

# Computer

A computer is an electronic device, operating under the control of instructions stored in its own memory that can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use.

## *Functionalities of a computer*

Any digital computer carries out five functions in total:

- 1- Takes data as input.
- 2- Stores the data/instructions in its memory and use them when required.
- 3- Processes the data and converts it into useful information.
- 4- Generates the output.
- 5- Controls all the above four steps.

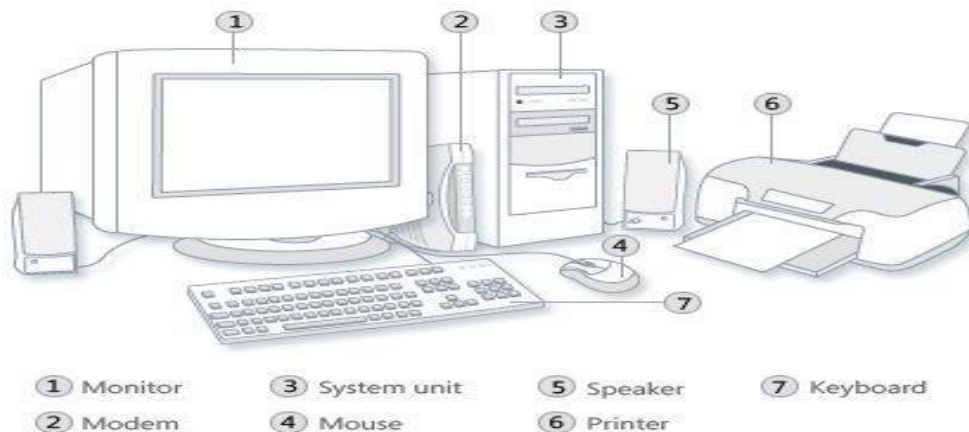


## *Computer Components*

Any kind of computers consists of HARDWARE AND SOFTWARE.



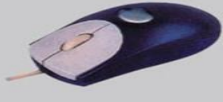









### **1-Hardware:**

Computer hardware is the collection of physical elements that constitutes a computer system. Computer hardware refers to the physical parts or components of a computer such as the monitor, mouse, keyboard, computer data storage, hard drive disk (HDD), system unit (graphic cards, sound cards, memory, motherboard and chips), etc. all of which are physical objects that can be touched.



## Input Devices: -

Input device is any peripheral (piece of computer hardware), Most common are keyboard and mouse that input data to the computer system.

Examples of Manual Input Devices			
Keyboard 	Numeric Keypad 	Pointing Device 	Remote Control 
Joystick 	Touch Screen 	Scanner 	Graphics Tablet 
Microphone 	Digital Camera 	Webcams 	Light Pens 

## Central Processing Unit (CPU): -

A CPU is brain of a computer. It is responsible for all functions and processes. the CPU is the most important element of a computer system.









## Primary Memory: -

1. **RAM:** Random Access Memory (RAM) the memory of the computer system responsible for storing data on a temporary basis, so that it can be accessed by the processor when needed. It is volatile in nature, which means that data will be erased once supply to the storage device is turned off
2. **ROM (Read Only Memory):** ROM is a permanent form of storage. ROM stays active regardless of whether power supply to it is turned on or off. ROM devices do not allow data stored on them to be modified.

## Secondary Memory: -

It's the storage of the computer that Stores data and programs permanently: it is retained after the power is turned off; it has many types like Hard Disk Drive (HDD).

**Output devices:** -An output device is any piece of computer hardware equipment used to show the results of data processing carried out by a computer.

Examples of Output Devices			
CRT Monitor 	TFT Monitor 	Laser Printer 	Inkjet Printer 
Dot Matrix Printer 		Speakers 	
Plotters 		Multimedia Projectors 	

## 2-Software

Software is a generic term for organized collections of computer data and instructions, it has two types, **system software like Microsoft windows** and **application software like adobe Photoshop**.

### Computers classification

Computers can be generally classified by size and power as follows, though there is Considerable overlap:

- **Personal computer:** A small, single-user computer based on a microprocessor.
- **Workstation:** A powerful, single-user computer. A workstation is like a personal computer, but it has a more powerful microprocessor and a higher-quality monitor.
- **Minicomputer:** A multi-user computer capable of supporting from 10 to hundreds of users simultaneously.
- **Mainframe:** A powerful multi-user computer capable of supporting many hundreds or thousands of users simultaneously.
- **Supercomputer:** An extremely fast computer that can perform hundreds of millions of instructions per second.

## Computer Viruses

Viruses: A virus is a small piece of software that attach itself to a real program and aim to cause harm to the computer system. For example, a virus might attach itself to a program such as a spreadsheet program. Each time the spreadsheet program runs, the virus runs too, and it has the chance to reproduce (by attaching to other programs).

### What are some tips to avoid viruses and lessen their impact?

- Install anti-virus software and Update it and use it regularly.
- Make sure you back up your data.

