
UNIT 2 MICROSOFT WINDOWS

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2.0 OBJECTIVES

After studying this unit, you should be able to:

- develop understanding of selected Windows through its various versions;
- identify the key elements of Windows Desktop;
- develop skills on how to work with Windows;
- identify options available to customize the appearance and functionality of your computer;
- use various accessory applications to perform common functions like calculate, paint, etc.; and

- work with Windows Explorer to perform various file and folder related operations.

2.1 INTRODUCTION

This practical highlights the need for an operating system with special emphasis on Windows, a GUI (Graphical User Interface) based operating system. It highlights the key features that have led to the popularity of Windows, and also details the various utilities and applications available to perform common and specific functions.

2.2 MICROSOFT WINDOWS

Microsoft Windows is an operating system. This implies that it belongs to the **system software** category and performs three major functions:

- a. As a resource manager it controls and coordinates the various resources of the computer like memory, storage and input/ output devices.
- b. As a disk manager it manages all the files and folders and allows a user to perform various file and disk management tasks.
- c. Also, it acts as an interpreter between other software and hardware.

One would have heard of many operating systems in the market but MS Windows is one of the most widely used operating systems and it would not be wrong to say that it enjoys a near about monopolistic market share.

2.2.1 Selected Versions of Windows

MS Windows is a Graphical User Interface (GUI) based operating system having commands and options represented on the screen in the form of small images, commonly known as **icons**. The user need not remember any commands; s/he can select the desired icon by simply clicking on it using the mouse.

MS Windows has progressed, in features, over time. This resulted in various versions, with each version having a marked improvement over the previous one. An overview of the selected versions is as follows:

Window 95

- It was the first complete Operating System
- It was released on August 15, 1995
- It merged MS-DOS and Windows products
- It simplified plug and play features
- Taskbar and Start menu was introduced with this Windows OS
- Advanced from 16 bit GUI to 32 bit GUI
- Long file names could be saved
- Initially, computers with Windows 95 did not have Internet Explorer installed but by the release date of Windows 95, the first version of Internet Explorer was installed in the software
- On December 31, 2001, Windows declared this version of OS outdated

Windows 98

- It was released to manufacturing on May 15, 1998

- It was a 16 bit and 32 bit product based on MS DOS
- It was not an entirely new version but just a tuned-up version to Windows 95
- Internet Explorer 4.01 was released along with this Windows version
- It did not support USB printers or mass storage devices
- An update to this version “Windows SE” was released in 1999

Windows 2000

- It was officially released on February 17, 2000. However, its manufacturing had begun in late 1999
- A core set of features was followed for manufacturing Windows 2000 but 4 different editions, targeting different sectors of the market were released. These included: Server, Professional, Advanced Server and Datacenter Server
- It was considered as one of the most secure OS ever
- A local disk manager was introduced with these Windows
- Multilingual User Interface – it supported many different languages

Windows XP

- The official product was released on October 25, 2001
- Advanced portable PC support
- Automatic wireless connection support
- Fast start-up
- Better Graphical User Interface (GUI)
- Help and support centre

Windows Vista

- It was released on January 30, 2007
- It had an upgraded version of Graphical User Interface
- It was the first operating system to use DVD-ROM for installation

Windows 7

- It was released on October 22, 2009
- A large number of new features were introduced
- Redesigned Windows shell with an updated taskbar
- Libraries were added in the file management system
- A few features from the past Windows were removed
- Extended hardware support

Windows 8

- It was released for retail on October 26, 2012
- Optimizations for touch-based
- Installed in new devices like Laptops, Mobile phones, tablets, etc.
- Increased integration with cloud services

- Windows Store service for software distribution
- Task manager had been redesigned
- New security features were introduced
- Online Applications could be directly downloaded

Windows 10

- It was released on July 29, 2015
- Addresses shortcomings in the user interface first introduced with Windows 8
- A virtual desktop system
- It had the ability to run windows store apps within windows on the desktop rather than in the full-screen mode
- Included new icons
- To reduce storage shortcomings, Windows 10 automatically compresses the file size.

Check Your Progress 1

Explain the features that have contributed towards widespread usage of Windows as an operating system?

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2.2.2 A First Look at Windows

Once the Windows is loaded into the computer's memory, the focus is placed on the desktop. The desktop covers the entire computer screen and is the interface through which all the other programs can be accessed. As seen in Fig 2.1, the desktop consists of Icon's that represent applications that can be loaded onto your computer (by clicking on the Icon), and the taskbar.

The desktop is customizable which means that icons can be added, deleted, background and color scheme changed according to user's personal preferences. This is the reason why the desktop could vary from computer to computer.



Fig 2.1: Windows desktop showing its basic elements

2.3 WINDOW DESKTOP

As seen in Fig 2.1, the key elements of a Windows desktop include:

- Icons
- Taskbar

These are explained as:

a) *Icons*

Icons are labeled pictures and represent applications that can be loaded into the computer's memory. Typically, these can be classified into four types also shown in Fig 2.2 as follows:



Fig 2.2: Types of Icons

- *Program Icon*
When double clicked, it loads the corresponding application from computer's memory and runs the application in a windows.
- *Shortcut Icon*
These provide an alternate way to open programs, folders and documents. These icons are characterized by a small curved arrow on the lower left hand corner and their labels generally begin with 'Shortcut to'. Deleting such an icon does not delete the actual associated program, but deletes only the shortcut pointing to it.
- *Folder Icons*
When double clicked, they open the respective folder and display the contents of the folder.
- *System Icons*
Are mandatory programs or files located on the desktop. Users are not allowed to delete system icons. Bin, 'My Computer', and 'Network Neighborhood' are all examples of system icons.

b) *Taskbar*

The Windows is located at the bottom of the desktop and comprises several elements – Start button, Quick launch and the System tray. (Fig 2.3)

