Computer Devices

The **device** that is used to put information into a computer or to obtain information.

There are 2 Types of Devices

➢ **Input device**

- Keyboard
- Mouse
- Joystick
- Light pen
- Scanner
- Track ball

- Micro phone
- MICR
- OCR
- Bar code scanner
- OMR Scanner

➢ **Output devices**

- Monitor (CRT/FPD)
- Printers
- Graphics Plotter

- Audio Speaker
- Headphone
- Projector

➢ **Dual (Input/output) devices**

- Touch Screen Monitor
- Headset
- Modem (internal / External)
- NIC
- Sound Card
- Flash Drive
- Disk Drive
  - FDD
  - HDD
- CD/DVD Drive

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▪ **Keyboard**

The Keyboard Divided into 5 Parts. Keyboard Contains 102 to 112 Keys

1. **Function Keys** (F1 to F12) = 12 Function Keys

2. **Typing Pad Keys** (A to Z with 0 to 9 Digit Keys)

3. **Numeric Pad Keys** (1 to 10 , **Num Lock** , + , - , * , / , Enter) set of 17 Keys

4. **Control Keys** (Direction Arrows = {Left , Down, UP and Right} , Delete , Insert ,

   Page up , Page Down, Home , End, Pause-Break, Control(**Ctrl**), Alternate (**Alt**),

   Escape (**Esc**))

5. **Special Purpose Keys** (**Caps Lock, Num Lock, Tab** , Space Bar, Print Screen, Enter

   and Shift)

Keyboard Symbols Name

~	tilde
`	back quote
!	exclamation
@	at
#	pound/hash
$	dollar

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%	percent
^	caret
&	and/ ampersand
*	asterisk
( )	parenthesis
[ ]	bracket
{ }	curly braces
-	minus/ hyphen
_	underscore
=	equal
:	colon
;	semicolon
/	slash/forward slash
\	backslash
|	pipe/bar
+	plus
<	less than
>	greater than
,	comma
.	period / full stop / dot
'	apostrophe / single quote
?	question mark
"	double quote

Special Purpose Keys Use

Enter ↵	Go to the next Line after press Enter Key
Space Bar ␣	Space after word e.g. Hello **spacebar** students (1 Character Space)
TAB ⇆	Maximum space between Word (5 Character Space) / Set Tab

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Shift ⇑	Pressing Shift Key We can Write Upper case Letter or Insert Symbols
Backspace ←	Delete one by one character from left side (If Mistakes in word)
⊞	Window Key used for open Program or Run Program (Using Key + R)
Scroll Lock	In Excel, Scroll lock used for Lock Screen and Move page with up/Down Arrows Keys)
Print Screen	Capture screen shot of present screen
Home	Go to the beginning of current line (cursor) if used with **Ctrl** Go to the beginning 1st line of page
End	Go to the end of current line (cursor) if used with **Ctrl** Go to the end last line of page
Pageup	Move page one by one up side
Page down	Move page one by one down side
Insert	Override the current line (Mostly used in **Programming**)
Delete	Delete one by one character from Right side

- ▪ **Mouse**

Computer mouse is a handheld hardware input device that controls a cursor in a Graphical user interface and can move and select text, icons, files, and folders on your computer

Mouser work on following concept
- Move the mouse Pointer
- Open or execute any Program
- Select the text or object
- Drag and drop
- Scroll the page
- Special work with right button click

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- **Joystick**

Joystick is an input device commonly used to control video games. Joysticks consist of a base and a stick that can be moved in any direction. The stick can be moved slowly or quickly and in different amounts.

- **Light Pen**

A **light pen** is a computer input device that looks like a pen. The tip of the light pen contains a light-sensitive detector that enables the user to point to or select objects on the display screen. It is not compatible with LCD screens, so it is not in use today. It also helps you draw on the screen if needed.

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- **Scanner**

A **scanner** is a device that captures images from photographic prints, posters, magazine pages, and similar sources for computer editing and display. Scanners come in hand-held, feed-in, and flatbed types and for scanning black-and-white or color.

