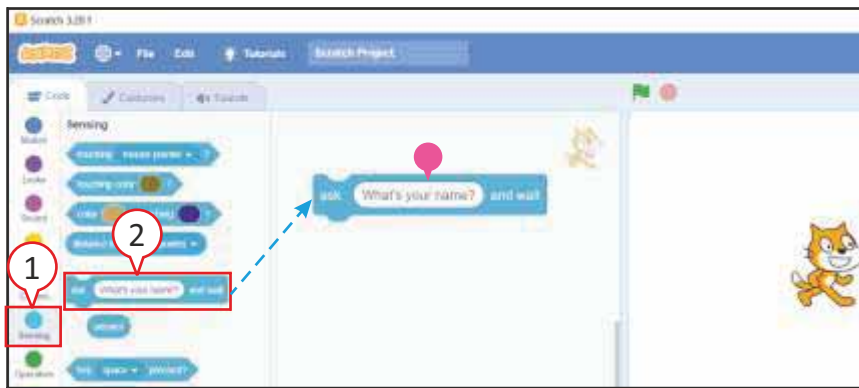
IF-THEN-ELSE BLOCK

This is also a control block which is used to check its condition. If the condition is true, the code inside the first C block will run. If the condition is false, the code inside second C block will be activated.

EXAMPLE

Your computer teacher is planning to give pen drives to the students whose marks are greater than 70. Write a script to check the marks of students. If marks are greater than 70, the student will get a pen drive otherwise next student is called.

- Create two variables: **Name** and **Marks**.
- The program will first ask the student's name.
- Then it will ask for the marks.
- If the marks are greater than 70, display a message — "Pen Drive for You".
- Otherwise display a message— "Call Next Student".



1. Click on **Sensing**.
2. Drag **ask ()** and **wait** block to Script area.
- You can replace the text but here we need **'What's your name?'**.



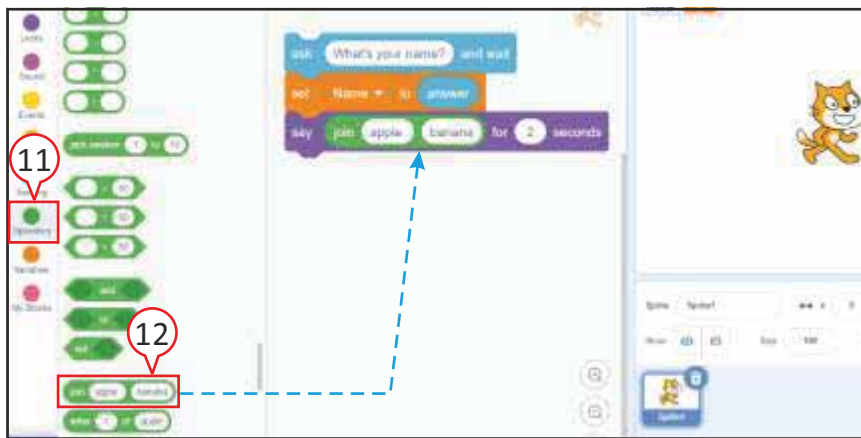
3. Click on **Variables**.
4. Make two variables and name them **Marks** and **Name**.
5. Drag the **set** command and fit it under the first block.
6. Click on down arrow and select variable **Name** from the list.



7. Click on **Sensing**.
8. Drag **answer** block and fit it within number slot of **set** command.



9. Click on **Looks**.
10. Drag **say ()** for **2 seconds** block and fit it under the **set** block.



11. Click on **Operators**.

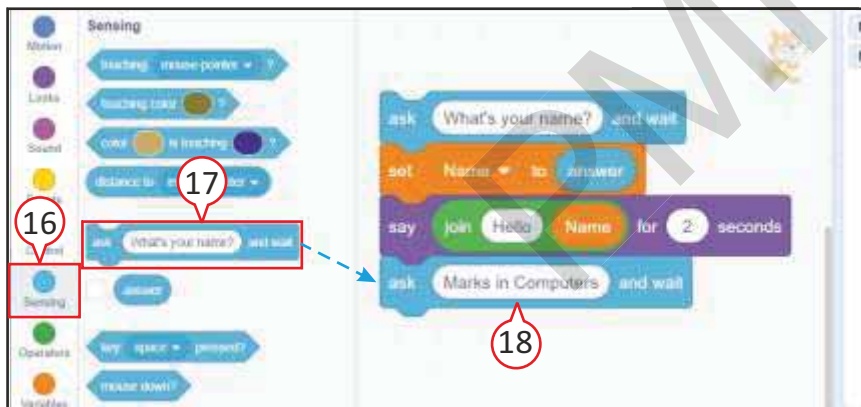
12. Drag **join** block and fit it into the text slot of **say** command block.



13. Change the text **apple** to **Hello** in the **join** block.

14. Click on **Variables**.

15. Drag variable **Name** to fit into the second text slot of **join** block.



16. Click on **Sensing**.

17. Drag **ask () and wait** block to Script area and fit it under the **say** block.

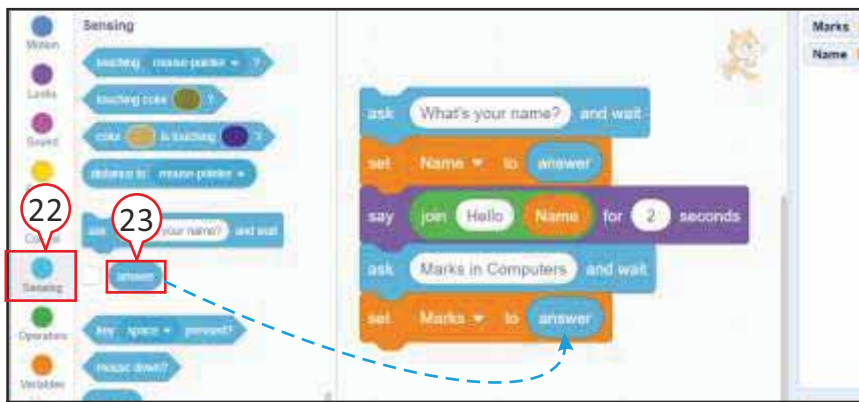
18. Replace the text with **Marks in Computers**.



19. Click on **Variables**.

20. Drag the **set** command to Script area and fit it under the **ask** block.

21. Click on down arrow and select variable **Marks** from the list.



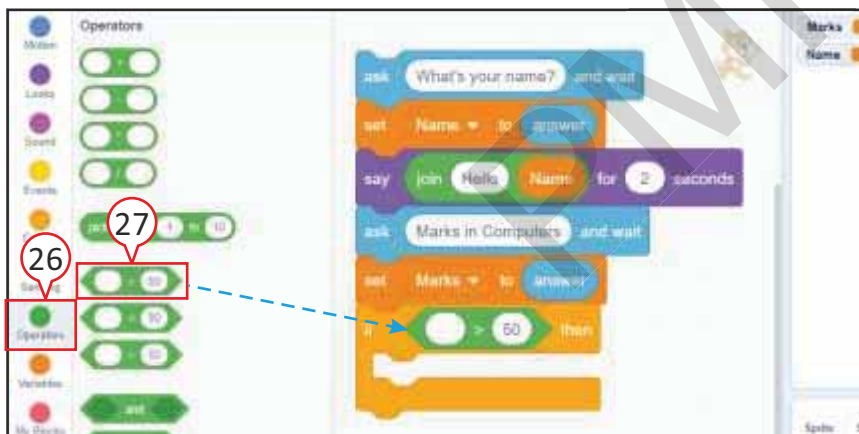
22. Click on **Sensing**.

23. Drag **ask** block and fit it within text slot of **set** command.



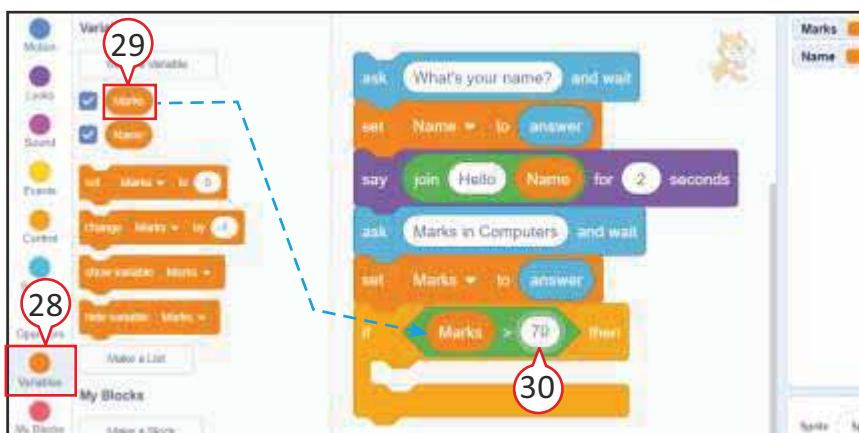
24. Click on **Control**.

25. Drag **If-then** block and fit it under the **set** command.



26. Click on **Operators**.

27. Drag the first **comparison operator** block and fit it into the value box in the **if then** block to check condition and make decision.

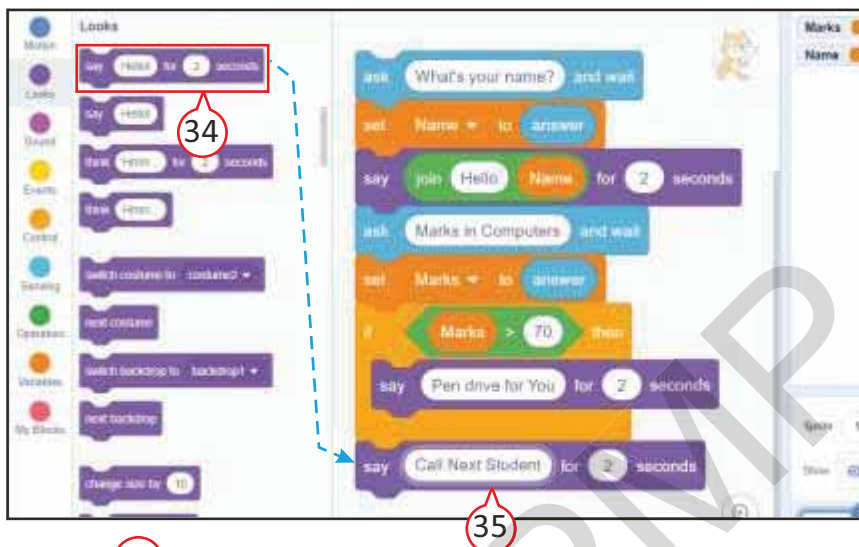
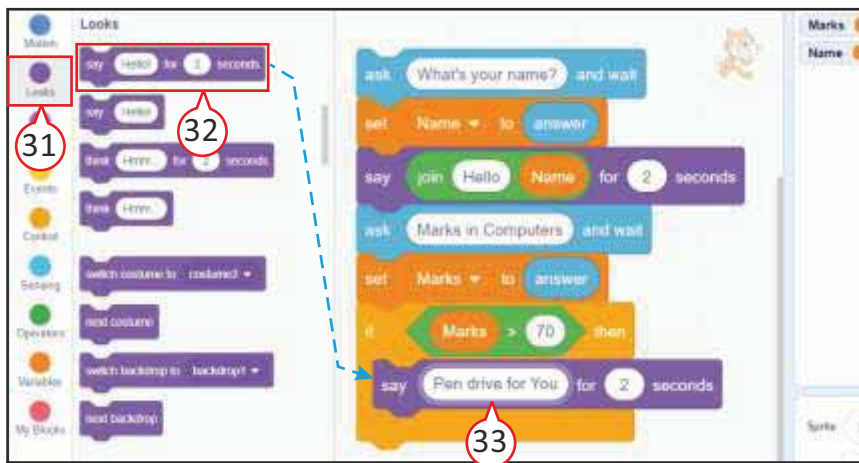


28. Click on **Variables**.

29. Drag variable **Marks** to fit into the first text slot of **if-then** block.

30. Type the comparison value into the second text slot to carry out comparison of marks and make decision.

In this example, condition will check if the marks are greater than **70** then the student will get a pen drive.