## Operating System (OS):

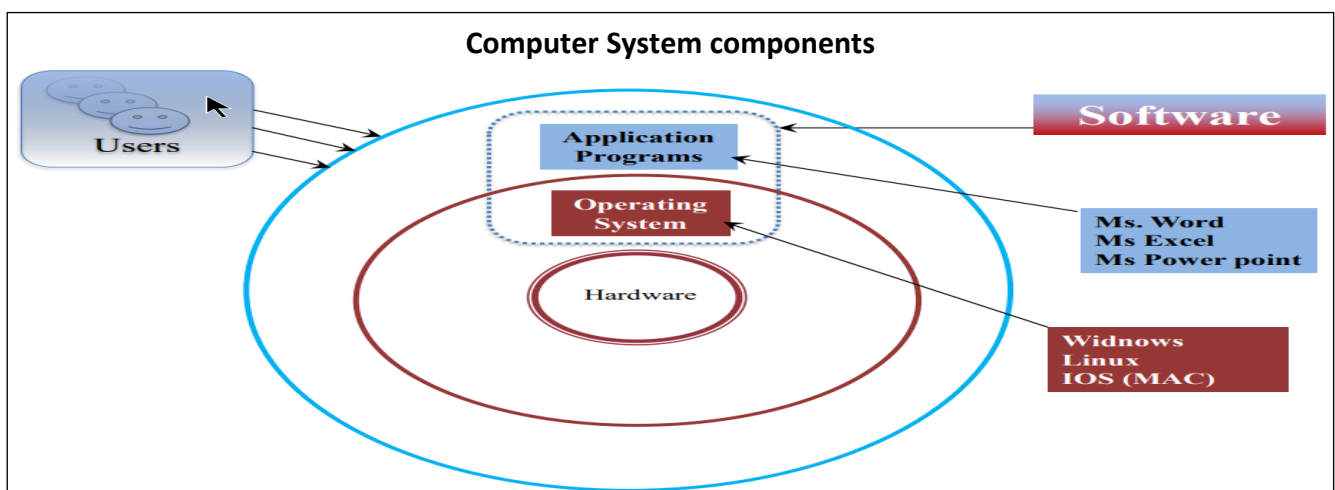
The operating system is a program that installed on a computer to manage the hardware and the software components.

The three most common operating systems for personal computers are Microsoft Windows, Apple Mac OS X, and Linux.



Graphical User Interface (GUI): Modern operating systems use a graphical user interface, or GUI (pronounced gooey). A GUI lets you use your mouse to click icons, buttons, and menus.

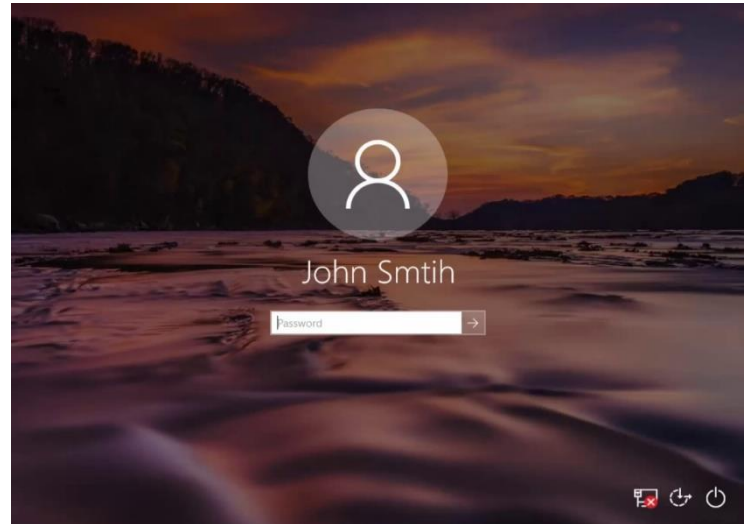
Before GUIs, computers had a command-line interface, which meant users had to type every single command to the computer and the computer would only display text.



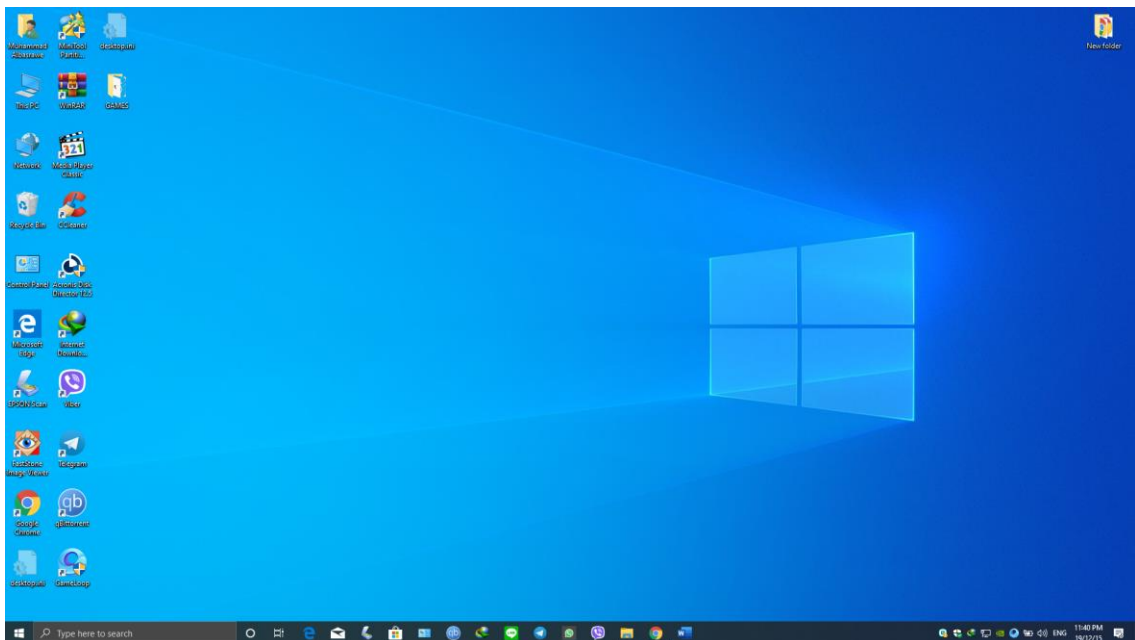
Windows 10 is a personal computer operating system produced by Microsoft. It is the successor to Windows 8.1 and was released in 2015.