- **Trackball**

A **trackball** is a computer pointing device which can perform the same functions as a mouse. When a user moves the mouse, the ball rolls, causing the pointer on the screen to move. With a trackball, the user simply rolls the ball itself using her fingers or thumb, while the body of the device stays in place.

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- **Microphone**

The **microphone** is a computer input device that is used to input the sound. It receives the sound vibrations and converts them into audio signals or sends to a recording medium. The audio signals are converted into digital data and stored in the computer.

- **MICR**

MICR stand for Magnetic Ink Character Recognition, it is used to read printed text with magnetic ink. MICR is a character recognition technology that makes use of special magnetized ink which is sensitive to magnetic fields. It is widely used in banks to process the cheques.

- **OCR**

OCR stands for "Optical Character Recognition." OCR taking an image of letter or book (Digitally typed) and convert the data that computer understood and modified data or stored in computer.

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- **Barcode Scanner**

Bar code scanner / (POS) Point of sale Scanner is hand-held input device to capture and read information contained in bar-code (E.g. Product Price at shop or Mall). A barcode reader works by directing a beam of light across the bar code and measuring the amount of light that is reflected back. The scanner converts the light energy into electrical energy, which is then converted into data by the decoder and forwarded to a computer.

- **OMR Scanner**
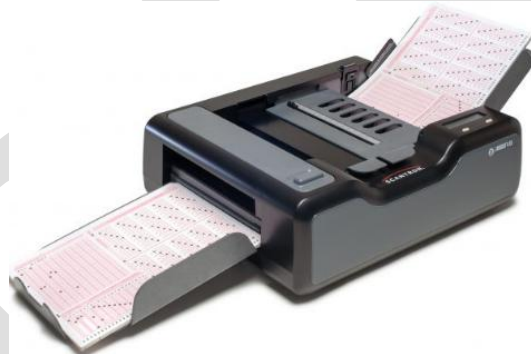
The **OMR** system is used for MCQ based examinations. OMR Scanner is the process of gathering information from human beings by recognizing marks on a document. OMR is accomplished by using a hardware device (scanner) that detects a reflection or limited light transmittance on or through a piece of paper.

Output Devices

- **Monitor**
  - CRT
  - FPD

CRT (Cathode Ray Tube)

Cathode Ray Tube Monitor is the typical monitor that you see on a desktop computer. It looks a lot like a television screen, and works the same way. This type uses a large vacuum tube, called cathode ray tube (**CRT**).

FPD (Flat-Panel Display Monitor)

The **Flat-Panel display** refers to a class of video devices that have reduced volume, weight and power requirement in comparison to the CRT. Current uses of flat-panel displays include calculators, video games, monitors, laptop computer, and graphics display.

▪ **Printer**
  o **Impact Printer**
  o **Non-Impact Printer**

Impact Printer

Impact Printer are Two Types

▪ **Character Printers**
  o **Dot Matrix Printer –**

Dot Matrix Printer that uses hammer and ribbon on the pages from dots, the dot matrix printer uses one or two columns of dots hammer that move on the pages to print character. The hammer rapidly press the ribbon into the paper. These printer are cheap, they can make carbon copies of the print out and the cost of print is very low, maintenance cost is very low as compared other printer. These type of printer make a noise and time consuming.

  o **Daisy Wheel Printer –**

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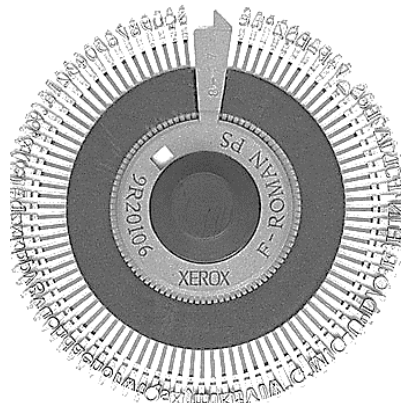
Daisy wheel printers print only characters and symbols and cannot print graphics. Working of daisy wheel printers is very similar to typewriters. The printing element rotates rapidly with the help of a servo motor and pauses to allow the printing hammer to strike the character against the paper.