Since your script is complete now, it is time to check the codes.



38. Click on the **Flag** [] to start the script.

- It will ask your name.

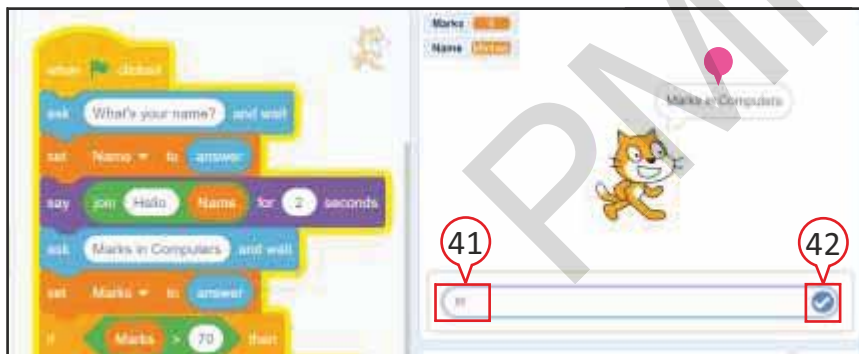
39. Enter the **value** (Minhas).

40. Click on **check mark** or press the **Enter** key.

It will store the name (Minhas) into the variable.



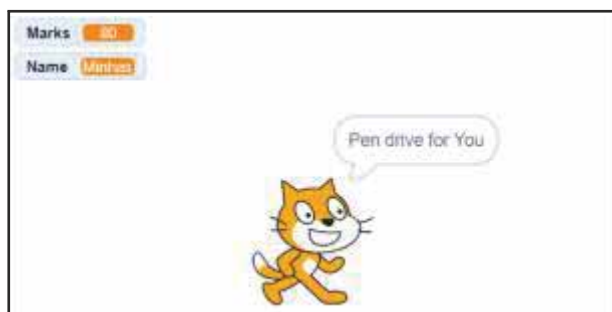
- Then it will say **Hello (your name)** for 2 seconds.



- After 2 seconds, it will ask for your marks in Computer.

41. Enter the **value** (80).

42. Click on the **check mark** or press the **Enter** key.



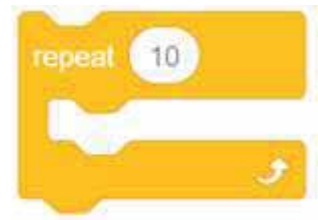
Now, it will check the condition. If the marks are **greater than 70**, it will say **Pen drive for You** for 2 seconds. Then it will call for the next student.



If the marks are **less than 70**, it will say **Call Next Student**.

Repeat Block

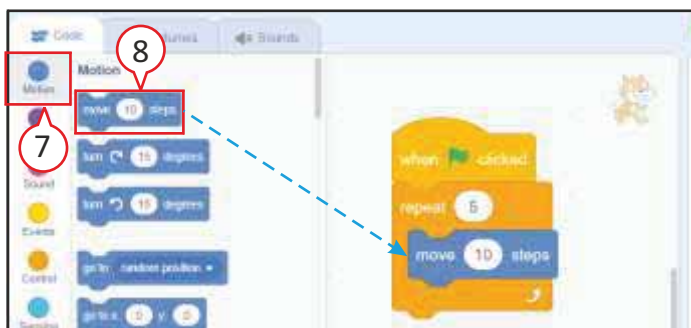
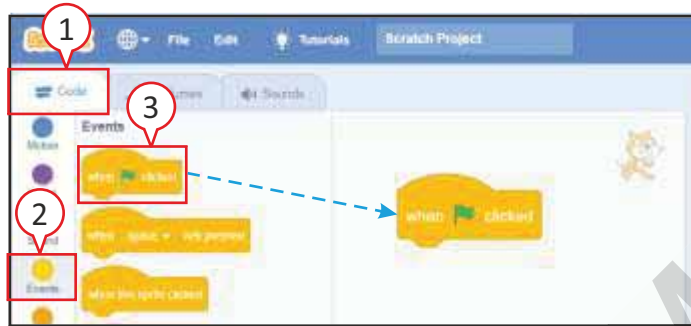
The **Repeat** block is a **control** block which runs the script for a set number of times. This block is used when you know how many times the command block will run. By default, the white box in the block contains the numeric value which shows the number of repeats the block will execute. You can change the number to change the number of repeats.



When you click Repeat block, the blocks held inside this block will be executed in a loop and that loop will end at a set number of times.

Example

Write a script to set a number of repeats. Output the word 'Phew!' five times.



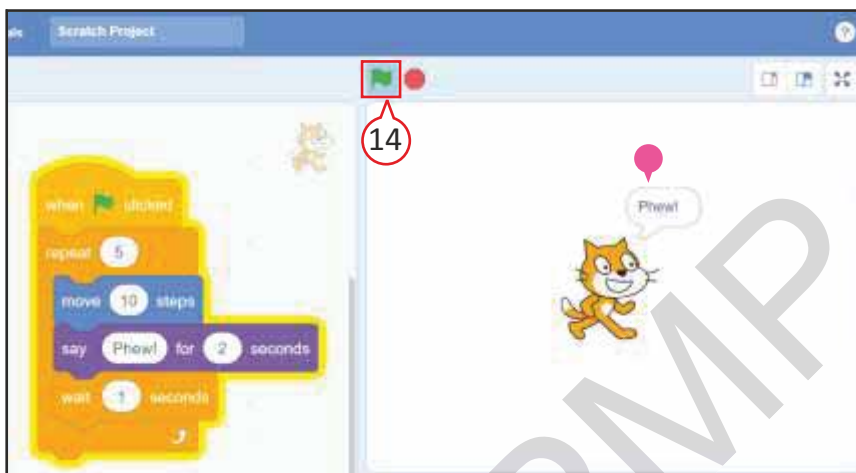
1. Click on **Code** tab.
2. Click on **Events**.
3. Select **when flag [] clicked** block and drag it into the Script area.
4. Click on **Control**.
5. Drag the **Repeat** block into the Script area and place it under **when flag [] clicked** block.
6. Replace the number with 5 in the white box.
7. Click on **Motion**.
8. Drag **move 10 steps** block into the Script area and place it inside the **repeat** block.
9. Click on **Looks**.
10. Drag **say Hello! for 2 seconds** block and place it inside the **repeat** block, right under the **move** block.
11. Replace the text with **Phew!** in white box.



12. Click on **Control**.

13. Select **wait 1 seconds** block, drag it and place it inside the **repeat** block, under the **say** block.

Since your script is complete now, it is time to check the codes.



14. Click on the **Flag** [] to start the script.

- Now cat will move 10 steps, say 'Phew!' for 2 seconds and wait for 1 second.

The script will repeat these steps 5 times.



NESTED REPEAT

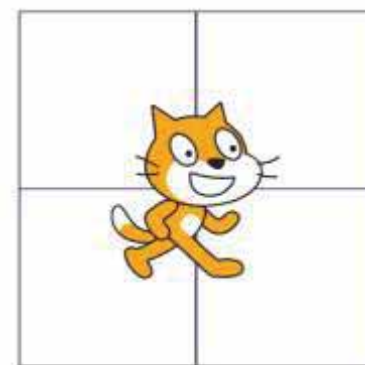
When you insert Repeat block inside another Repeat block, it is called **nested repeat**.

Given alongside is an example of nested repeat block.