An operating system allows your computer to manage software and perform essential tasks. It is also having a Graphical User Interface (GUI) that allows you to visually interact with your computer's functions in a logical, fun, and easy way.

*The first screen appears after you turn on the power of computer is the welcome screen followed by a password screen if there is one.*



*After entering the password correctly, the desktop of the computer will be shown.*



## The Desktop

The Desktop is the main Windows 10 screen (see image above). It is the work area where dialog boxes, windows, icons, and menus appear, the Windows 10 desktop contains items you can use to do your job. For instance, from your desktop, you can perform file-management tasks and run software applications. You can customize the appearance of the desktop to suit your preferences.

### **Desktop Icons**

The Desktop is where you'll find icons (small pictures) for many of your most frequently used programs. You'll most likely see icons for Computer, Documents, Recycle Bin, and Internet Explorer.

**Computer** – Allows you to see what drives are attached to your computer (for example, your local hard disk drive, your CD/DVD drives, any networked shared drives, and external drives, such as a USB flash drive). You can also view the files that are located on these drives.

**Documents** – Supplies a 'catch-all' place for your personal files. Within here you can see your files, any shared files from other computer users and any music or pictures you may have stored. The Documents folder will sometimes be identified by your name instead of the word Documents.

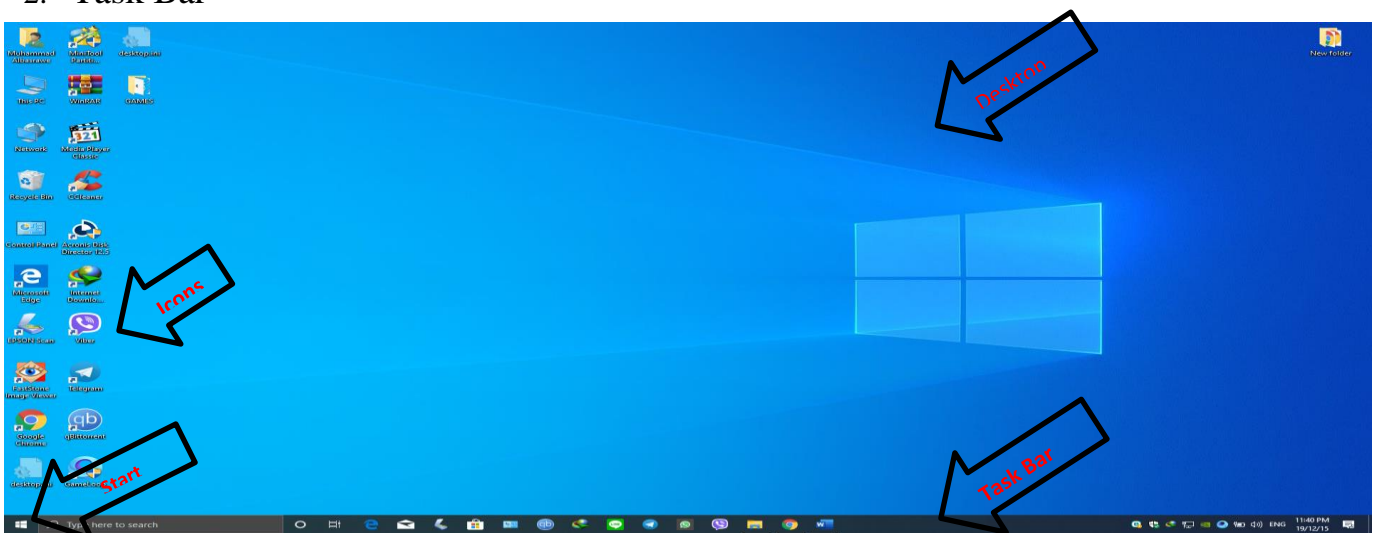
**Recycle Bin** – Stores any files you delete until you empty it.

**Edge Browser** – (in older windows' versions it was called internet explorer) is a web browser developed by Microsoft. It was first released for Windows 10 and Xbox One in 2015, then for Android and iOS in 2017.

### **The Desktop Components**

The desktop for Windows 10 consists of two main components.

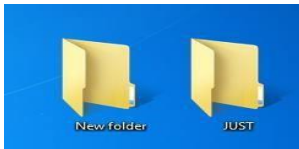
1. Desktop that contains many components like icons, file, folder, shortcut. Etc.)
2. Task Bar



## Desktop Components

**Icons:** An icon is a graphic image, a small picture or object that represents a file, program, web page, or command. Icons help you execute commands, open programs, or documents quickly. To execute a command by using an icon, click or double-click on the icon. It is also useful to quickly recognize an object in a browser list. For example, all documents using the same extension have the same icon.