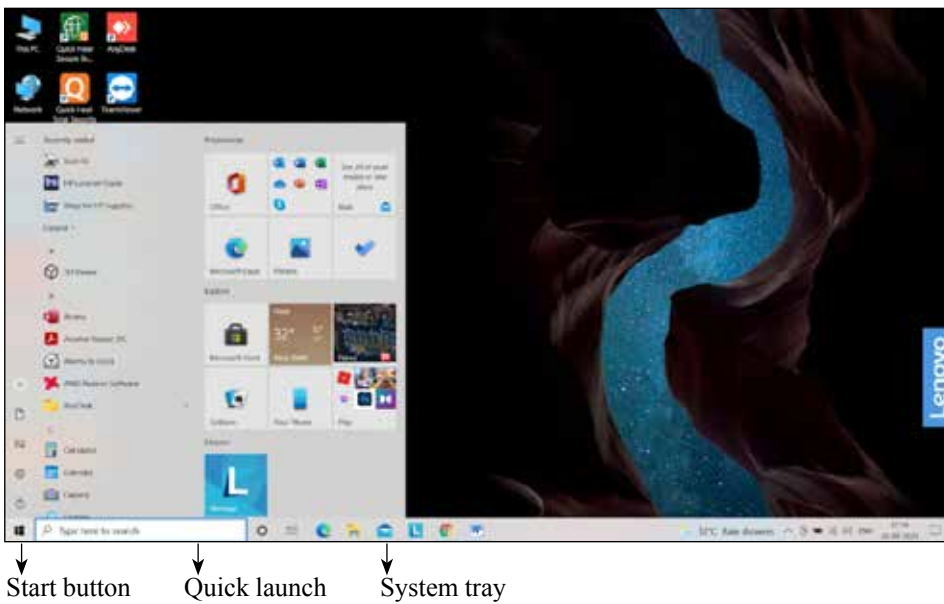


Fig 2.3: Windows taskbar

- **Start Button:** This provides access to the ‘Start Menu’. All applications and tools available in the computer can be accessed from this menu. It may be of interest to know that the form, in which the menu is displayed on clicking the start button, is customizable.
- **Quick Launch:** It allows for an immediate access to a variety of elements. By clicking on the icon, the associated program or Windows tool is launched. Icons for different programs can be added to the quick launch
- **System Tray:** It displays the applications that are currently running. It also has a clock (on the extreme right) that displays the current time and can be set by the user.

Check Your Progress 2

List the basic elements of a Windows Desktop?

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2.4 WORKING WITH WINDOWS

There are various commands and tools by which working on/with windows has been made easy. This includes the following:

a) Control Box

The Windows control box helps a user to control the active Window. The three options in a window control include Minimize, Maximize/Resize and Close Window.(Fig 2.4)

- **Minimize Window**
When this button is clicked, the active Window disappears and is replaced by a button. It does not close the application but simply removes it from the user's view. Clicking the button in the Taskbar will restore the Window to its previous size.
- **Maximize/Resize Window**
Once this button is pressed it is replaced with the Restore button, which will window to its previous size.
- **Close Window**
Clicking on this button closes the Window along with the application that is running within it.

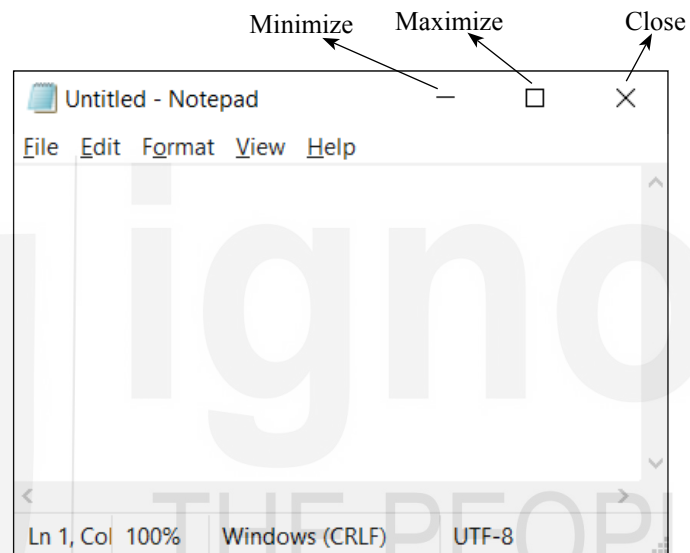


Fig 2.4: Control Box

b) Resizing Window

Any Window can be re-sized by moving the mouse pointer across the border of the Window till the pointer changes into a double-headed arrow. Then press the left mouse button and hold it down, drag the border of the window in the desired direction and once the window is of the desired size, release the mouse button. (Fig 2.5)

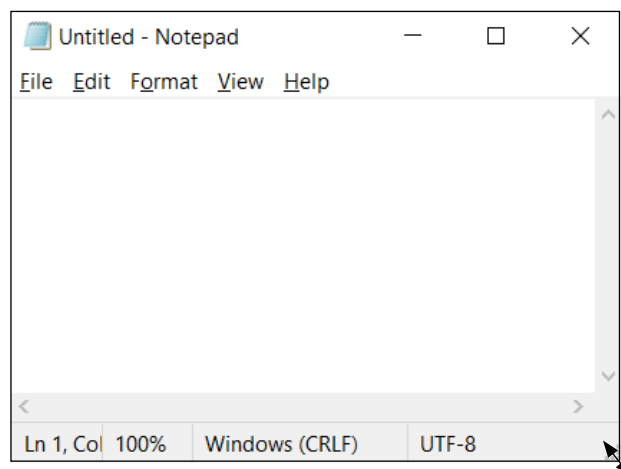


Fig 2.5: Resizing window

c) *Moving Windows*

Moving a Window is possible, very obviously, only if it is not maximized. You can move the Window by simply placing the mouse pointer on the Window's title bar, left clicking the mouse, holding it down, drag the Window to the new location.

d) *Switching Between Multiple Windows*

Windows allows opening multiple applications at the same time but only one among them can be active at a time. This active Window is said to have the focus. To switch between Windows press Alt + Tab from your keyboard. Icons representing each of the running programs are displayed in the centre of the screen. With one of the icons in a box (representing the active Window) and the name of the application at the bottom, holding down the Alt, continue pressing the Tab key to cycle through the programs. Release both the keys when the desired program receives focus.(Fig 2.6)



Fig 2.6: Switching between multiple windows

2.5 EXPLORING THE CONTROL PANEL

The control panel provides options for you to customize the appearance and functionality of computer, The Control Panel is a component of Microsoft Windows that provides the ability to view and change system settings. It consists of a set of applets that include adding or removing hardware and software, controlling user accounts, changing accessibility options, and accessing networking settings.