Code Blocks



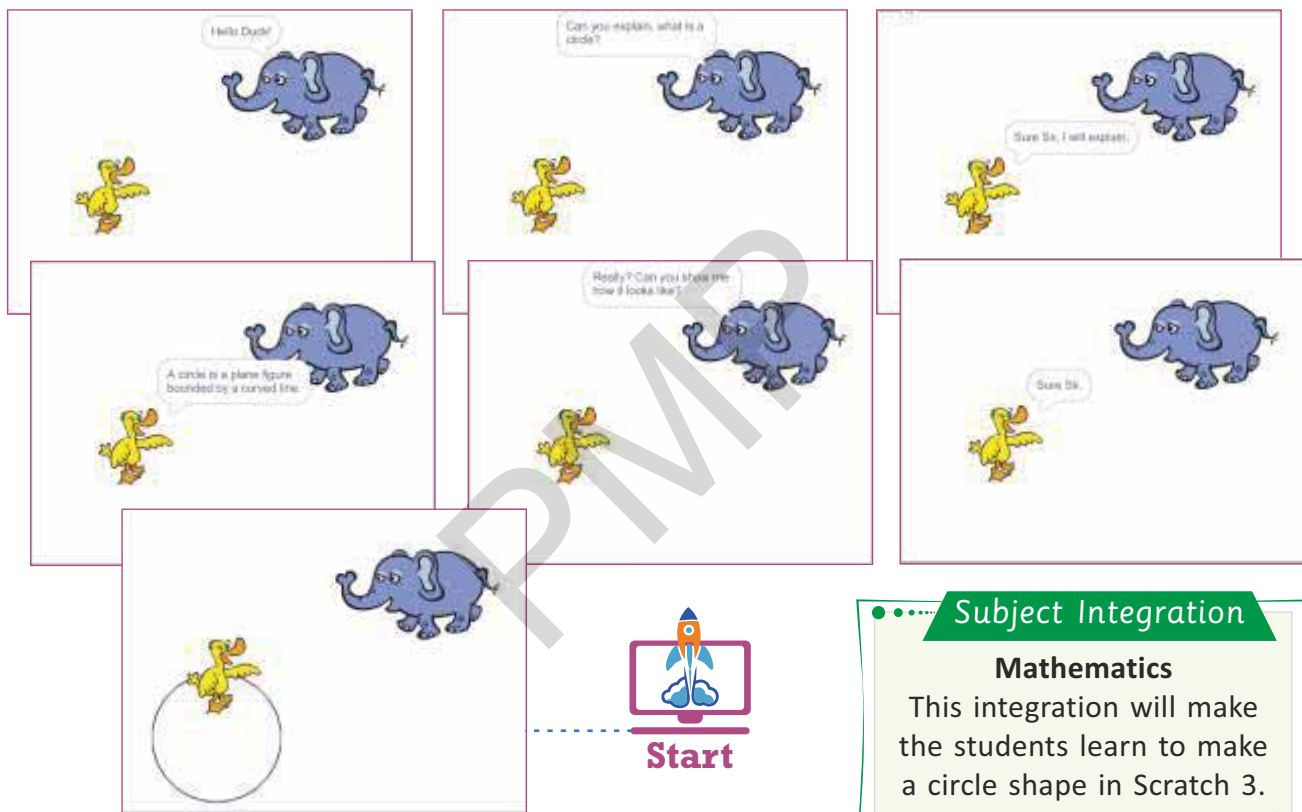
Output



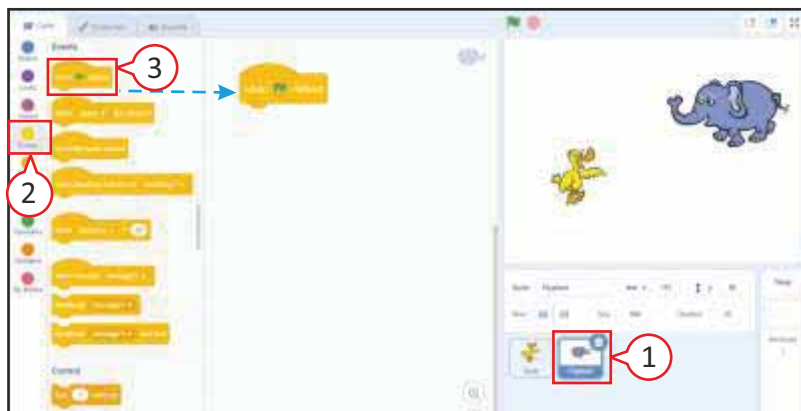
BROADCASTING AND RECEIVING MESSAGE

In a Scratch project, **broadcast** is a message that is sent to notify the scripts that an event has happened. It is a good way to have sprites and scripts communicate. The broadcast is sent with **broadcast ()** and **broadcast and wait ()** blocks. Broadcast is received by **when I receive ()** block.

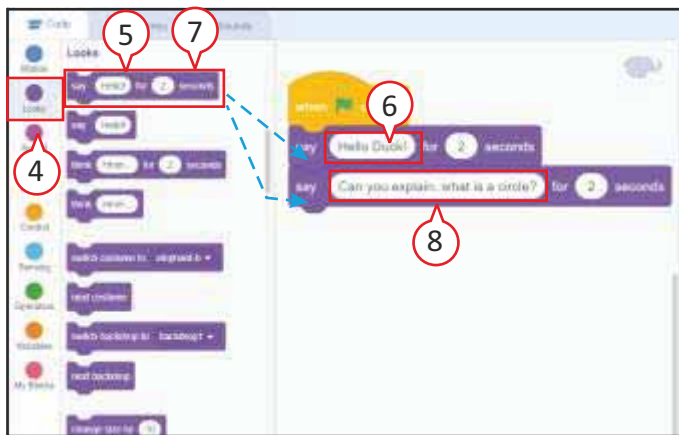
Project: Broadcast Message between Elephant and Duck



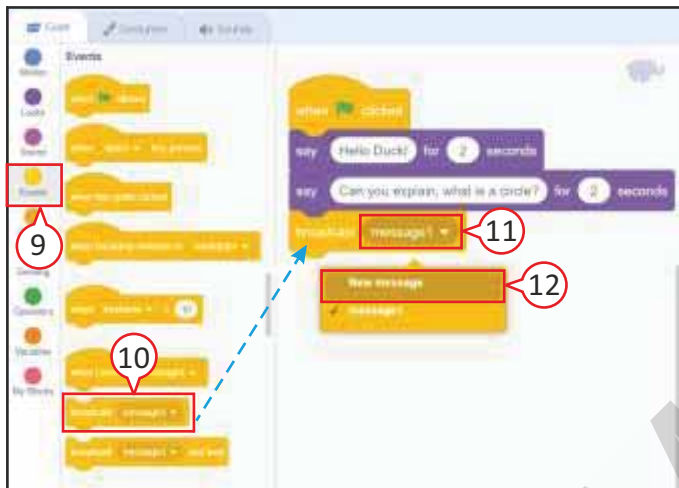
Insert two sprites (Elephant and Duck) in the Sprites list area and place them on stage as shown. (Rotate Elephant sprite by -90 degree and split it.)



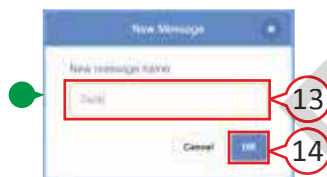
1. In the **Sprites list** area, click on the **sprite icon** (Elephant) for which you want to create a script.
2. Click on **Event**.
3. Select **when flag [] clicked** block and drag it into the Script area.



4. Click on **Looks**.
5. Drag **say () for 2 seconds** block, and place it under **when [] clicked** block.
6. Replace the text with **Hello Duck!** in white box.
7. Drag **say () for 2 seconds** block, and place it under the **say** block.
8. Replace the text with **Can you explain, what is a circle?**.

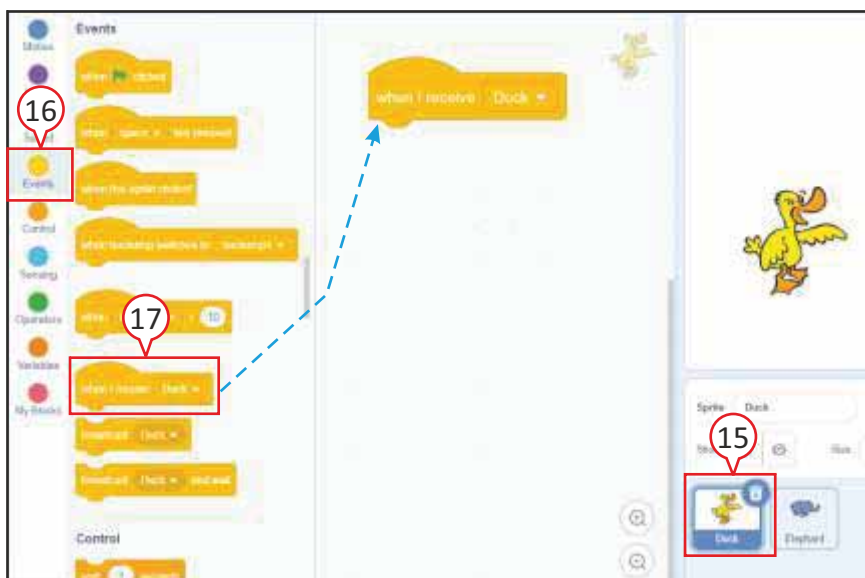


9. Click on **Events**.
10. Drag **broadcast** block and place it under the **say** block.
11. Click on the down arrow in the **broadcast**.
12. Click on **New message**.

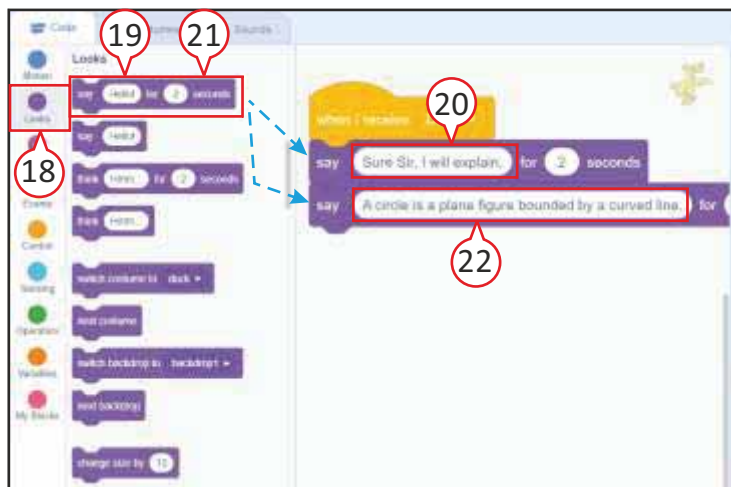


- New Message box appears.
13. Type a new name **Duck** for the broadcast.
 14. Click on **OK**.

Now, duck can respond to the broadcast.



15. In the **Sprites List**, click on the **sprite** icon (Duck) for which you want to create a script.
16. Click on **Events**.
17. Select **when I receive** block and drag it into the Script area.



18. Click on **Looks**.

19. Drag **say () for 2 seconds** block, and fix it under **when I receive** block.

20. Replace the text with **Sure Sir, I will explain.**

21. Drag **say () for 2 seconds** block, and fix it under the **say** block.

22. Replace the text with **A circle is a plane figure bounded by a curved line.**



23. Click on **Events**.

24. Drag **broadcast** block and place it under the **say** block.

25. Click on the down arrow in the **broadcast**.

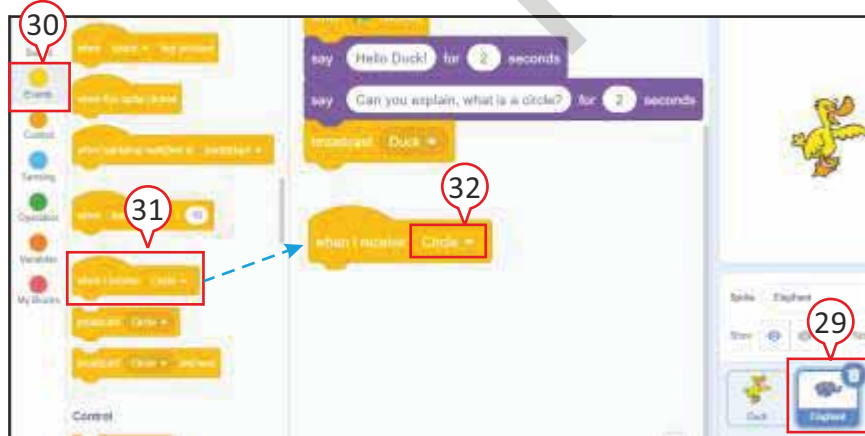
26. Click on **New message**.

● New Message box appears.

27. Type a new name **Circle** for the broadcast.

28. Click on **OK**.

Now, elephant can respond to the broadcast.