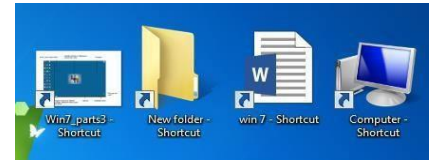
We can classify icons as the following: Folder Icons, File Icons, Shortcut Icons.



Folder Icons



File Icons



Shortcut Icons

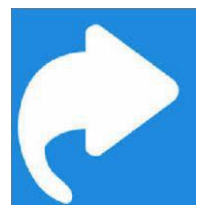
### What is the difference between a file, a folder, and a shortcut?

All the data on your hard drive consists of files and folders. The basic difference between the two is that files store data, while folders store files and other folders. The folders, often referred to as directories, are used to organize files on your computer. The folders themselves take up virtually no space on the hard drive. Files, on the other hand, is a collection of data. stored in one unit, identified by a filename. And filename period file extension can range from a few bytes to several gigabytes. They can be documents, programs, libraries, and other compilations of data.

File name consists of two parts, name, and extension.



A shortcut is a link that points to a program on the computer. Shortcuts allow users to create links to their programs in any folder, Start bar, Taskbar, Desktop, or other locations on their computer. A shortcut in Windows is commonly identified by a small arrow in the bottom corner of the icon.



**Recycle bin:** The Recycle Bin is a location (Folder) where deleted files are temporarily stored on Microsoft Windows. The Recycling Bin allows users to recover files that have been deleted in Windows.



**Computer:** Computer allows the user to explore the contents of their computer drives as well as manage their computer files. Once My Computer is open, you'll see all available drives on your computer. For most users, you'll only be concerned with the Local Disc (C:) drive, which is the hard drive part that stores the operating

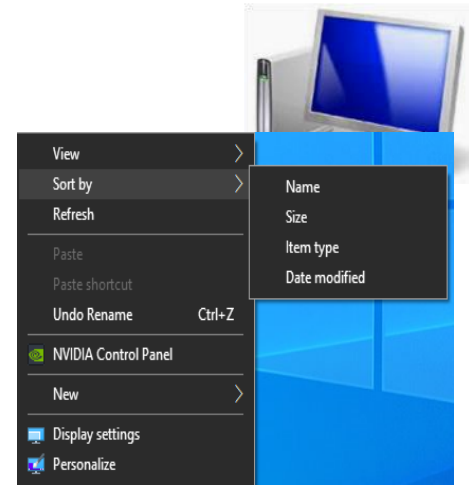
system.

## Icon Operations

### • Arrange Icons on the Desktop

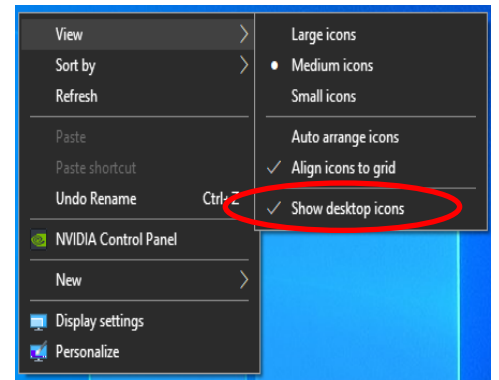
To change the arrangement of icons on the desktop do the following

- 1 - Right Click the desktop
- 2- Click Sort by
- 3- Select one of the 4 options to arrange icons from sub menu.



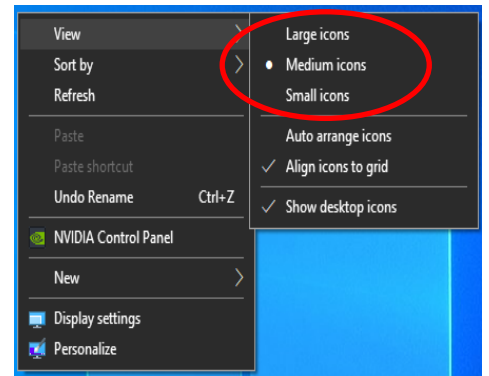
### • View/Hide Icons

- 1- Right Click the desktop
- 2- Click View
- 3- Check to see if show desktop icons have a check mark
- 4- If it does uncheck it.



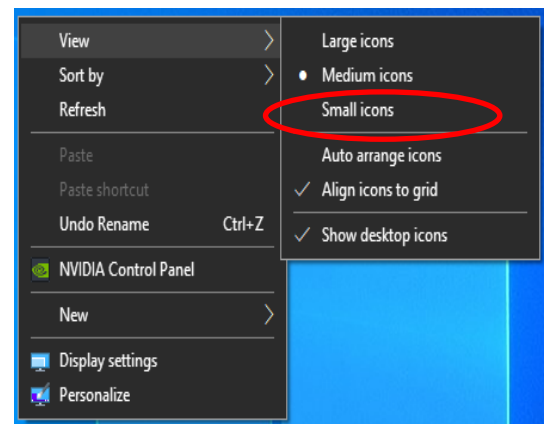
### • Change Icon size

- 1- Right Click the desktop
- 2- Click View
- 3- Show the required size.