The control panel can be accessed as shown below in Fig 2.7. The detailed view of the panel is given in Fig 2.8

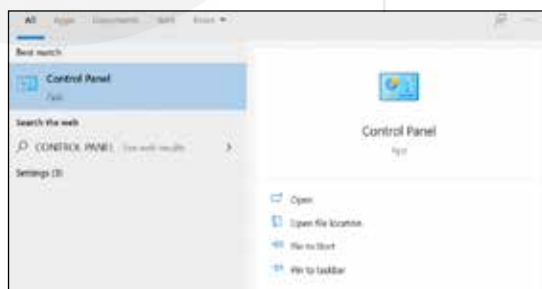


Fig 2.7: Control panel

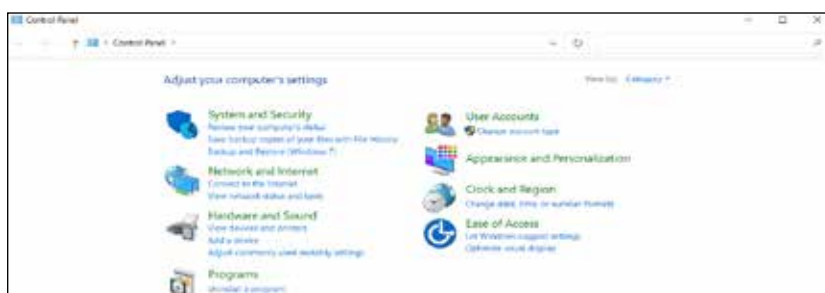


Fig 2.8: Detailed view of the Control panel

Some commonly used control panel utilities are given below and are further explained as:

- Change Date and Time
- Desktop background
- Lock screen/ Screen saver
- Add or Remove program
- Install Printer

Lets discuss these in detail in the upcoming sections.

2.5.1 Date and Time

The ‘Change the Date and Time’ option lets you change the date (Year, Month, and Day) and time as displayed on your computer screen. It is this date and time that is associated with each file as it is created or modified. It is, therefore, important that your computer works against the correct date and time settings.

Inside your computer is a Real Time Clock (RTC). This along with a battery cell powered CMOS (complementary Metal-Oxide Semiconductor) ensures that the basic settings of your computer are not lost once the computer is switched off.

Steps to Change the Date and Time Settings:

After selecting Date, Time, Language and Regional options from the control panel categories; select change the date and time from the tasks screen. Then

- Click once on the **Date & Time**;
- Click on the month roll-down list to select the month;
- Click here to change the year;
- Click on the current date;
- Click here to change the time;
- Click on **Apply** button to make these changes applicable; and
- Click on OK button to continue.(Fig 2.9)

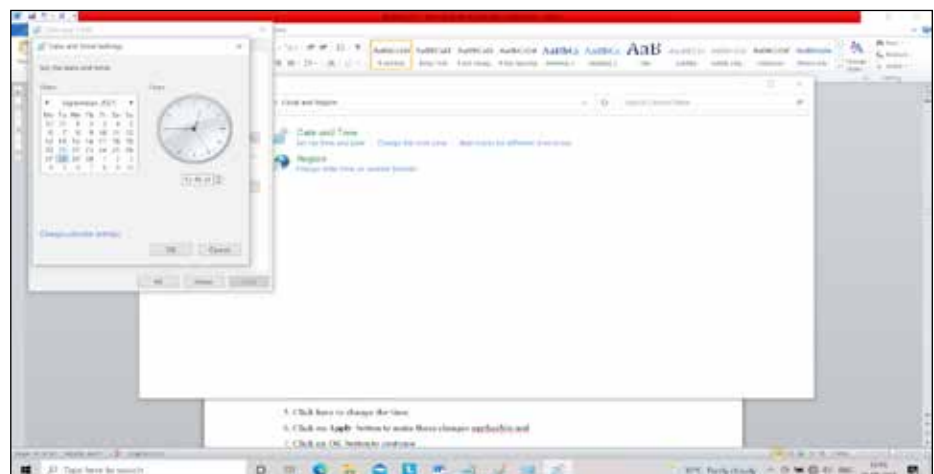


Fig 2.9: Changing date and time

2.5.2 Desktop Background

The desktop background, commonly understood as wallpaper, does exactly what your room wallpaper does - decorates your surroundings giving a different look and feel. You can choose from the standard wallpaper options provided in windows.

Steps to Change the Desktop Background:

After selecting **Appearance and Themes** from the control panel;

- Select **change the desktop background** from the tasks screen (Fig 2.10)

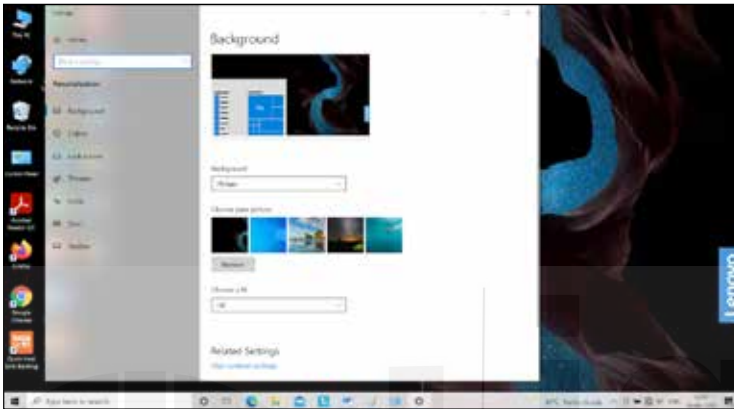


Fig 2.10: Changing desktop background

- Click once the **Desktop** tab;
- Choose and click on the background from the list provided;
- Click here to choose how you want the background displayed stretched, tiled, or centered;
- Click here to choose the color of the background
- Click on the **Apply** button to apply the changed setting and
- Click on OK button to continue.