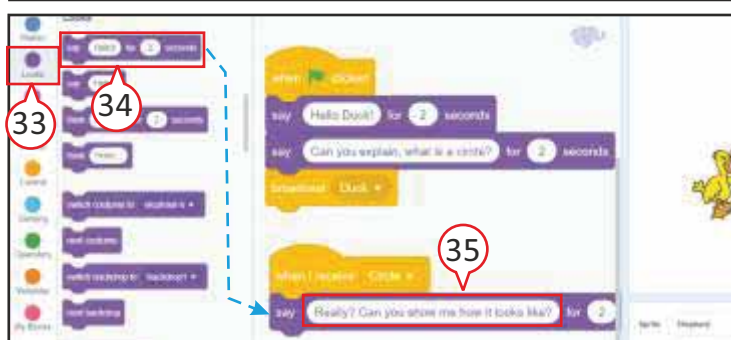


29. In the **Sprites List**, click on the **sprite** icon (Elephant).

30. Click on **Events**.

31. Select **when I receive** block and drag it into the Script area.

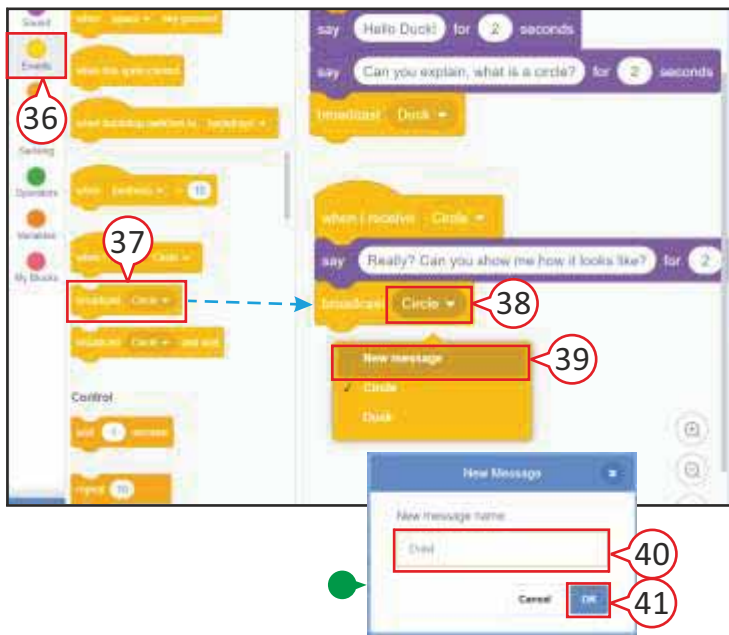
32. Click on the down arrow and select **Circle**.



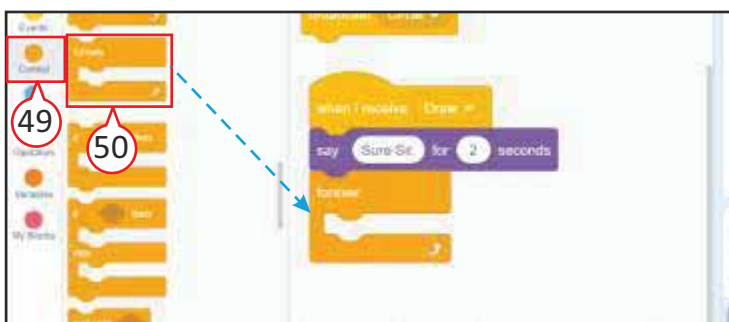
33. Click on **Looks**.

34. Drag **say () for 2 seconds** block, and fix it under **when I receive** block.

35. Replace the text with **Really? Can you show me how it looks like?**



Now, duck can respond to the broadcast.



36. Click on **Events**.

37. Drag **broadcast** block and place it under the **say** block.

38. Click on the down arrow in the **broadcast**.

39. Click on **New message**.

• New Message box appears.

40. Type a new name **Draw** for the broadcast.

41. Click on **OK**.

42. In the **Sprites List**, click on the **sprite** icon (Duck).

43. Click on **Events**.

44. Select **when I receive** block and drag it into the Script area.

45. Click on the down arrow and select **Draw**.

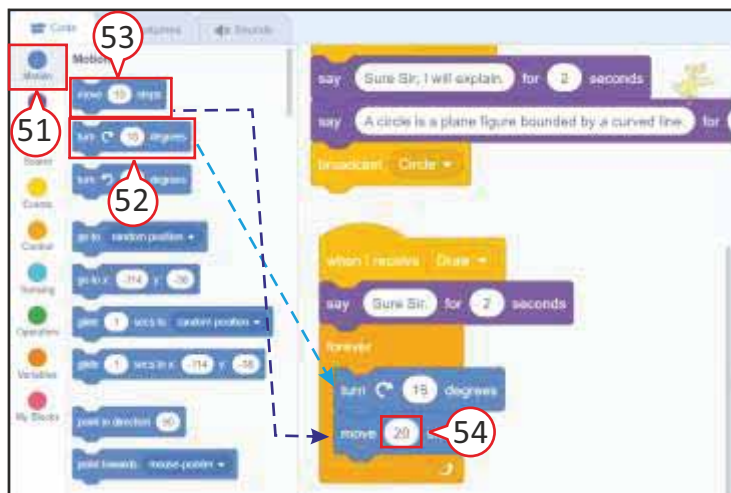
46. Click on **Looks**.

47. Drag **say () for 2 seconds** block, and fix it under **when I receive** block.

48. Replace the text with **Sure Sir**.

49. Click on **Control**.

50. Select **Forever** block, drag it into the Script area, and fix it underneath the **say** block.

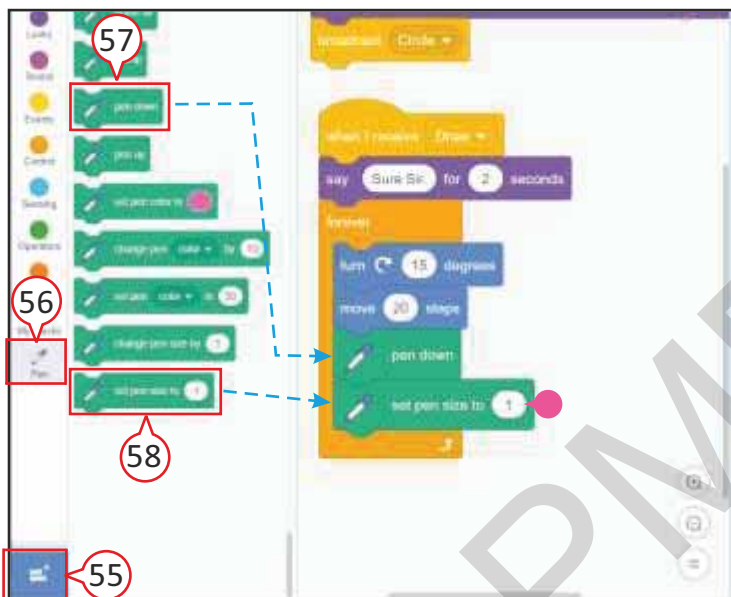


51. Click on **Motion**.

52. Drag **turn clockwise 15 degrees** block and fix it inside the **Forever** block.

53. Drag **move 10 steps** block and fix it under the **turn clockwise 15 degrees** block.

54. Type **20** in the white box.



55. Click on **Add Extension** and choose **Pen** extension.

56. Click on **Pen** extension.

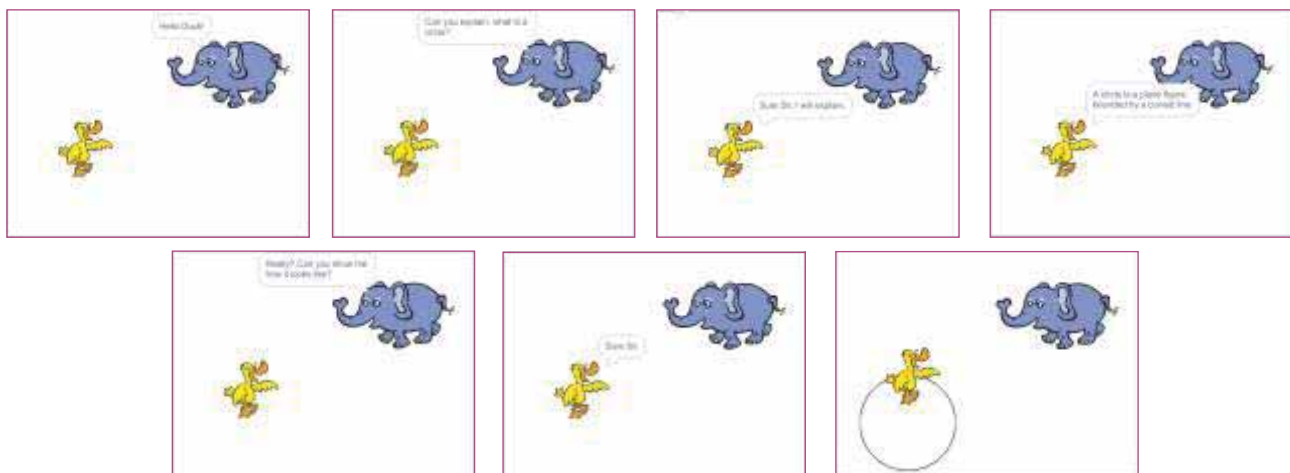
57. Drag **pen down** block and fix it underneath **move 20 steps** block.

58. Drag **set pen size to 1** block and fix it underneath the **pen down** block.

• The number determines how thick the size of line will be.

Since your script is complete now, it is time to check the codes.

59. Click on the **Flag** [] to start the script.



Because we have used **Forever** block, so the duck will keep on drawing the circle until we stop it.

60. Click on **Stop** [] button to stop the script.



Self-Evaluation

CHECKLIST

Agree

Disagree

After reading the chapter, I know these points:

- I know that Scratch 3 is a free, fun-based visual programming language used to create interactive stories, games and animations.
- I know that in Scratch, we can create variable for a sprite.
- I know that Operators block provides many operators which are used to add, subtract, multiply and divide numeric data.
- I know that Sensing menu provides many blocks which are used to get information from the users.
- I know that a program is a set of instructions which are executed in a sequential manner.
- I know that Repeat block is a control block which runs the script for any set number of times.
- I know that broadcast is a message that is sent to notify the script that an event has happened.

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>



Exercises

A. Tick [✓] the correct answer.

1. represents data that has an assigned value of either True or False.

a. Boolean	<input type="checkbox"/>	b. Integer	<input type="checkbox"/>	c. String	<input type="checkbox"/>
------------	--------------------------	------------	--------------------------	-----------	--------------------------
2. is a numeric value that does not include a decimal point.

a. String	<input type="checkbox"/>	b. Integer	<input type="checkbox"/>	c. Boolean	<input type="checkbox"/>
-----------	--------------------------	------------	--------------------------	------------	--------------------------
3. A statement shows one or more actions following each other.

a. conditional	<input type="checkbox"/>	b. sequential	<input type="checkbox"/>	c. repeat	<input type="checkbox"/>
----------------	--------------------------	---------------	--------------------------	-----------	--------------------------
4. The block is formed when we insert a Repeat block inside another Repeat block.

a. Nested Repeat	<input type="checkbox"/>	b. Repeat loop	<input type="checkbox"/>	c. Repeat Until	<input type="checkbox"/>
------------------	--------------------------	----------------	--------------------------	-----------------	--------------------------
5. Broadcast is received by block.

a. when I receive()	<input type="checkbox"/>	b. broadcast()	<input type="checkbox"/>	c. ask()	<input type="checkbox"/>
---------------------	--------------------------	----------------	--------------------------	----------	--------------------------

B. Write 'T' for True and 'F' for False statements.

1. In Scratch, variable can only store multiple values.
2. Operator blocks are red in color.

<input type="checkbox"/>
<input type="checkbox"/>

3. The If-then-else block is a control block which checks its condition.
4. By default, the white box in the repeat block contains the numeric value.
5. Broadcast is a message that is sent to notify that an event has happened.

C. Fill in the blanks.

1. In mathematical operators, rounded ends represent
2. menu provides many blocks which are used to get information from the users.
3. A program is a set of instructions which are executed in manner.
4. The block is a control block which runs the script for any number of times.
5. is a good way to have sprites and scripts communicate.