### • Auto Arrange Icon

- 1 - Right Click the desktop
- 2- Click View
- 3- Check to see if Auto Arrange has a check mark
- 4- If it does uncheck it

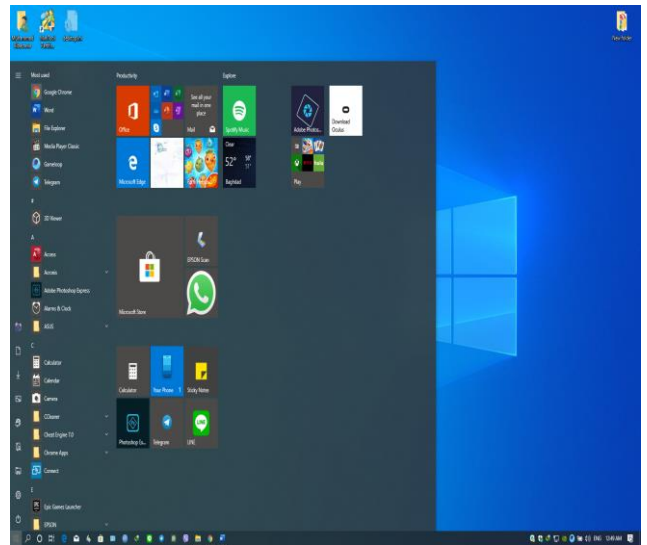


## Start Menu Parts

The Start menu for Windows 10 consists of many Parts to show.

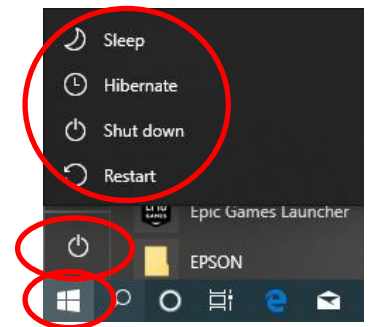
Use the Start menu to do these common activities:

- Start programs.
- Open commonly used folders
- Search for files, folders, and programs.
- Adjust computer settings.
- Get help with the Windows operating system.
- Turn off the computer.
- Log off from Windows or switch to a different user account.



## Shutting Down the computer

The simplest and most basic method of closing Windows 10 is by using the Start Menu, which is the default option in the latest Microsoft operating system. To do this, first open the Start menu by clicking or tapping the Windows button on the bottom left corner of the screen. Then, click or tap the Power button. From the options that appear choose Restart to reboot the device or Shut down to shut it down completely.



**Available options appear in a pop-up box. Some or all the following options appear:**

**Shut Down:** closes any apps that are currently running.

**Sleep:** This option reduces the computer's power consumption without exiting Windows 10 or closing apps. As a result, when you wake the computer by moving the mouse or touching the screen or the keyboard, everything is exactly as you left it.

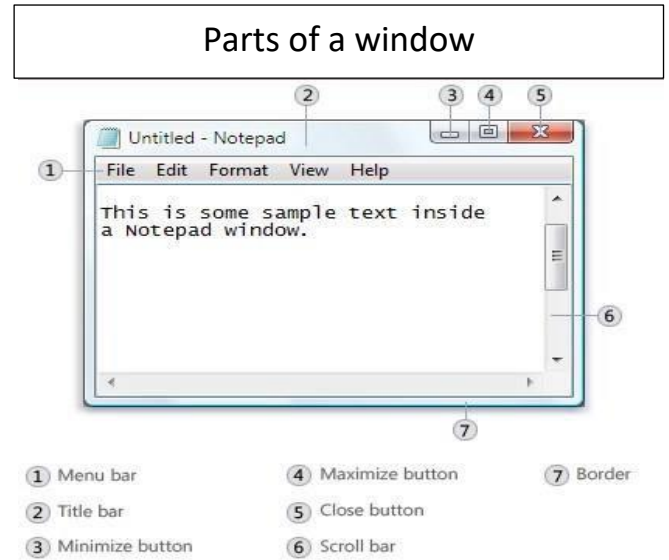
**Hibernate:** This option combines Sleep and Shut Down. Hibernate records which apps are running but also completely shuts down the computer. When you start the computer, Windows 10 opens all programs you were using, just as Sleep does.

**Restart:** Temporarily shuts down Windows 10 and turns it on again. Use Restart when Windows 10 asks you to or when Windows 10 is misbehaving.

## Working with Windows


Whenever you open a program, file, or folder, it appears on your screen in a box or frame called a window (that's where the Windows operating system gets its name). Because windows are everywhere in Windows, it's important to understand how to move them, change their size, or just make them go away.

Although the contents of every window are different, all windows share some things in common. For one thing, windows always appear on the desktop - the main work area of your screen. In addition, most windows have the same basic parts.




- **Title bar.** Displays the name of the document and program (or the folder name if you're working in a folder).
- **Minimize, Maximize, and Close buttons.** These buttons hide the window, enlarge it to fill the whole screen, and close it, respectively (more details on these shortly).
- **Menu bar.** Contains items that you can click to make choices in a program.
- **Scroll bar.** Let's you scroll the contents of the window to see information that is currently out of view.
- **Borders and corners.** You can drag these with your mouse pointer to change the size of the window.