- **Line printers**
  - **Drum Printer –**

An **impact printer** in which a complete set of characters for each print position on a line is on ac ontinuously rotating drum behind an inked ribbon, with paper in front of the ribbon; identicalch aracters are printed simultaneously at all required positions on a line, on the fly, by signal-controlled hammers.

  - **Chain Printer -**

The print element in a chain printer is a metallic band or chain containing the embossed characters that rotates horizontally in front of paper. A complete chain consists of the five sections; each section consists of 48 characters. As the print chain rotates, properly timed print hammers strike the paper along with linked ribbon, against the proper character on the chain as it passes. Chain printer are one of the fastest impact printers that can produce up to 400 to 2500 characters per second.

Non-Impact Printer

Non-Impact Printer are Two Types

- ▪ **Laser Printers**

A **laser printer** is a popular type of personal computer printer that uses a non-impact (keys don't strike the paper), photocopier technology. When a document is sent to the printer, a laser beam "draws" the document on a selenium-coated drum using electrical charges. After the drum is charged, it is rolled in toner, a dry powder type of ink. The toner adheres to the charged image on the drum. The toner is transferred onto a piece of paper and fused to the paper with heat and pressure. After the document is printed, the electrical charge is removed from the drum and the excess toner is collected

- ▪ **Inkjet Printer**

The most popular printer for home computer users that prints by spraying streams of quick-drying ink on paper. The ink is stored in disposable ink cartridges, and often a separate cartridge is used for each of the major colors. These colors are usually CMYK (cyan, magenta, yellow, and black). The picture is an example of a computer inkjet printer.

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- **Graphic Plotter**

Plotter is used for several application e.g. architectural plan of the building design of mechanical components of aircraft and many engineering applications. It is used to provide the high precision drawing and can produce graphics of various sizes. Speed of producing output is high. Plotter is two type

1. Drum plotter
2. Flatbed plotter (Used in following design – Cars, Ship, Airplanes, road and highway)

- **Audio Speaker**

Speakers are popular output devices used with computer systems. They receive audio input from the computer's sound card and produce audio output in the form of sound waves

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- **Headphone**

Headphones are a hardware device that can be plugged into a computer, laptop, smartphone, mp3 player or other device to privately listen to audio without disturbing anyone in the vicinity. They are plug-and-play devices and do not require any sort of installation before use

- **Projector**

A **digital projector** is an electronic device that is capable of connecting to a computer or other device and projecting the video output onto a screen or wall. Digital projectors can be either fixed onto the ceiling, placed on a stand or can even be portable. Digital projectors are used in situations such as office training or presentation sessions, classroom teaching and home cinemas.

Dual (Input/output) Devices

- **Touch Screen Monitor**

A **Touch Screen** is a computer display screen that is also an input device. The screens are sensitive to pressure; a user interacts with the computer by touching pictures or words on the screen.

- **Modem (internal / External)**

A **modem** is a hardware networking device that converts data to a signal so it can be easily sent and received over a phone line, cable, or satellite connection. The modem converts data between analog and digital formats in real time for two-way network communication. In the case of the high-speed digital modems popular today, the signal is much simpler and doesn't require the analog-to-digital conversion.

- **NIC (Network Interface Card)**

A **network interface card** is a hardware component, typically a circuit board or chip, which is installed on a computer so that it can connect to a network. Modern NICs provide functionality

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to computers such as support for I/O interrupt, direct memory access (DMA) interfaces, data transmission, network traffic engineering and partitioning.

- **Sound Card**

A **sound card** is an expansion component used in computers to receive and send audio. Sound cards are configured and utilized with the help of a software application and a device driver. The input device attached to receive audio data is usually a microphone, while the device used to output audio data is generally speakers or headphones.

- **Disk Drive**
  - **FDD**

A floppy disk drive, also called FDD or FD for short, is a computer disk drive that enables a user to save data to removable diskettes.

  - **Flash Drive**

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A **Flash Drive** is a small portable storage device which has no moving parts. Flash drives connect to computers and other devices via a built-in USB Type, making a flash drive a kind of combination USB device and cable.

- **Disk Drive**

A **hard disk drive** is a non-volatile memory hardware device that permanently stores and retrieves data on a computer. A hard drive is a secondary storage device that consists of one or more platters to which data is written using a magnetic head, all inside of an air-sealed casing.