2.5.3 Lock Screen

The screen saver is a moving image or pattern that appears on your monitor when you leave your computer idle for a specified period of time (this time period can be set) (Fig 2.11). Having a screen saver is important. A static image on the screen for a long period of time can damage the monitor as a result of burning the delicate phosphorus on the inside surface leaving a ghost of the image on the screen. Newer computers come with an in-built power saving option which powers down the monitor as soon as the screen saver comes into effect, thereby saving electricity.



Fig 2.11: Lock Screen

2.5.4 Add or Remove/ Uninstall Programs

The Add or Remove programs options supports four major tasks:

- **Uninstall a program:** Remove existing Windows programs
- **Add New Programs:** Add new windows programs
- **Windows Components:** Add or remove Windows programs like Accessories and Utilities, fax services, indexing services, windows media player
- **Set Program Access and Defaults:** Setting of certain default programs for certain activities such as web browsing or sending e-mail, programs accessible from start menu, etc. (Fig 2.12)

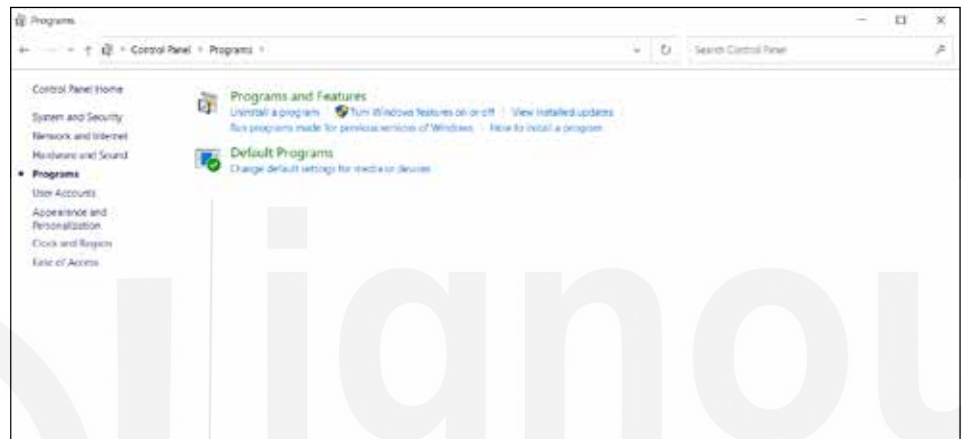


Fig 2.12: Add/remove program options

Steps to Remove a window program

After selecting **Add or Remove/ uninstall program** from the control panel categories; Click on **uninstall** to remove the highlighted program. Alternatively highlight the program to be removed (by using arrow keys to move Up or Down) and then click on **Remove**. (Fig 2.13)

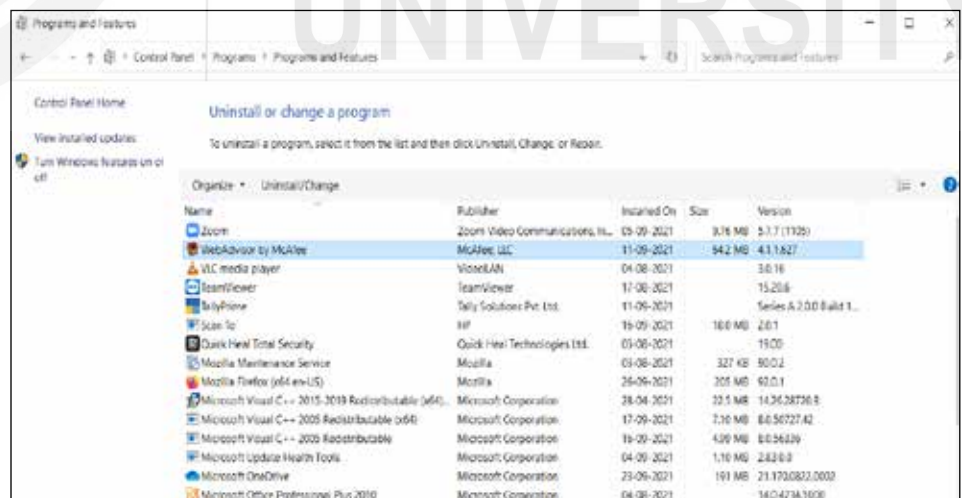


Fig 2.12: Removing a program

Steps to Add a New Program

After selecting **Add or Remove Programs** from the control panel categories;

1. Click on **Add New Programs**

2. Click the source media to install a new program Alternatively, you could click on the **Windows Update** button to perform system updates using the internet (Fig 2.13).