## Moving a window


To move a window, point to its title bar with the mouse pointer . Then drag the window to the location that you want. (Dragging means pointing to an item, holding down the mouse button, moving the item with the pointer, and then releasing the mouse button.)

## Changing the size of a window


- To make a window fill the entire screen, click its Maximize button  or double-click the window's title bar.
- To return a maximized window to its former size, click its Restore button of the Maximize button). Or double-click the window's title bar.

- To resize a window (make it smaller or bigger), point to any of the window's borders or corners. When the mouse pointer changes to a two headed arrow (see picture below), drag the border or corner to shrink or enlarge the window.
- A window that is maximized cannot be resized. You must restore it to its previous size first.

### Hiding a window

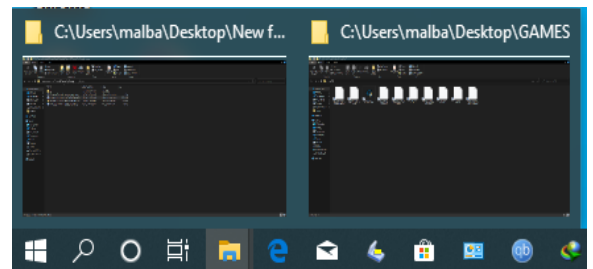
- Hiding a window is called minimizing it. If you want to get a window out of the way temporarily without closing it, minimize it.
- To minimize a window, click its Minimize button . The window disappears from the desktop and is visible only as a button on the taskbar, the long horizontal bar at the bottom of your screen.
- To make a minimized window appear again on the desktop, click its taskbar button. The window appears exactly as it did before you minimized it.

### Closing a window

- Closing a window removes it from the desktop and taskbar. If you're done with a program or document and don't need to return to it right away, close it.
- To close a window, click its Close button .
- If you close a document without saving any changes you made, a message appears that gives you the option to save your changes.

### Switching between windows

If you open more than one program or document, your desktop can quickly become cluttered with windows. Keeping track of which windows, you have open isn't always easy, because some windows might partially or completely cover others.



### Using the taskbar.

The taskbar provides a way to organize all your windows. Each window has a corresponding button on the taskbar. To switch to another window, just click its taskbar button. The window appears in front of all other windows, becoming the active window—the one you're currently working in.

To easily identify a window, point to its taskbar button. When you point to a taskbar button, you'll see a thumbnail-sized preview of the window, whether the content of the window is a document, a photo, or even a running video. This preview is especially useful if you can't identify a window by its title alone.

- Using **Alt + Tab**, You can switch to the previous window by pressing **Alt+Tab**, or cycle through all open windows and the desktop by holding down Alt and repeatedly pressing Tab, Release Alt

to show the selected window.

- Using Aero Flip 3D. Aero Flip 3D arranges your windows in a three-dimensional stack that you can quickly flip through. To use Flip 3D, Hold down the **Windows logo key & and press Tab** to open Flip 3D.



### Dialog boxes

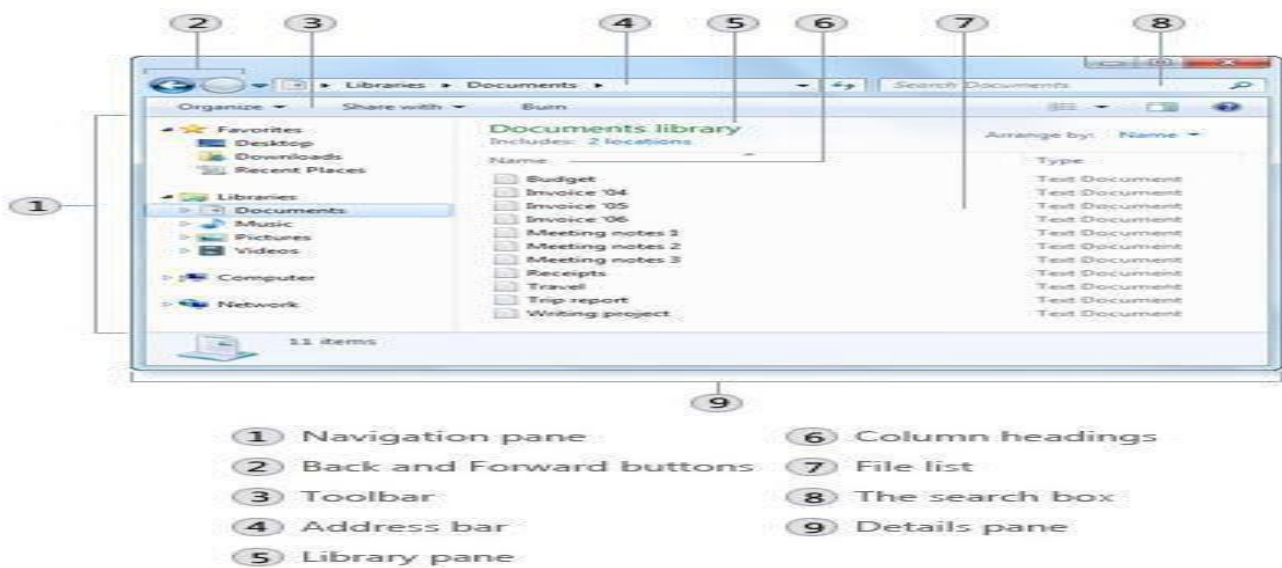
A dialog box is a special type of window that asks you a question, allows you to select options to perform a task, or provides you with information. You'll often see dialog boxes when a program or Windows needs a response from you before it can continue.