D. Differentiate between the following.

1. If-then block

If-then-else block

.....
.....
.....

2. Repeat block

Nested repeat block

.....
.....
.....

E. Answer the following questions.

1. What are variables?

.....

.....

2. What is a conditional statement?

.....

.....

.....

3. What is the use of broadcast in Scratch?

.....

.....

F. Application-based Question

Sonika's computer teacher has asked her to create a calculator in Scratch for which certain calculations would be required. Which code block would she need to use for this?

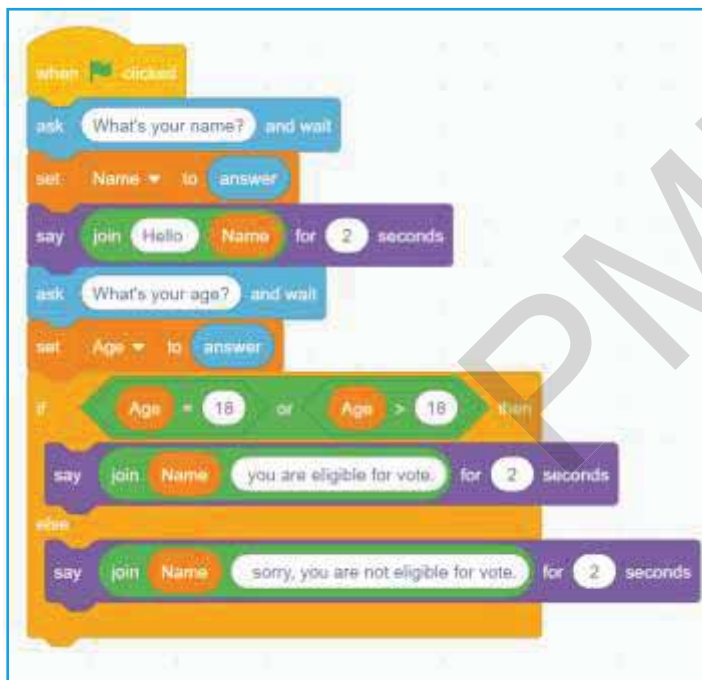
.....

Activity Section

Lab Activity

Write a script to enter the name and the age. Use if-then-else block to find out if he/she is eligible to vote. The age for vote should be equal to or above 18 years.

- Create two variables: Name and Age.
- The program will first ask to enter your name.
- Then it will ask to enter your age.
- If the age is equal to or greater than 18 then display a message– “you are eligible for vote”.
- Otherwise display a message– “sorry, you are not eligible for vote.”

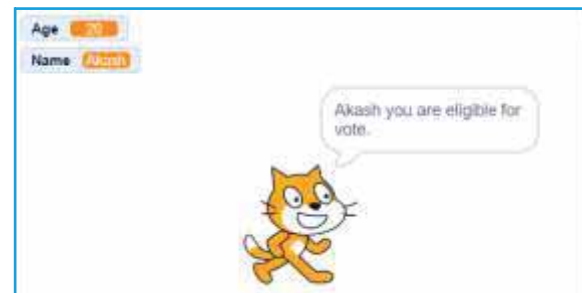


Script

Subject Integration

General Knowledge

This integration will make the students aware about the minimum age required to vote.



Output

Group Discussion

Divide the students into two groups and discuss the topic – “Use of Scratch to Create Animated Stories”.

Online Link

To learn more about scratch project, visit the website:
<https://scratch.mit.edu/explore/projects/animations/>

Domains of Artificial Intelligence

OBJECTIVES

After completing this chapter, you will be able to:

- Identify applications of AI in various fields.
- Learn advantages and disadvantages of AI.
- Understand the three domains of AI technology.

Hello Friends! You have come to know many things about AI in your previous classes. In this chapter, we are going to study about different domains of AI.



Introduction

Artificial Intelligence (AI) is one of the most versatile technologies that exist today. In fact, it has become an essential part of our daily life. Amazon's Alexa, a voice assistant, is an example of Artificial Intelligence that many of us use frequently. Let us understand the applications of AI in various sectors.

AI IN HEALTHCARE

Many **healthcare facilities** like hospitals, research centres, etc. have adopted Artificial Intelligence technology to reduce work pressure from the doctors and make diagnosis better and faster. For example, **Clinical Trial Matching (CTM)** system developed by **IBM Watson** uses AI technology to read patients' data from a larger system with right clinical study to help doctors in selecting the correct, individually customized treatment plan for every patient.



AI IN SOCIAL NETWORKING

Artificial Intelligence plays an important role in social networking applications like Facebook, Instagram and Snapchat.

On **Facebook**, you can make new friends, upload photos and do much more. When you upload photos on Facebook, it automatically highlights faces and suggests friends to tag. How does it instantly identify which of your friends are in the photo? Facebook uses AI technology to recognize faces and suggest tagging.



AI IN EDUCATION

Using **Artificial Intelligence** technology, it is easier for the teacher to share the knowledge of data collection among students through various AI applications. This technology also promotes integrated learning as it is made up of different disciplines like mathematics, biology, psychology, computer science and sociology.



AI IN MANUFACTURING INDUSTRIES

In the manufacturing industry, **AI-driven robots** are used to work non-stop without taking breaks which reduces operating expenditure and optimizes production. Presently, industrial robots are increasingly being used as **cobots** (collaborative robots) which collaborate with humans to reduce their workload.



Advantages and Disadvantages of AI

You know that AI comes with many benefits, but unfortunately it has some drawbacks as well.

ADVANTAGES OF AI



1. **Minimizes Error:** Humans can do error while doing tasks but the use of AI significantly reduces errors and increases accuracy and precision.
2. **Zero Risk Tasks:** Humans can overcome many risky tasks by letting AI robots do such tasks for them, whether it be defusing a bomb, going to space, or mining for coal and oil.
3. **Non-stop Work:** Humans can be productive for only about 6 to 8 hours in a day. Humans also need frequent breaks. But AI-driven machines can work endlessly without breaks and perform multiple tasks at a time with accurate results.
4. **Unbiased Decisions:** Human beings are driven by emotions and can be biased. AI, on the other hand, is devoid of any emotions and is highly practical in its approach. Such kind of unbiased approach ensures more accurate decision-making.

DISADVANTAGES OF AI



1. **Less Creative:** AI cannot work or think outside the box. It is capable of thinking with pre-fed data and past experiences. But unlike humans, it cannot be creative in its approach.
2. **Promotes Unemployment:** AI is slowly replacing humans with robots to do a number of repetitive tasks. The reduction in the need for human workforce has the potential of causing a great loss of many jobs.
3. **Makes Humans Lazy:** AI applications have made our life easier by automating many tasks. With the addition of AI, we do not memorize things or do calculations and use our brains less and less.
4. **Emotionless:** Machines cannot experience human emotions and moral values. They perform actions according to the pre-fed instructions and cannot make any difference between right and wrong.

Domains of Artificial Intelligence

Artificial Intelligence technology is made up of three domains – **Data**, **Computer Vision (CV)** and **Natural Language Processing (NLP)**.

- a) **Data:** Data is the heart of Artificial Intelligence, as no AI system can be developed or functional without adequate data. For example, a biometric information system needs adequate data to identify each person on the basis of their unique fingerprint. The different types of data used in AI systems are **Sound**, **Text**, **Image** and **Video**.



- b) **Computer Vision (CV):** The discipline of teaching machines how to see and perceive the human world is known as **computer vision**. This domain of AI enables machines to identify and process objects in images and videos in the same way as humans do. Examples of this domain are, driverless car, face recognition app, etc.

- c) **Natural Language Processing (NLP):** This domain of AI is concerned with giving computers the ability to understand text and spoken words in much the same way as human beings do. **Alexa** is one such virtual assistant that can understand, process, learn from, and respond to voice inputs in natural ways.



AI Lab

SEMANTRIS (BASED ON DATA/NLP DOMAIN)

Semantris is a word association game powered by AI technology that helps you in enhancing your vocabulary and encourages you to think outside the box. You can play it online. By playing this game, you will learn how the machine learns and trains itself with the data provided by you.

Game Introduction

Semantris is a very simple, fun game to enhance vocabulary and learn new words. In this game, you will see a number of words on the screen. You have to type and add clues related to these words. The clue entered by you is monitored by **AI** which compares it with the words on the screen and selects the words which are most related to the entered clue. This game can be played in two modes: **Arcade** and **Blocks**. In Arcade mode, you have to think and type fast. While in Blocks mode, you have enough time to think and type clues.

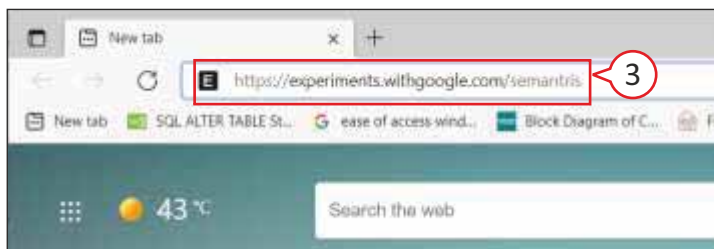
Playing Semantris Online

To start this game, you need a computer with Internet connection.

1. Click on **Start** icon to open Start menu (or press **Windows** key).
2. Click on **Microsoft Edge**.

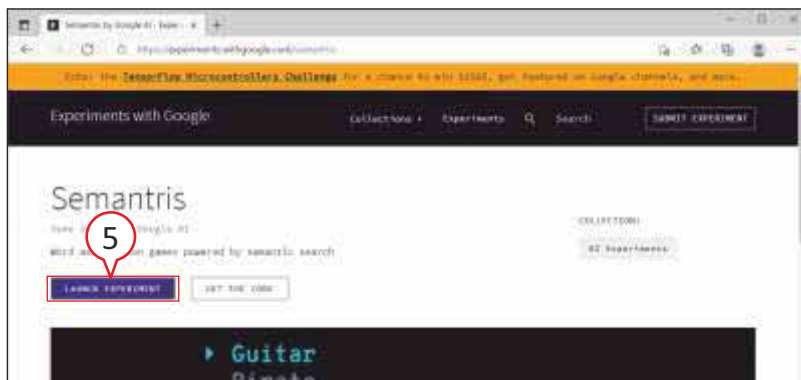
You can also open Microsoft Edge by clicking on its icon on the taskbar.

Microsoft Edge window appears.



3. Click on address bar and type <https://experiments.withgoogle.com/semantris>

4. Press **Enter** key from the keyboard.



Semantris home page appears.

5. Click on **LAUNCH EXPERIMENT** button.

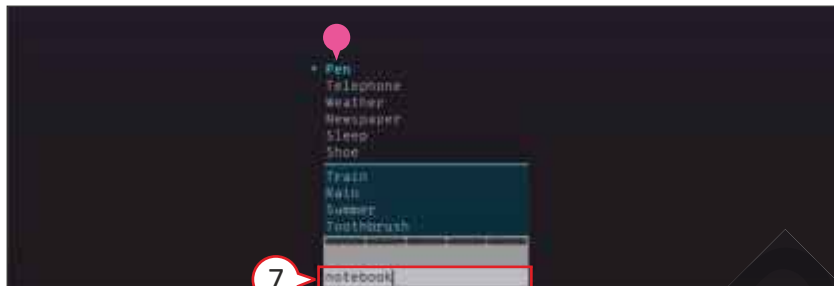
You will get the next screen.