- **CD/DVD Drive**

Digital versatile disc-read only memory (DVD-ROM) is a read-only digital versatile disc (DVD) commonly used for storing large software applications. It is similar to a compact disk-read only memory (CD-ROM) but has a larger capacity. A DVD-ROM stores around 4.38 GB of data. A CD-ROM usually stores 650 MB of data.

Full Forms

S.no	Short Name	Full Name
1	ALU	Arithmetic logic unit
2	ASCII	American standard code for information interchange
3	AT	Advance technology
4	ATX	Advance technology extended
5	BIOS	Basic input output system
6	CD	Compact disk
7	CMOS	Complementary metal-oxide semiconductor
8	Computer	Common operating machine purposely used for technological and education research
9	CPU	Central Processing Unit
10	CRR	Cash reserve ratio
11	CTS	Cheque Transaction System
12	DDR	Double data rate
13	DOS	Disk operating system
14	DSL	Digital subscriber line
15	DVD	Digital versatile disk
16	DVI	Digital visual interface
17	EPFO	Employee provident fund organization
18	EPROM	Erasable programmable read only memory
19	Fat	File allocation table

20	**FDD**	Floppy disk drive
21	**FSB**	Front Side bus
22	**GB**	Giga byte
23	**GHz**	Gigahertz
24	**GOOGLE**	Global organization of oriented group language of earth
25	**GPS**	Global positioning system
26	**GST**	Goods Service Tax
27	**HDD**	Hard disk drive
28	**HGA**	Hercules graphic adapter
29	**HTTP**	Hyper Text Transfer Protocol
30	**IBM**	International business machines corporation
31	**IFSC**	Indian financial system code
32	**IP**	Internet protocol
33	**ISO**	International standards organization
34	**JPEG**	Joint photo expert group
35	**KB**	Kilo byte
36	**LAN**	Local area network
37	**LCD**	Liquid crystal display
38	**LED**	Light Emitting diode
39	**Li-on**	Lithium - ion
40	**LOGO**	Language of graphic oriented
41	**MAN**	Main area network
42	**MB**	Mega Byte
43	**Modem**	Modulator/Demodulator
44	**NEFT**	National electronic fund transfer
45	**OCR**	Optical character recognition
46	**OMR**	Optical mark recognition
47	**OS**	Operating system
48	**PC**	Personal computer

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49	PS2	Personal system 2 connector
50	Ram	Random access memory
51	RMA	Return material authorization
52	ROM	Read only memory
53	SMPS	Switch mode power supply
54	SQL	Structured Query Language
55	TB	Tera byte
56	TCP	Transmission control protocol
57	UPS	Uninterruptable power supply
58	URL	Universal Resource locator
59	USB	Universal serial bus
60	VGA	Video graphic array
61	VIRUS	Vital information resource under seize
62	VPN	Virtual private network
63	WAN	Wide area network
64	WIFI	Wireless fidelity
65	WINDOW	Wide interactive network development for Office work solution
66	WWW	World wide web
67	XP	eXPerience
68	ZIP	Zigzag inline package
69	PNG	Portable network graphics
70	PDF	Portable document format
71	MPEG	Motion picture expert group file
72	HTML	Hypertext Markup Language
73	GIF	Graphics interchange format
74	EXE	Executable file
75	CSS	Cascading style sheet

File Type (Extension)

> ## How to View File Extension?

Right click on any File and click on **Properties** – In general section we can check the type of file

1	**Paint**	**.Bmp**
2	**Notepad**	**.Txt**
3	**WordPad**	**.Rtf**
4	**Document file (Word)**	**.Doc / Docx**
5	**Spreadsheet file (Excel)**	**.Xls / Xlsx / .Csv**
6	**Presentation File (PowerPoint)**	**.Ppt / Pptx / .pps**
7	**Database File (Access)**	**.mdb /.accdb**
8	**Mail File (Outlook)**	**.pst**
9	**Publisher File**	**.pub**
10	**Coral Draw File**	**.cdr**
11	**Photoshop**	**.psd .Pdd**
12	**Page-maker**	**.pmd**
13	**Visual Basic**	**.frm / .frx**
14	**Web Page File**	**.Html .aspx .php .jsp**