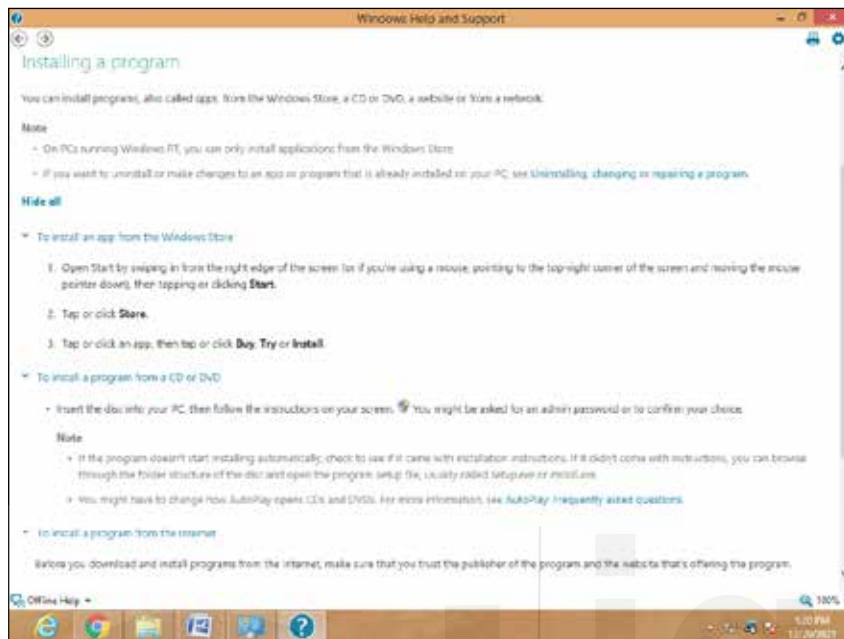


Fig 2.13: Installing/adding a program

2.5.5 Installing a Printer

This option allows you to install new printers (local as well as network) on your machine. To install a printer, simply provide path of folder where printer drivers are stored.

Steps to Install a Printer:

After selecting **Printers and Other Hardware** from the control panel categories:

- Select **Devices and Printers**
- Select **Add a printer** (Fig 2.14)

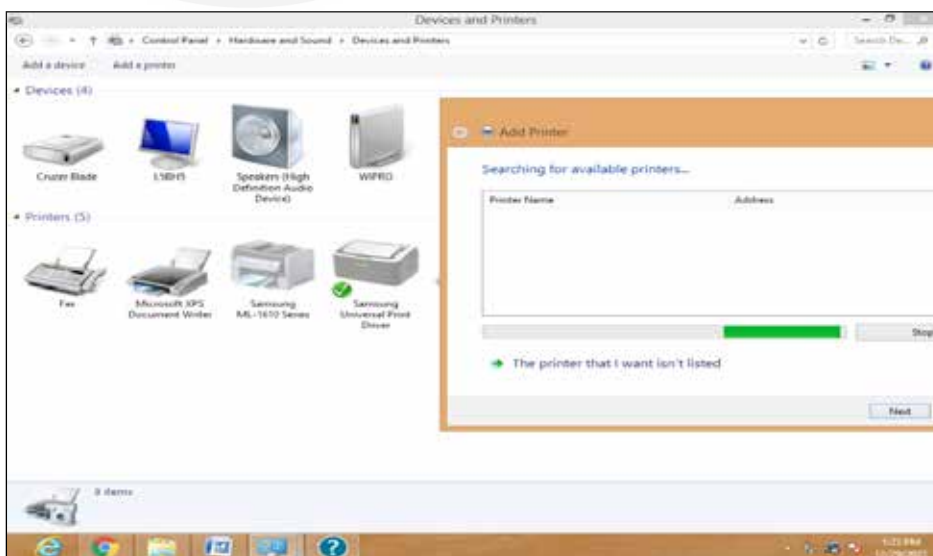


Fig 2.14: Adding printer

You can wait for all of the printers installed in your organization to populate, but it will take a while and the list will be long. It will be quicker to use Find a Printer....

- Select **The printer I want isn't listed** (Fig 2.14)
- Click **Next**

Select **Find a printer in the directory, based on location or feature** (Fig 2.15)

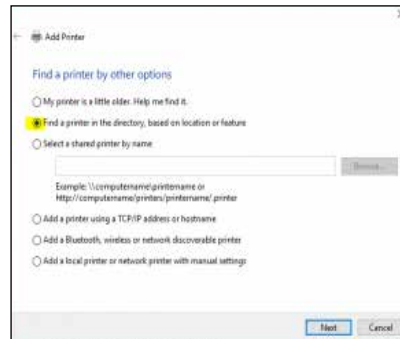


Fig 2.15: Find printer

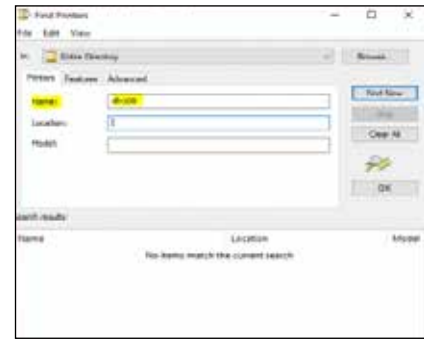


Fig 2.16: Entering the location

- Click **Next**

Next to **Name** enter the prefix of the building followed by the room number (Fig 2.16)

- Click **Find Now**

NOTE: If you can't find the printer you are looking for, you may not have rights to it or you may have the name wrong.

- Double click on the **printer** you want to add (Fig 2.17). Then a screen as seen in Fig 2.18 will appear and then Click **Next**

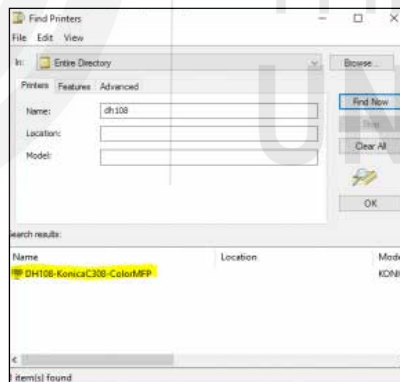


Fig 2.17: Click on the printer to be added

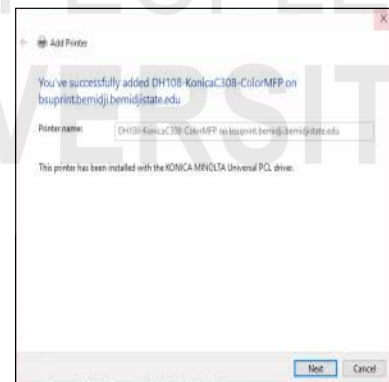


Fig 2.18: Click next

- Again Click **Next**. Check **Set as the default printer** if desired (Fig 2.19)
- Click **Print a test page** if you like
- Click **Finish**

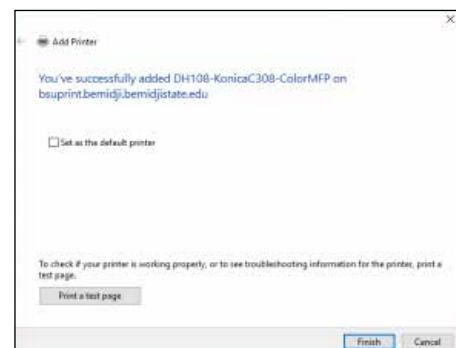


Fig 2.19: Select check as default printer

2.6 COMMON ACCESSORY APPLICATIONS

Calculator, Paint and Media Player are some of the commonly used windows accessory applications. Lets discuss these.