Unlike regular windows, most dialog boxes can't be maximized, minimized, or resized. They can, however, be moved.





### Understanding the parts of a window

When you open a folder or library, you see it in a window. The various parts of this window are designed to help you navigate around Windows or work with files, folders, and libraries more easily. Here's a typical window and each of its parts:



### Window part What it's useful for

**Navigation pane:** Use the navigation pane to access libraries, folders, saved searches, and even entire hard disks. Use the Favorites section to open your most used folders and searches; use the Libraries section to access your libraries. You can also expand Computer to browse folders and subfolders.

**Back and Forward buttons:** Use the Back button  and the Forward button  to navigate to other folders or libraries you've already opened without closing the current window. These buttons work together with the address bar; after you use the address bar to change folders.

**Toolbar:** Use the toolbar to perform common tasks, such as changing the appearance of your files and folders, burning files to a CD, or starting a digital picture slide show. The toolbar's

buttons change to show only the tasks that are relevant.

**Address bar:** Use the address bar to navigate to a different folder or library or to go back to a previous one.


**Library pane:** the library pane appears only when you are in a library (such as the Documents library). Use the library pane to customize the library or to arrange the files by different properties.

**Column headings:** Use the column headings to change how the files in the file list are organized. For example, you can click the left side of a column heading to change the order the files and folders are displayed in, or you can click the right side to filter the files in different ways. (Note that column headings are available only in Details view.)

**File list:** This is where the contents of the current folder or library are displayed. If you type in the search box to find a file, only the files that match your current view (including files in subfolders) will appear.

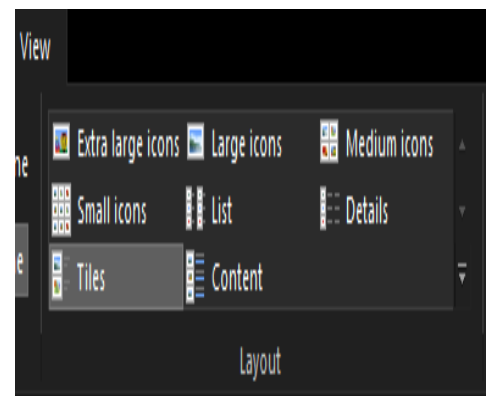
**Search box:** Type a word or phrase in the search box to look for an item in the current folder or library. The search begins as soon as you begin typing—so if you type "B," for example, all the files with names starting with the letter B will appear in the file list.

**Details pane:** Use the details pane to see the most common properties associated with the selected file. File properties are information about a file, such as the author, the date you last changed the file, and any descriptive tags you might have added to the file.

**Preview pane:** Use the preview pane to see the contents of most files. If you select an e-mail message, text file, or picture, for example, you can see its contents without opening it in a program. If you don't see the preview pane, click the Preview pane button  in the toolbar to turn it on.

## Viewing and arranging files and folders

When you open a folder or library, you can change how the files look in the window. For example, you might prefer larger (or smaller) icons or a view that lets you see different kinds of information about each file. To make these kinds of changes, use the View tab in the toolbar.



## Working with file and folder

### 1. Selecting

- Single object: To select a single object, click on it once.
- Multiple object: There are several ways to select Multiple files or folders.

- To select a consecutive group of files or folders, click the first item, press, and hold down the Shift key, and then click the last item.
- To select Multiple files or folders that are near each other, drag the mouse pointer to create a selection around the outside of all the items that you want to include.
- To select non-consecutive files or folders, press and hold down the Ctrl key, and then click each item that you want to select.
- To select all the files or folders in a window, on the toolbar, click Organize, and then click Select all. If you want to exclude one or more items from your selection, press and hold down the Ctrl key, and then click the items.

Notes: After selecting files or folders, you can perform many common tasks, such as copying, deleting, renaming, printing, and compressing. Simply right click the selected items, and then click the appropriate choice.

## **2.Rename.**

- Click the file or folder to select it
- Click the organize button on the toolbar, and then click Rename
- With the name highlighted, type a new name, or click to position the insertion point, and then edit the name.
  - Press Enter.

### *Notes:*

- *Right-click the file or folder you want to rename, click Rename, type a name, and then press Enter.*
- *You can also select the file, then press **F2**, type a name, and then press Enter.*

**Note:** File names can be up to 255 characters. You can use spaces and underscores in names, but you can't use the following characters: \* : < > | ? " \ or /. Remember the best way to keep your files organized is with a consistent naming convention.

## **2. Copying**

When you copy an item, the original item remains in its original location— plus you have the new copy.