15	Image File (Picture)	.jpg .png
16	Song File	.mp3 .wav .wma .m4a
17	Calendar file	.ics
18	Video File	.mp4 .Mpeg .Mkv .vob .3gp .wmv .avi .flv
19	Animated File	.Tiff
20	Icon file	.Ico
21	Portable document file	.pdf
22	Flash file	.fla
23	Batch file	.bat
24	Dynamic link library	.dll
25	Disc and Media FIle	.iso .vcd .bin .dmg
26.	Compress file	.rar .zip .cbr .7z .Pkg
27	Xml file	.xml
28	Executable file (PC/Window/Android/Apple)	.exe .jar

		.apk
		.ipa
29	Video game file	.dem
		.gam
30	Font files	.ttf
		.fnt
		.fon
		.otf
31	Programming files	.c
		.cpp
		.java
		.class
		.py
		.class
		.vb
32	Backup file	.bak
33	Torrent file	.torrent
34	Auto cad file	.dwg
35	3d studio file	.3ds
36	Microsoft XML paper specification	.Xps
37	Data file	.dat
38	Contact file of windows and mobile	.vcf
39	Sony digital camera image file	.arw
40	Cannon digital camera image file	.crw
41	Nikon digital camera image file	.nef
42	Apple Os picture file	.pict
43	Web page image map	.map
44	Audio interchange file format	.aiff / .aif
45	Canvas	.cvs
46	Java Script object notation	.JSON
47	Log files	Log
48	Temporary files	.temp / .tmp
49	Configuration files	.cnf / .cong /

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		.cfg
50	**Cascading style sheet**	**.css**

➤ How to show file extension of file in computer?

In My computer, Click on Organize section, then goto folder and search option, click on view tab and uncheck the hide extension for known file type. Here is an example of show extensi

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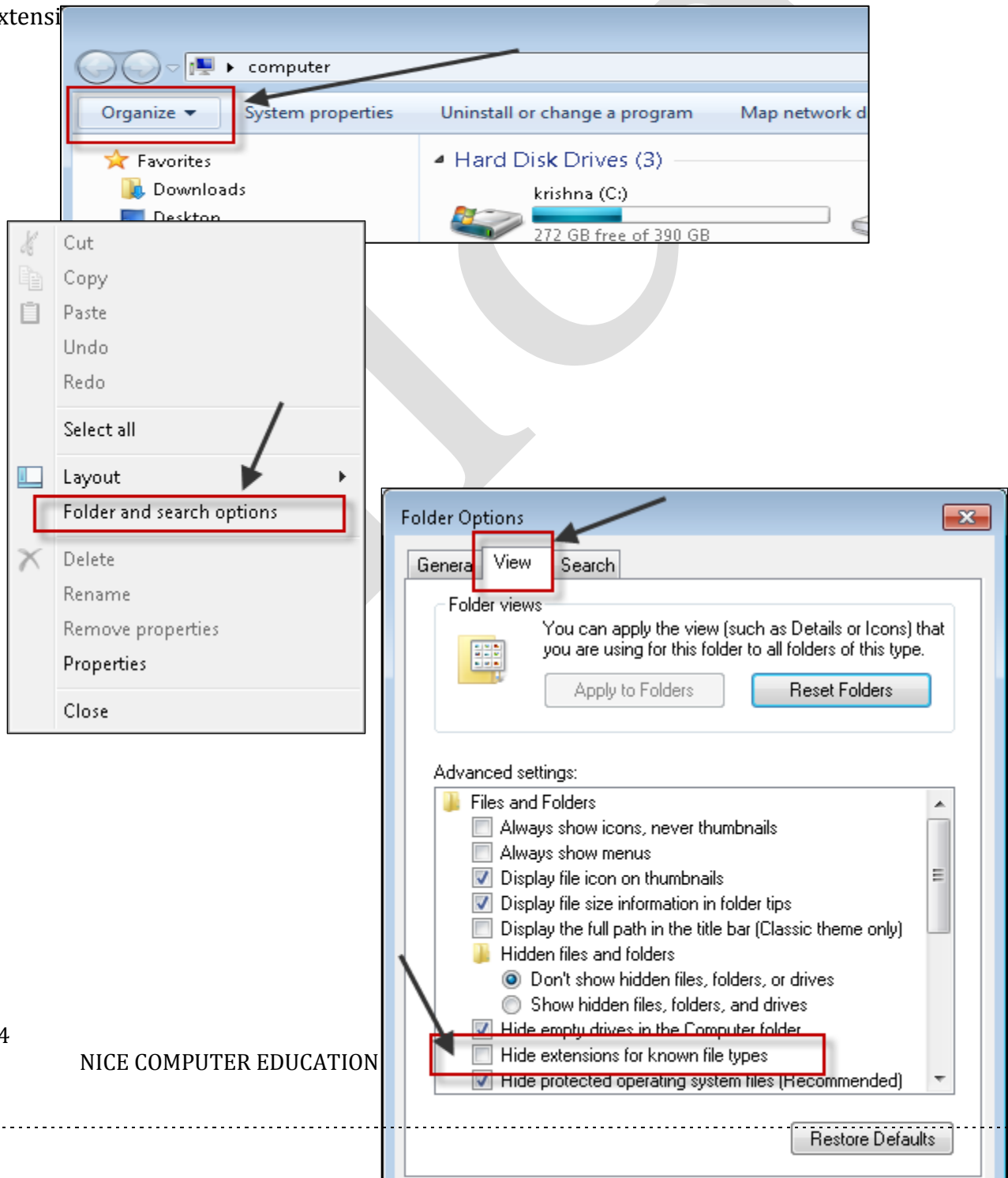
Here is extension show the file type (**Related software**)