2.6.1 Calculator

Windows provides a full-fledged calculator just like the one you would otherwise possess. You have the option of using the standard calculator or the scientific one (having functions like cos, sin, tan, etc.). Numbers and operators can be entered using the keyboard the mouse.

Steps to Access the Calculator

Select Start → Accessories → Calculator. This calculator will then be displayed. You can switch between the standard scientific calculator using the **View** menu option on the calculator screen. The screen below shows the standard calculator. (Fig 2.20 and Fig 2.21)

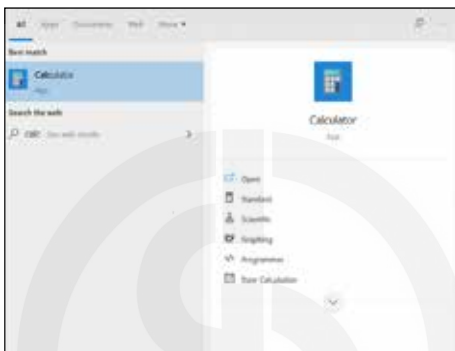


Fig 2.20: Starting the calculator



Fig 2.21: Using the calculator

2.6.2 Paint

Paint is an application that supports your artistic skills. It allows you to create drawings and then edit them in case you are not satisfied with it. You can create pictures using lines, curves, shapes, squares or just free hand drawing. You can also use different colors to make it look attractive.

Paint can be used to create wall papers for your own desktop or to create your company logo. This application is very commonly used to display and edit scanned photos /pictures.

Steps to Access Paint

Select Start → All Programs → Paint. The window then displayed will be the Paint window where you can create, edit and view pictures.(Fig 2.22)



Fig 2.22: Using the paint

2.6.3 Media Player

It is one of the entertainment options on your computer and plays your digital media like CD, DVD Videos, and Internet radio.

Steps to Access the Media Player

Select Start → All Programs → Accessories → Entertainment → Windows Media Player. This will start the media player and display the windows. (Fig 2.23)



Fig 2.23: Accessing windows media player

2.7 WINDOWS EXPLORER

Information in your computer is saved as a file. A **file** is defined as a collection of related information or records. Files can be grouped and placed under **directories**. Grouping of files in directories and sub-directories provides an order to the information placed on your computer. It is much like the files stored in cabinets to classify and group them for easy access. Comparing these, we could say that the cabinet drawers can be related to the directories and sub-directories, and the physical files can be related to the computer files stored in these directories.

The Windows Explorer is a utility that allows you to perform various disk and file management activities like creating folders, copying, renaming and deleting files etc. It represents the contents in a graphical form giving an easy and quick view of your computer contents.

Windows terms directories and sub-directories as **Folders** and **Sub-folders**.

The **folder structure** of Windows can be understood as an inverted tree with the **root** being at the top having folders, sub-folders and files under it - the number of folders and files limited only by the disk capacity. Represented diagrammatically it would look something like as in Fig 2.24.

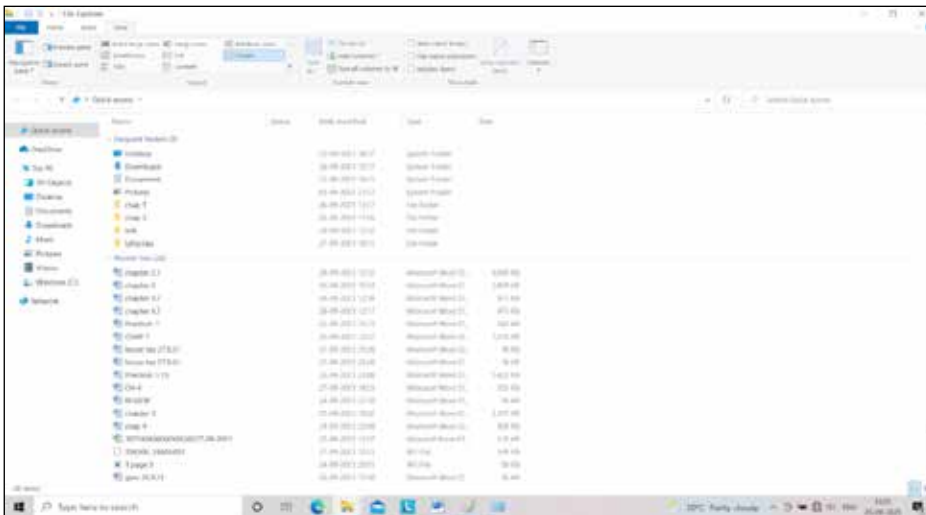


Fig 2.24: Folder structure of Windows

Windows Explorer displays all items in a **tree structure**. A plus sign (+) next to an item indicates that it can be expanded further (like in case of a folder), and a minus sign (-) indicates that it is the expanded view. You can click on the plus sign to reveal or expand the contents of the item. Items that neither have a plus or a minus sign indicate that they are the lowest level in the tree hierarchy.

There is present a **Standard Toolbar** that provides access to the most commonly used functions. A **selected item** is the item that has the current focus (usually highlighted in blue). The **Address Bar** displays the path of the selected item. This item could be a file, folder, or the drive itself. The explorer Window is divided into **two panes - left and right**. The left pane is used to select a drive or folder, the contents of which are displayed in the right pane.

There are various functions that can be undertaken in Windows explorer. They have discussed in the subsections that follow. Lets study them.

2.7.1 Creating Folders

We can create folders and can use them to store files.