On this screen, you have to select the desired mode. Here, we have selected **Arcade** mode first.

6. Click on **PLAY ARCADE**.

In this mode, you have to enter a clue in the box which is closest to the word highlighted in **aqua green** color.



● Enter a clue related to the word **Pen**.

7. Type your clue (notebook).

8. Press the **Enter** key.



● If your clue is right, it will show **Nice!**.

● Those words that are related to the clue entered by you get sorted to the bottom of the stack.



You will get points for clearing the word and for words that fall below the line.

9. Repeat steps **7** and **8** to enter a clue for next highlighted word.



You will get **Game Over** message when the stack of words reaches the top of the screen.

EMOJI SCAVENGER HUNT (BASED ON COMPUTER VISION)

Emoji Scavenger Hunt is an online game which uses the power of Artificial Intelligence using phone camera or laptop camera to recognize the real-life versions of the commonly used emojis.

Basic Requirements.

You need the following things to play this game:

- A device with built-in camera like laptop, smartphone or tablet
- Internet connection

Game Introduction

This game makes use of computer vision. In this game, a computer asks the user to use the camera to find objects that match an emoji within a time limit. You should remember that the time limit decreases with each find.

Playing Emoji Scavenger Hunt Online

To play this game online, go to the web browser and type this URL in the address bar:

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

and press **Enter** key. By doing this, you will get the screen shown alongside. Now click on **LET'S PLAY** button to start the game.



GOOGLE VOICE SEARCH (BASED ON NLP DOMAIN)

Google voice search on Google search engine allows users to use Google Search by asking questions with your voice on a computer or mobile.

Basic Requirements

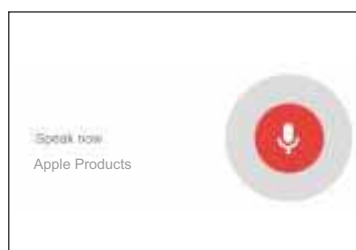
You need a device with microphone and Internet connection.

Search using Voice Command

To use voice search, go to the web browser and type this URL in the address bar: <https://www.google.com/> and press **Enter** key. Google page appears.



Click on the **Microphone icon** on the right side of the search bar.



Speak you search in the microphone. In this example, we said **Apple Products**.



Google listens to your voice and shows the related result quickly.



Self-Evaluation

CHECKLIST

Agree

Disagree

After reading the chapter, I know these points:

- I know that Artificial Intelligence is one of the most versatile technologies that exists today. ☐ ☐
- I know that Artificial Intelligence plays an important role in social networking applications like Facebook, Instagram and Snapchat. ☐ ☐
- I know that AI-driven robots are used to work non-stop which reduces operating expenditure and optimizes production. ☐ ☐
- I know that Artificial Intelligence has many benefits as well as some drawbacks. ☐ ☐
- I know that Artificial Intelligence technology is made up of three domains: Data, Computer Vision and Natural Language Processing. ☐ ☐
- I know that Semantris is a very simple, fun game to enhance vocabulary and learn new words. ☐ ☐



Exercises

A. Tick [✓] the correct answer.

1. Many healthcare facilities have adopted AI technology to reduce
a. diagnosis ☐ b. work pressure ☐ c. duplicity ☐
2. Artificial Intelligence technology promotes integrated
a. learning ☐ b. electricity ☐ c. effort ☐
3. Artificial Intelligence technology is made up of domains.
a. two ☐ b. four ☐ c. three ☐
4. is a word association game powered by AI technology.
a. Boxing ☐ b. Car Drive ☐ c. Semantris ☐
5. is the application of NLP.
a. Alexa ☐ b. Face lock ☐ c. Driverless car ☐

B. Write 'T' for True and 'F' for False statements.

1. Clinical Trial Matching system has been developed by IBM Watson. ☐
2. AI machines are driven by emotions and can be biased. ☐
3. AI robots can work endlessly without taking a break. ☐
4. AI cannot be creative in its approach. ☐
5. AI system can be developed or functional without adequate data. ☐

C. Fill in the blanks.

1. Amazon's, a voice assistant, is an example of Artificial Intelligence that many of us use frequently.
2. Facebook uses AI technology to recognize
3. AI-driven robots work endlessly without taking
4. Machines cannot experience human and moral values.
5. A information system needs adequate data to identify each person on the basis of their unique fingerprints.
6. and are two modes in which Semantris is played.

D. Differentiate between the following.

- | | |
|-------------------------|-----------------------------------|
| 1. AI in Education | AI in Manufacturing Industries |
| | |
| | |
| | |
| 2. Computer Vision (CV) | Natural Language Processing (NLP) |
| | |
| | |
| | |

E. Answer the following questions.

1. What is Clinical Trial Matching (CTM)?
.....
.....
2. List two advantages of Artificial Intelligence.
.....
.....
.....
3. List two disadvantages of Artificial Intelligence.
.....
.....
4. Name three domains of Artificial Intelligence.
.....
.....

F. Application-based Question

PMP Bank has launched its digital assistant (chatbot) to assist customers with loan-related queries. This assistant takes customers' written or spoken language as input and answers accordingly. Can you tell which domain of Artificial Intelligence has been used in creating this digital assistant?

.....

Activity Section



Activity Research and Identify

Research and identify the domain (Data, Computer Vision and Natural Language Processing) of each application and write the same.

Application

Domain of AI



Chatbot

.....



Self-driving car

.....



Virtual assistant

.....



Biometric system

.....

Activity Presentation

Using your creativity and vision of future, create a PowerPoint presentation on topic– 'Applications of AI in Various Fields'.

Group Discussion

Divide the students into two groups and discuss– 'Advantages vs. Limitations of Artificial Intelligence'.

Online Link

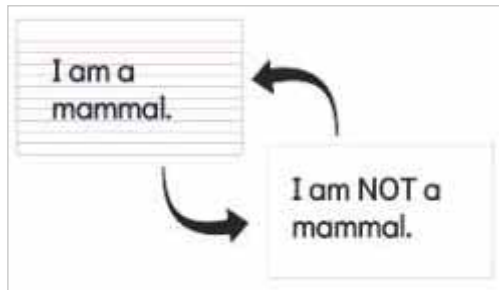
To learn more about AI Domain, visit the website:

<https://aiforkids.in/class-10/domains-of-ai/>

Lab Activity

Mystery Animal (Based on Natural Language Processing Domain)

As you know, a data processing device normally requires input to process and then display output. You can learn English as a second language very easily.



Skill Formation

- This activity consists of 20 questions which will help the students to build communication skills and critical thinking.

Game Introduction

This game is also known as 'Twenty Questions'. As the name suggests, twenty sets of Yes/No questions are asked by one player and the other player (here AI) acts as an animal. Let us understand with the help of a few questions:

- Are you a mammal?
- Do you have feathers?
- Do you live underground?
- Do you eat meat?
- Do you live in North America?

Depending upon the answers, the player (here AI) will try to determine what the mystery animal is.

How to Play Mystery Animal Online?

To play this game online, go to the web browser and type the following URL in the address bar: <https://mysteryanimal.withgoogle.com/> and press **Enter** key.

You will get the following screen.



- On this screen, click on the **Preview it here** button to load the first mystery animal.
- Use either **Google Home** or the **microphone** on your computer by pressing the microphone icon on the screen.
- Ask a set of 20 Yes/No questions.

Worksheet-II

Chapters 6 - 9

A. Tick [✓] the correct answer.

1. @ symbol used in an e-mail address is pronounced as
a. at ☐ b. as ☐ c. all ☐
2. The message written in capital letters is called
a. bounced ☐ b. shouting ☐ c. abbreviation ☐
3. The direction of flow in any flowchart should be from
a. top to bottom ☐ b. bottom to top ☐ c. right to left ☐
4. language is machine-independent language.
a. Low level ☐ b. Assembly ☐ c. High level ☐
5. is a numeric value that does not include a decimal point.
a. String ☐ b. Integer ☐ c. Boolean ☐
6. A statement shows one or more actions following each other.
a. conditional ☐ b. sequential ☐ c. repeat ☐
7. Artificial Intelligence technology promotes integrated
a. learning ☐ b. circuit ☐ c. effort ☐
8. is the application of NLP.
a. Alexa ☐ b. Face lock ☐ c. Driverless car ☐

B. Write 'T' for True and 'F' for False statements.

1. 'From' section contains address of person who is writing the e-mail. ☐
2. You should open e-mail attachment only from trusted source. ☐
3. An algorithm is a graphical representation of a flowchart. ☐
4. An assembly language does not need a translator. ☐
5. In Scratch, variable can only store multiple values. ☐
6. By default, the white box in the repeat block contains the numeric value. ☐
7. AI machines are driven by emotions and can be biased. ☐
8. AI cannot be creative in its approach. ☐

C. Fill in the blanks.

1. can save time while typing the e-mail message.
2. section is the very short description of the e-mail message.
3. Natural language is sometimes called generation language.
4. converts the assembly language program into machine language.

5. A program is a set of instruction which are executed in manner.
6. is a good way to have sprites and scripts communicate.
7. Facebook uses AI technology to recognize
8. AI-driven robots work endlessly without taking

D. Write the e-mail abbreviations for the following.

- | | |
|------------------------------|---------------------|
| 1. As soon as possible | 2. By the way |
| 3. See you | 4. Don't know |

E. Define the following.

- | | | |
|-------------------|---------------|-------------|
| 1. E-mail address | 2. Attachment | 3. Shouting |
| 4. Assembler | 5. Variables | 6. Cobots |

F. Differentiate between the following.

- | | |
|------------------------------------|-----------------------------------------|
| 1. Signature and Subject in e-mail | 2. Reply and Forward |
| 3. Compiler and Interpreter | 4. If-then block and If-then-else block |
| 5. CV and NLP | |

G. Answer the following questions.

1. Name the different programs that are used to create and manage an e-mail.
2. Explain the different parts of an e-mail message.
3. What do you understand by algorithm?
4. What are the advantages of flowchart?
5. What is a conditional statement?
6. What is the use of broadcast in Scratch?
7. List two disadvantages of Artificial Intelligence.
8. Name three domains of Artificial Intelligence.

Project Work

Project Word

A. Open Word and create multiple letters using Mail Merge feature.

1. Create the following document in Word.

<<FIRST NAME>>

<<LAST NAME>>

<<ADDRESS>>

<<CITY>>

<<PHONE>>

Dear <<FIRST NAME>>

We are pleased to inform you that program named 'Swachh Bharat Abhiyan' has been launched in our society. Under this program, you, as a resident of the society, are requested to observe cleanliness at your home and in your surroundings. You should keep two different dustbins outside your home. One dustbin should be of green color and other should be of red color. All kinds of biodegradable waste should be thrown in the green dustbin. All kinds of non-biodegradable waste should be thrown in the red dustbin. The segregated waste will be disposed off accordingly. Let us join hands and make this initiative of our society a success.