Unit of Memory

Memory unit is the amount of data that is stores in the storage unit.

* **BIT**
  A binary digit is logical 0 and 1 called BIT.

* **Nibble**
  A group of 4 Bit is called Nibble.

* **Byte**
  Group of 8 BIT or 2 Nibble is called Byte. A Byte represent Data (Character Value/number value)

  Above unit is smaller units but there is other unit of memory which store higher storage unit as describe below.

* **KB (Kilo Byte)**
  1 KB   =   1024 Bytes

* **MB (Mega Byte)**
  1 MB   =   1024 Kilo Bytes

- **GB (Giga Byte)**
  1 GB   =   1024 Mega Bytes

- **TB (Tera Byte)**

Type Short name in Run	Program Name

1 TB   =   1024 Giga Bytes

- **PB (Peta Byte)**
  1 PB   =   1024 Tera Bytes

- **EB (Exa Byte)**
  1 EB   =   1024 Peta Bytes

- **ZB (Zetta Byte)**
  1 ZB   =   1024 Exa Bytes

- **YB (Yotta Byte)**
  1 YB   =   1024 Zetta Bytes

- **BB (Bronto Byte)**
  1 BB   =   1024 Yotta Bytes

- **Geop Byte**
  1 Geop Byte   =   1024 Bronto Bytes

- **Sagan Byte**
  1 Sagan Byte =   1024 Geop Bytes

Cmd	**DOS (Command Prompt)**
Paint brush	**Paint Brush**
Word pad	**WordPad Program**
notepad	**Notepad Program**
Notepad++	**Advance Notepad**
winword	**Microsoft word program**
Excel	**Microsoft excel**
Power point	**Power point presentation**
Ms access	**Microsoft access program**
Corel draw	**Corel draw Program**
Photoshop	**Photo shop program**
Pm70	**Page maker 7.0**
Flash	**Flash animation software**
Internet explore	**Internet explorer**
Chrome	**Google chrome browser**
D:	D Drive
C:	C Drive
Open by Apply Path (We can also set different path by Browse Command)	
C:\Program Files (x86)\Microsoft Visual Studio\VB98\VB6.Exe	**Visual Basic 6**
C:\BusyWin\Busy18.exe	**Busy 18**
C:\Program Files\Tally\Tally.ERP9\tally.exe	**Tally ERP9**
C:\Typing\Tmaster.exe	**Typing Master**

How to open Any Program (Software)

- **Note** – If any program not open that program not installed in your pc