Steps to Create a New Folder

- Select the drive 'C' (or folder in case you are creating a sub-folder) in Windows Explorer under which you wish to create the new folder. This can be done by clicking once on the drive name.
- From the **File menu**, point to **New** and click on **Folder**. A new folder appears with a temporary name 'New Folder' in the selected location
- Type the name for the new folder, and press **Enter**

It may be useful to know that folder file names can be up to 255 characters, including spaces.

These, however, cannot contain the following characters:

/ \ : , * ? ' " , . |

Thus, it is advisable to keep the names simple and without any special character. Alternatively, you can also initiate the **New Folder** menu by right

clicking in the right pane of windows Explorer. The screen that appears on doing the same is shown in Fig 2.25:

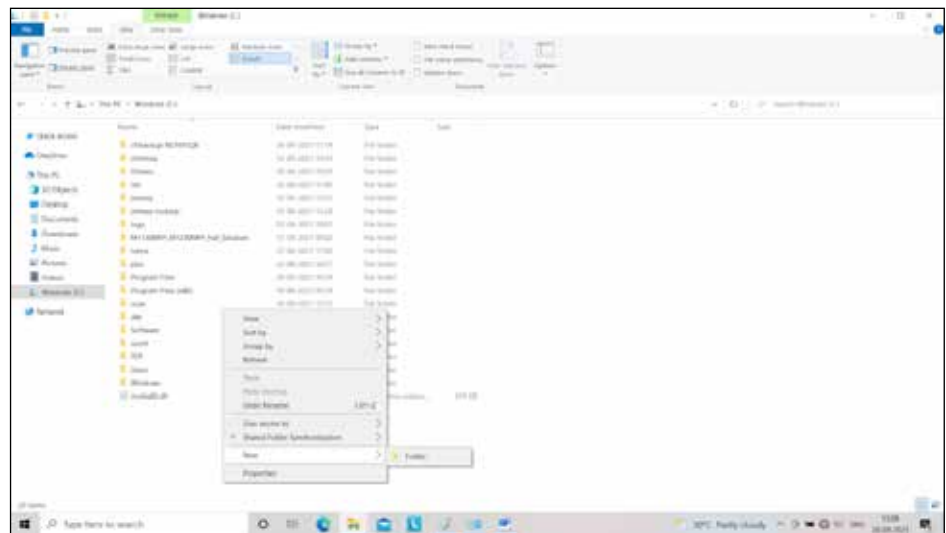


Fig 2.25: Making a new folder

2.7.2 Opening File/Folders

Files or Folders can be opened by double clicking on the same. Opening a Folder simply means displaying the contents of the folder (its sub-folders and files).

As a general rule the file opens with the application it was created and the extension of the file name is an indication of the application.

Steps to Open a File/Folder

1. Select the desired file (or folder) from Windows Explorer; and
2. Double click on the file (or folder) to open it

2.7.3 Copying Files/Folders

Files folders can be copied using the 'Click and Drag' method.

Steps to Copy a File/Folder

1. Click on the file (or folder) you want to move to another location.
2. Keep the mouse button pressed on the highlighted file, drag it to the folder you want to drag it to, and then release the mouse button.
 - You will notice that using this method, if you drag the file (or folder) to the same disk, it will result in moving it while if you drag it to another disk it will be copied.
 - To copy a file using Click and Drag from one folder to another on the same disk, select the desired file, drag the file using the right mouse button and when you reach the desired location, simply right click and select **Copy here** option.
 - You can copy more than one file in a single copy operation. These files could be displayed in continuation or scattered across the folder discontinuous. Described below is how to handle each of these situations:

- a) You can also select a **continuous range of files** as follows:
- ◆ Click on the first file in the range;
 - ◆ Press down the **Shift** key and while holding down the shift key, click on the last file in the range. The selected range will now be highlighted; and
 - ◆ You can now cut and copy them in another location or use the Click and Drag method to do the same (Fig 2.26)

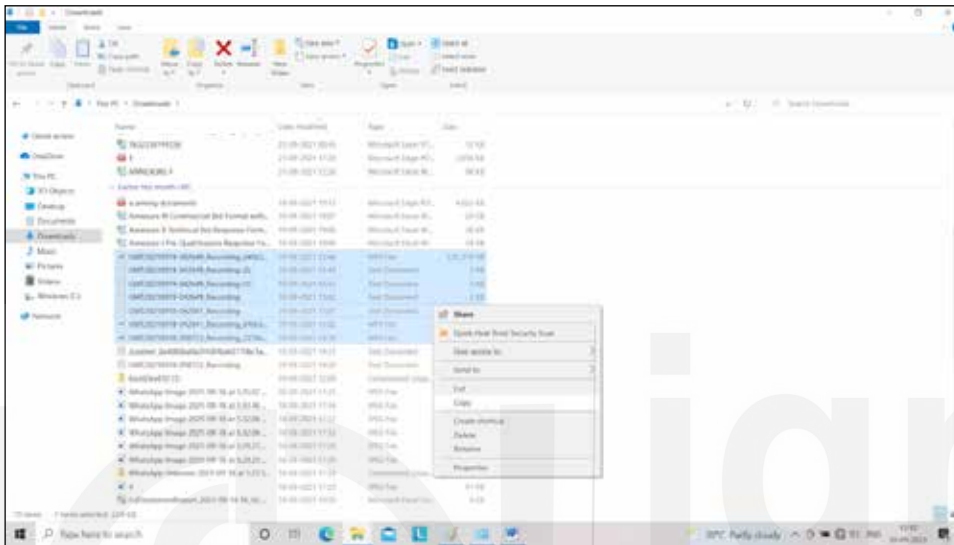


Fig 2.26: Selecting a continuous range of files

- b) You can select a **discontinuous range or separate files** as follows:
- ◆ Click on the first file you want to copy; and
 - ◆ Hold down the **Ctrl** key and while doing so click on another file. You can select more files in the same manner. (Fig 2.27)