With regards,

Authorized Signatory

Model Town Residents' Welfare Association

Delhi

2. Create a data source of 11 residents of the society, containing their **FIRST NAME, LAST NAME, ADDRESS, CITY** and **PHONE**.
3. Merge the above document with the created data source.
4. Format the documents and take printouts.

B. Open Word, create a Time-Table for your class in the following manner.

	1	2	3	4		5	6	7	8
Mon					R				
Tue					E				
Wed					C				
Thu					E				
Fri					S				
Sat					S				

Project PowerPoint

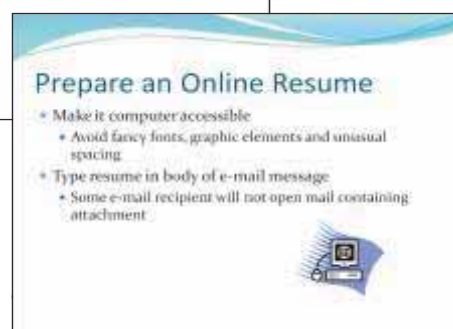
A. Suppose you are working part-time in Planet Multimedia Placement. Since you have the knowledge of making PowerPoint presentations, your boss has asked you to make a presentation for their office. Using the concept and techniques you have learned, make a presentation and create four slides as shown below.



Slide 1



Slide 2



Slide 4

B. Make a presentation on Diwali Mela celebrated in your school and apply animation and transition effects. Save the presentation as 'Diwali Mela'.

SLIDES

1. **COME ONE, COME ALL**
Diwali Mela in School ground
2. **FUN AND MASTI**
You'll never forget this; that's our promise!
Come with your near and dear ones!
3. **DATE, TIME AND VENUE**
October 15, 2022, 9 am to 5 pm in playground
4. **EVENTS**
Competition and Quiz
Indoor Games
5. **DANCE AND MASTI**
Dance Party
Global DJ Group
6. **WANT TO PARTICIPATE?**
Meet the Vice Principal before October 10
7. **WANT TO BE A PART OF IT?**
Buy your tickets fast.
Only a few tickets are left.

LAYOUT

Introductory Slide with heading

ClipArt and text

Text and ClipArt

Text

Text and ClipArt

Text

Text

Project Scratch

Animating a Space Scene

1. Choose a backdrop of stars in Space Theme.
2. Delete the default sprite (cat).
3. Add **Earth**, **Rocketship**, **Star** and **Pico** sprites to your stage.



This is how your stage should look. →



4. Add the following codes.

Earth 	Rocketship
Star 	Pico

5. Click on **Flag** [] above the stage to start animation.

You will observe that **Earth** is rotating; **Spaceship** moves towards Earth and bounces back when touches the edge; **Star** is shining; **Pico** is lost in the space and moving non-stop and it bounces back when touches the edge.

Additional Information

Google Slides

Google Slides is a free online presentation application that allows you to communicate ideas, messages, and other information to others. It works like Microsoft PowerPoint and LibreOffice Impress.

The advantages of using Google Slides are given below:

- It is free for the individual user.
- We can create presentation in our web browser and no software is required.
- There are no compatibility issues; everyone is on the same version.
- Realtime editing of presentation can be done by multiple-user simultaneously.
- The data stored online is very much secure and well-protected.

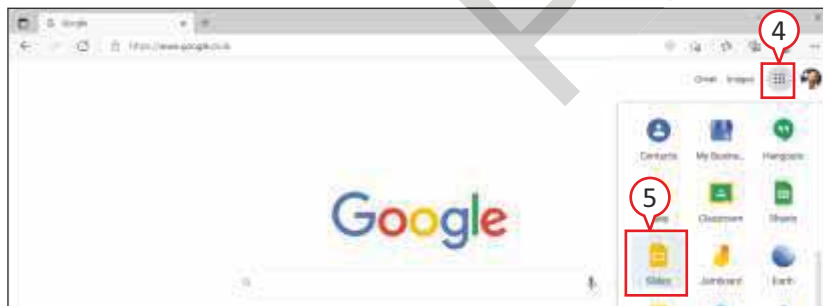
STARTING GOOGLE SLIDES

To start Google Slides, open **Google** web page in the web browser.

1. In the Google page, click on **Sign in**. *Google account page will appear.*
2. Type your **login ID** and the **password**.

Your login ID and password are same as that of your Gmail account.

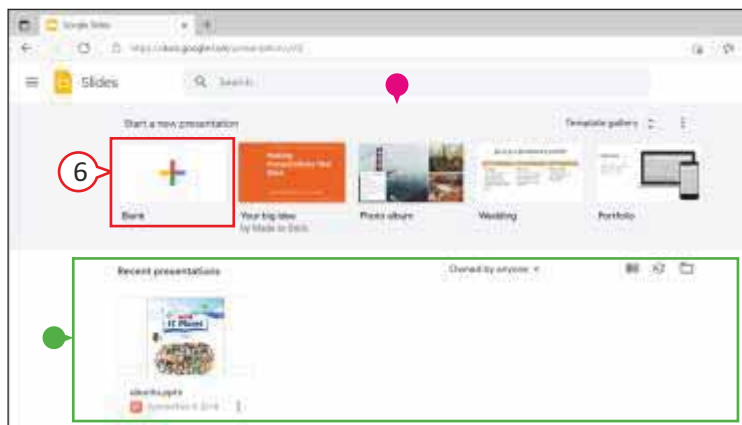
3. Click on **Next** button. *Google page appears again with your login details.*



4. Click on **Google Apps** icon.

A list of all Google Apps appears.

5. Scroll down and click on **Slides**.



Slides page appears.

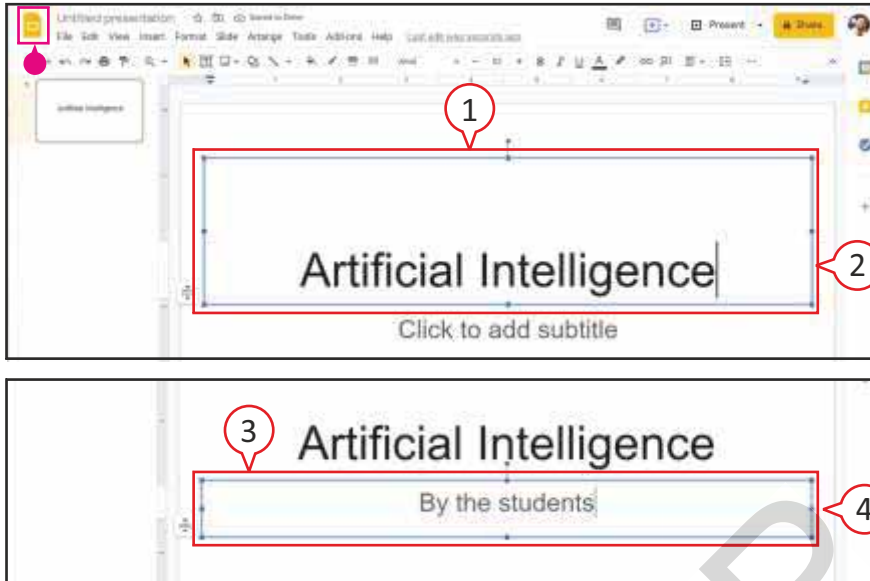
- This area shows you Template gallery, which includes blank and pre-designed presentations. You can select and work on any of it.
 - This area shows the list of existing presentations.
6. Click on **Blank** to start a new presentation.

An empty presentation will appear to work on the screen.

Working in Google Slides

When you open a new presentation, the program assumes that you will begin your slide show with a title slide.

ENTERING THE TEXT IN TITLE AND SUBTITLE

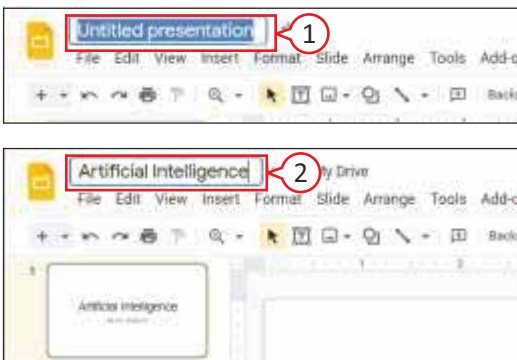


1. Click on the **title text placeholder** box.
2. Type your text in it.
- You can click on **Slides home** button to return to **Google Slide** home.
3. Click on the **subtitle text placeholder** box.
4. Type your text in it.

All your work is automatically saved as you type. This presentation will be saved in **Google Drive**. Google Drive is an online storage used to store your data.

RENAMING THE PRESENTATION

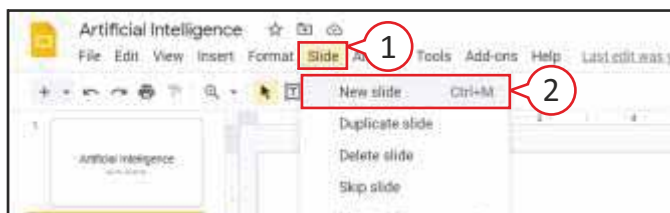
By default, the name of the blank sheet appears as **Untitled presentation**, but you can rename it and give it a new name.



1. Click inside the **Untitled presentation** box.
The text in the box will be highlighted.
2. Type the desired name in the box.
3. Press the **Enter** key.
The new name will appear in presentation listing.
*The new name will also appear in **Google Drive**.*

ADDING A NEW SLIDE

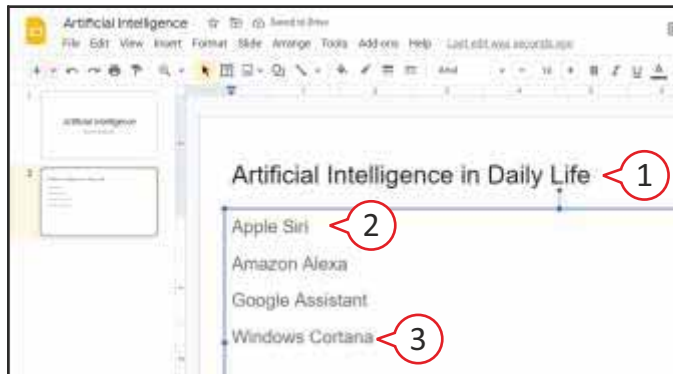
Slides presentation is a combination of many slides. After creating a title slide, your next step is to add a new slide in the presentation.



1. Click on **Slide** menu.
2. Click on the **New Slide** option.
The slide 2 appears in the presentation and in Slides thumbnail pane.

ADDING TEXT TO SLIDE 2

You can type the text in the same way as you typed text for slide 1.



1. Click on the **title text placeholder** box and type your text.
2. Click on the **subtitle text placeholder** box and type your text.

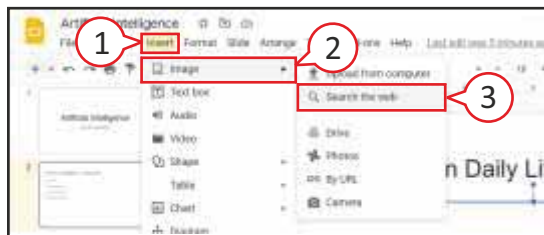
When you press the **Enter** key, a new line will appear.

3. Complete your remaining text as you did in earlier steps.

In the same way, you can add more slides and complete your presentation.