- Open the location that contains the file you want to copy.
- Right-click the file, and then click Copy.
- Open the location where you want to store the copy.
- Right-click an empty space within the location, and then click Paste. The copy of the original file is now stored in the new location. **Notes:**
  - *Another way to copy and paste files is to use the keyboard shortcuts **Ctrl+C** (Copy) and*

**Ctrl+V** (*Paste*).

- *You can also press and hold the right-mouse button and then drag the file to the new location. When you release the mouse button, click Copy here.*

### **3. Moving (cut)**

Moving a file (or folder) is different from copying it. Moving cuts, the item from its previous location and places it in a new location. Copying leaves the original item where it was and creates a copy of the item elsewhere. In other words when you copy something you end up with two of it. When you move something, you only have the one thing.

- Open the drive or folder containing the file or folder you want to move.
- Select the files or folders you want to move.
- Click the Organize button on the toolbar, and then click Cut.
- Display the destination folder where you want to move the files or folder.
- Click the Organize button on the toolbar, and then click Paste.

### **Copy or Move a File or Folder Using Drag and Drop**

- Open the drive or folder containing the file or folder you want to copy or move.
- Select the files or folders you want to copy or move.
- In the Navigation pane, point to a folder list to display the expand and collapse arrows.
- Click the arrows to display the destination folder, and then click the destination folder.
- Right-click the selected files or folders, drag to the destination folder, and then click Copy Here or Move Here.

#### **Notes:**

To move the selected items, drag them to the destination folder. To copy the items, hold down the Ctrl key while you drag.

Another way to copy and paste files is to use the keyboard shortcuts Ctrl+X (Cut) and Ctrl+V (Paste). Pay attention to pop-up messages that appear when dragging—you can use these to find out what will happen when you release the mouse button.

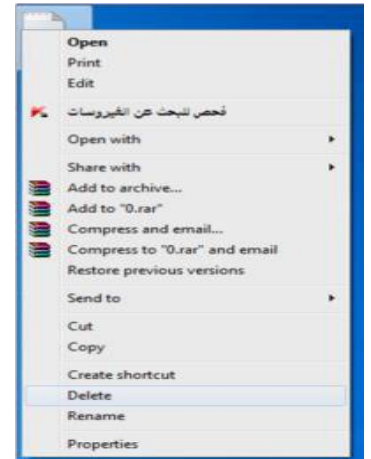
### **4. Create a Folder.**

- Open the drive or folder where you want to create a folder.
- Click the New folder button on the toolbar.
- With the New Folder name selected, type a new name.
- Press Enter.
-

Notes: Right-click a blank area on the desktop or in the folder window, point to New, and then click Folder.

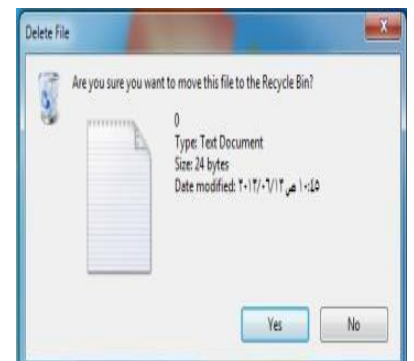
## 5. Deleting

- Select the file or folder.
- Click the Organize button and select Delete from the pull-down menu.
- After you select delete a confirmation message appears.



- Notes:
- You can also delete a file or folder by press right click on the item and then click delete.
- Or press Del buttons on the keyboard.
- The easiest way to delete on the desktop by drag and drop it to recycle Bin.

- When you delete a file or folder from your hard disk, it's not deleted right away. Instead, it's stored in the Recycle Bin until the Recycle Bin is emptied.
- If you delete a file or folder from a network folder or from a USB flash drive, it might be permanently deleted rather than being stored in the Recycle Bin.
- If a file can't be deleted, it might be in use by a program that's currently running. Try closing the program or restarting your computer to fix the problem. For more information.



*Note: To permanently delete a file without first moving it to the Recycle Bin, select the file, and then press Shift + Delete.*

### **Permanently delete files from the Recycle Bin.**

- When you delete a file, it's usually moved to the Recycle Bin so that you can restore the file later if necessary.
- To permanently remove files from your computer and reclaim any hard disk space they were using, you need to delete the files from the Recycle Bin. You can delete individual files from the Recycle Bin or empty the entire Recycle Bin at once.
  1. Open the Recycle Bin by double-clicking the Recycle Bin on the desktop.
  2. Do one of the following:
    - To permanently delete one file, click it, press Delete, and then click Yes.

- *To delete all the files, on the toolbar, click **Empty the Recycle Bin**, and then click **Yes**.*

**Notes:**

- *You can empty the Recycle Bin opening it by right-clicking the Recycle Bin and then clicking **Empty Recycle Bin**.*
- *You can permanently delete a file from your computer without sending it to the Recycle Bin by clicking the file and then pressing **Shift + Delete**.*

**Restore item from recycle Bin**

- *Open the Recycle Bin by double-clicking the Recycle Bin on the desktop.*
  - *Do one of the following:*
  - *To restore a file, click it, and then, on the toolbar, click **Restore this item**.*
  - *To restore all the files, make sure that no files are selected, and then, on the toolbar, click **Restore all items**.*
  - *The files will be restored to their original locations on your computer.*
- **Note:** *Deleted files do not stay in the Recycle Bin indefinitely. By default, the deleted files in the Recycle Bin can occupy 10% of your hard disk space. When you've deleted enough files to exceed this 10%, the oldest files in the Recycle Bin are automatically and permanently deleted from your hard disk.*