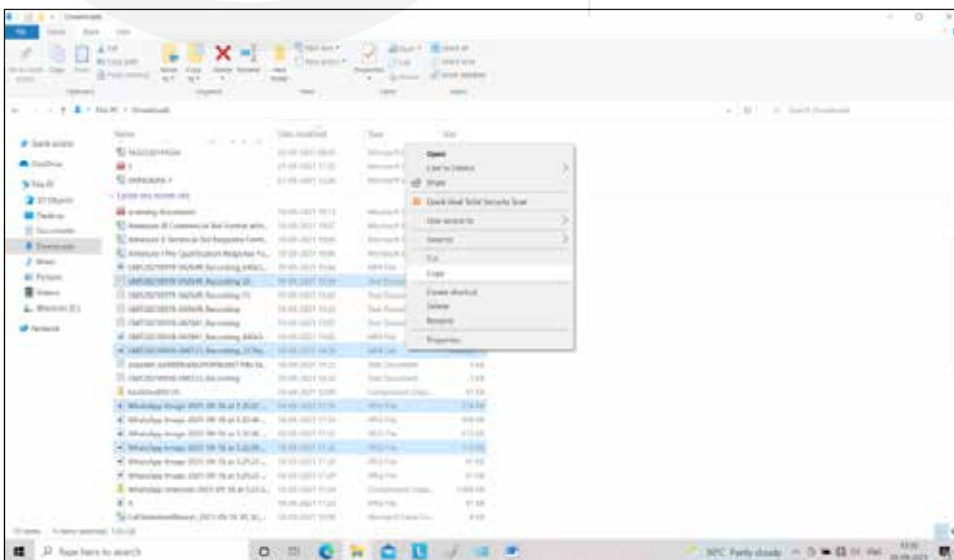


Fig 2.27: Selecting discontinuous range of files

2.7.4 Renaming Files/Folders

Renaming a file (or folder) means assigning a new name to it. The steps below detail how this can be done.

Steps to Rename a File/Folder

- 1) Select the desired file (or folder) from Windows Explorer;
- 2) From the **File** menu click on **Rename**. The focus moves to the earlier highlighted file (or folder) whose name is to be changed; and
- 3) Type the desired name and press **Enter**.

2.7.5 Deleting Files/Folders

Deleting a file (or folder) moves it to the Recycle Bin. Follow the steps below to delete.

Steps to Delete a File/ Folder

- 1) Select the desired file (or folder) from Windows Explorer;
- 2) From the **File** menu click on **Delete**. This displays a dialogue box asking for confirmation to delete;
- 3) Select '**Yes**' from the dialogue box to confirm or select '**No**' in case you change your mind. (Fig 2.28)

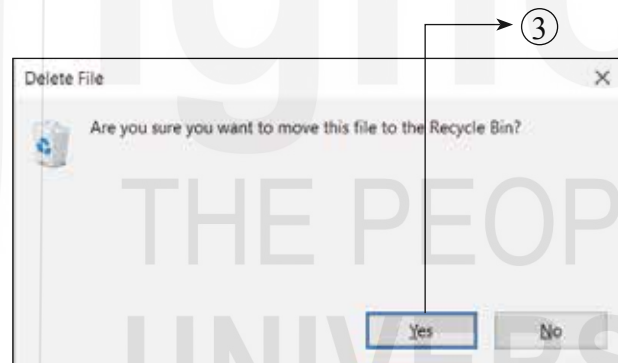


Fig 2.28: Deleting file/folders

Note: Copy, Rename, and Delete options can also be accessed by right clicking on the file.

2.7.6 Changing Folder Views

The file/folder in the Windows Explorer can be displayed using different view forms. You can choose the one that suits you the most.

Steps to Change the Folder Views

1. Select the **View** menu.
2. Various display options are available to select from.
3. These Include Thumbnails, Tile, Icon, List and Details as seen in Fig 2.29;



Fig 2.29: Display options for folder view

The Thumbnails view shows each file or folder as a thumbnail with the name underneath. In **Tile**, files and folders are tiled with the name and details displayed to their right. In **Icon view**, each file or folder is shown as a small icon with the name or description below it. The items are arranged horizontally in this view. In **List** view, analogous to the Icon view but the icons are arranged vertically rather than horizontally. In **Details** view, details like the item name, size, type and date modified is shown.

You can change the size of column widths by dragging the borders (left, right) between the column headings. You can also sort (ascending, descending) the display based on any of these columns by clicking on the corresponding heading.

Check Your Progress 3

Explain the various Windows functions available for file(s)/ folder(s) management.

.....

2.8 LET US SUM UP

In this practical, you have studied the various reasons contributing to the popularity of Windows, the key elements of the Windows Desktop, and the common utilities and applications available. Working with Windows Explorer for managing files and folders has also been discussed.

2.9 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

Microsoft Windows is a Graphical User Interface (GUI) based operating system, (unlike its predecessor DOS). This means that the user need not remember any commands and can select from a list of such commands, commonly known as ‘Menu’, to perform the desired function. A mouse is typically used (even though the keyboard can also be used in most cases) to perform selections. It can also run several applications at the same time supporting seamless data interchange between these applications.

Check Your Progress 2

Once Windows is loaded into the computer’s memory, the user works on the Windows Desktop. The basic elements of the Windows Desktop are:

- **Icons**

The various applications that can be loaded into the computer’s memory. These can be classified as Program Icons, Shortcut Icons, System Icons, and Folder Icons

- **Taskbar**

It is located at the bottom of the desktop and comprises Start Button (provides access to the Start Menu), Quick Launch (immediate access to a variety of elements) and the System Tray (displaying the applications that are currently running).

Check Your Progress 3

Windows Explorer is a utility that represents the contents of your computer in a graphical form. It allows the user to perform various file and folder management tasks like:

- Copy, move, rename, and delete files and folders.
- Create new folders and sub-folders.

2.10 ACTIVITIES

1. Click on the following and explain how did you operate them and what did you find?
 - a) Icons
 - b) Taskbar
 - c) Opening a folder
 - d) Copying a file and renaming it.
2. Check the various folder views and note the differences in them.



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