INSERTING AN IMAGE INTO A SLIDE

You can insert an image in your slide.



1. Click on **Insert** menu.
2. Click on **Image** option.
3. Click on **Search the web**.

You can also insert image from your camera, computer, Google Drive, etc.

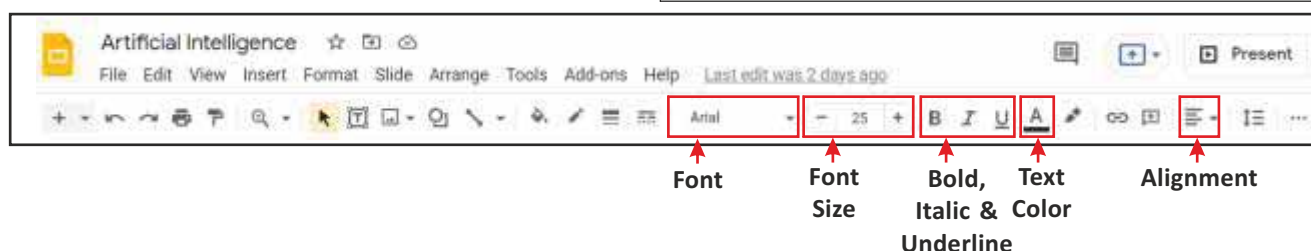


4. Type your search text in search box.
 5. Double-click on the desired image.
- The image will appear in the slide.*

You can resize the image and place it at the desired location.

FORMATTING PRESENTATION

Formatting displays the slides in an attractive outlook. You can make your presentation more presentable by applying several formatting features on the text like change **font**, **font size**, **text color**, **bold**, **italic** and **alignment**.



Font

Font
Size

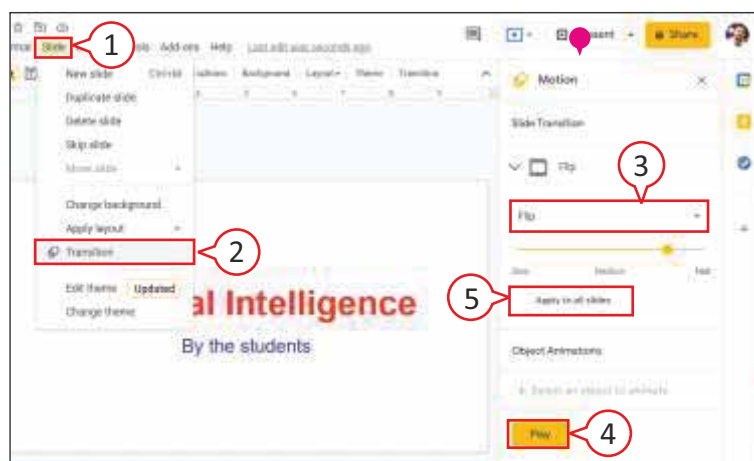
Bold,
Italic &
Underline

Text
Color

Alignment

SLIDE TRANSITION

A **transition** is a visual effect that appears when you move from one slide to another.



1. Click on **Slide**.
2. Click on **Transition**.
- **Slide Transition** options appears on the right.
3. Click on down arrow and select the transition effect.
4. Click on **Play** button to preview the effect.
5. Click on **Apply to all slides** to apply the effect in all slides.

PRESENTING YOUR SLIDES

After creating the presentation, you can present it to the audience.

1. Bring the first slide then click on **View** and then select **Present** option. The presentation will appear in a new window, using the entire screen.
2. To display the next slide, click anywhere on the current slide.
3. Repeat step 2 until you have reached at the end of the slide show. You can press **Esc** key to end the slide show any time.

SHARING YOUR PRESENTATION

You can share your presentation with your friends, family, etc. through email.

1. Click on **Share** button on the upper right side of the Google Slides.

Share with others dialog box appears.

2. Type the **e-mail ID** of the receiver.

You can share the file to more people by typing their respective e-mail IDs.

3. Click on **Send**. *The email is sent to the people you shared with.*

SHARING A LINK

After creating the presentation, you can also share it with other people through a link.

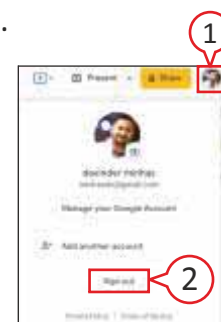
1. Click on **Share** button. **Share with others** dialog box appears.
2. At the top right, click on **Get shareable link**. *A link of your file will appear.*
3. Copy and paste the link in an e-mail or anywhere you want to share it.

SIGNING OUT FROM GOOGLE SLIDES

After finishing your work in Google Slides, you must logout from it.

1. Click on **Google Account**. A pop-up window appears.
2. Click on **Sign out** button.

The Google Slides window will close.





NATIONAL CYBER OLYMPIAD

SAMPLE PAPER — SYLLABUS 2021-22

CLASS
5

SYLLABUS

Section-1: Patterns, Analogy and Classification, Coding-Decoding, Geometrical Shapes, Mirror Images, Water Images, Embedded Figures, Direction Sense Test, Ranking Test, Alphabet Test and Logical Sequence of Words, Puzzle Test.

Section-2: Input and Output Devices, Hardware, Software, Storage Devices, Memory –Primary & Secondary Memory, MS-Paint, Introduction to Multimedia, MS-Word (Paragraph formatting Using Paragraph group, Drop Cap, Document Views, Inserting Graphics-Pictures and Shapes, Clip Arts, Symbols, SmartArt, Multimedia Objects, Text Box, Inserting Header and Footer in a document and exploring its features), Introduction to MS-PowerPoint(Component of MS-PowerPoint window and its features, Inserting Graphics-Pictures and Shapes, Clip Arts, Symbols, SmartArt, Multimedia Objects, Text Box, Inserting Header & Footer and exploring its features, Running slide shows, Presentation Views), Internet, Computer Networks, Using Windows 7, Latest Developments in the field of IT.

Section-3: Higher Order Thinking Questions - Syllabus as per Section – 2.

Questions are based on Windows 7 and MS-Office 2010.

Total Questions: 50

Time: 1 hr.

PATTERN & MARKING SCHEME			
Section	(1) Logical Reasoning	(2) Computers & IT	(3) Achievers Section
No. of Questions	10	35	5
Marks per Ques.	1	1	3

LOGICAL REASONING

1. How many times exactly two X's occur together?

X Y X X Y X Y Y X Y X Y Y X X Y X Y X X

- (A) 5 (B) 4 (C) 2 (D) 3

2. Which of the following options replaces the question mark (?) in Fig. (X)?

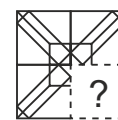
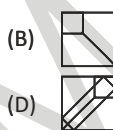
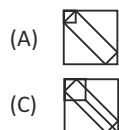


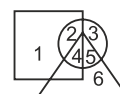
Fig. (X)

3. If 'MATHEMATICS' is coded as 'SCITAMEHTAM' then how will 'OLYMPIAD' be coded?

- (A) DAMPOMYL (B) OLYMDIAP (C) DAIPMYLO (D) IADYMPLO

4. Which number lies in the circle and square, but not in the triangle?

- (A) 1 (B) 2
(C) 3 (D) 6



COMPUTERS AND INFORMATION TECHNOLOGY

5. Which of the following is NOT a Windows 7 Aero feature?

- (A) Snap (B) Peek (C) Bump (D) Shake

6. A search engine that searches multiple search engines is called ____.

- (A) Metasearch Engine (B) Universal Search Engine (C) Search Portal (D) Search Station

7. Multimedia is used for many purposes like ____.

- (A) Education (B) Advertising (C) Playing games (D) All of these

8. Find the odd one out.

- (A) (B) (C) (D)





9. What is the significance of star icon placed adjacent to the sender name in inbox of Gmail?

- (A) To mark them as spam message.
(B) To easily mark certain messages as important or to indicate that you need to reply to them later.
(C) Star marked mail will be deleted after some time automatically.
(D) Star marked mail will move to trash folder after 30 days.











10. Which of the following devices emits computer audio as audible audio?

- (A) Trackball (B) Cursor (C) Webcam (D) Speaker

11. Which of the following icons of MS-Power Point 2010 is used to insert the characters like □, ©, etc. that are not present on the keyboard?
 (A)  (B)  (C)  (D) 
12. The small picture representing a program in Windows 7 is called _____.
 (A) Icon (B) Picture (C) Image (D) Drive
13. While working in MS-Paint, the option which is used to show the drawing in a small reference window is _____.
 (A) Grid (B) Zoom in (C) Bitmap (D) Thumbnail

ACHIEVERS SECTION

14. Mr. Kumar is making a presentation for his company in which he is required to include some graphics, audio, and video clips. Which of the following options will help him to insert a video clip in MS-PowerPoint 2010?
 (A)  (B)  (C)  (D) 
15. Which of the following type of expansion cards can be inserted into a computer motherboard via expansion slot, to allow television signals to be received by a computer system?
 (A)  (B)  (C)  (D) 

SAMPLE ANSWER SHEET

1. Name: If your name is SAURAV GUPTA, then you should write as follows:

S A U R A V G U P T A

2. Father's Name: If your father's name is DINESH GUPTA then you should write as follows:

D I N E S H G U P T A

SCHOOL CODE				
M	H	O	S	4
A	1	0	1	0
B	2	1	2	1
C	3	2	3	2
D	4	3	4	3
E	5	4	5	4
F	6	5	6	5
G	7	6	7	6
H	8	7	8	7
I	9	8	9	8
J				
K				
L				
M				
N				
O				
P				
Q				
R				
S				
T				
U				
V				
W				
X				
Y				
Z				

3. SCHOOL CODE

Write your school code i.e. if your school code is MH0547 darken as follows:

Darken the circle

6. GENDER

If you are a boy then darken Male circle

GENDER	
MALE	<input checked="" type="radio"/>
FEMALE	<input type="radio"/>

4. CLASS


If you are in Class 10 then you should darken as follows:

CLASS		ROLL NO.	
1	0	5	8
0	1	0	0
1	2	1	1
2	3	2	2
3	4	3	3
4	5	4	4
5	6	5	5
6	7	6	6
7	8	7	7
8	9	8	8
9		9	9

5. ROLL NO.

If your roll no. is 587, then you should write and darken the circles as follows:

Darken the circle

CORRECT way to darken the circle 

WRONG way to darken the circle 

7. If your choice for Answer 1 is C, then you should darken the circle as follows: 1. ☐ A ☐ B ☒ C ☐ D

MARK YOUR ANSWERS WITH HB PENCIL/BALL POINT PEN (BLUE/BLACK)

National Cyber Olympiad

1. A B C D
 2. A B C D
 3. A B C D

4. A B C D
 5. A B C D
 6. A B C D

7. A B C D
 8. A B C D
 9. A B C D

10. A B C D
 11. A B C D
 12. A B C D

13. A B C D
 14. A B C D
 15. A B C D

ANSWERS

1. (D) 2. (C) 3. (C) 4. (B) 5. (C) 6. (A) 7. (D) 8. (D) 9. (B) 10. (D) 11. (D) 12. (A)
 13. (D) 14. (D) 15. (A)

SPACE FOR ROUGH WORK