

Important snaps by Team PIS Class- IXth

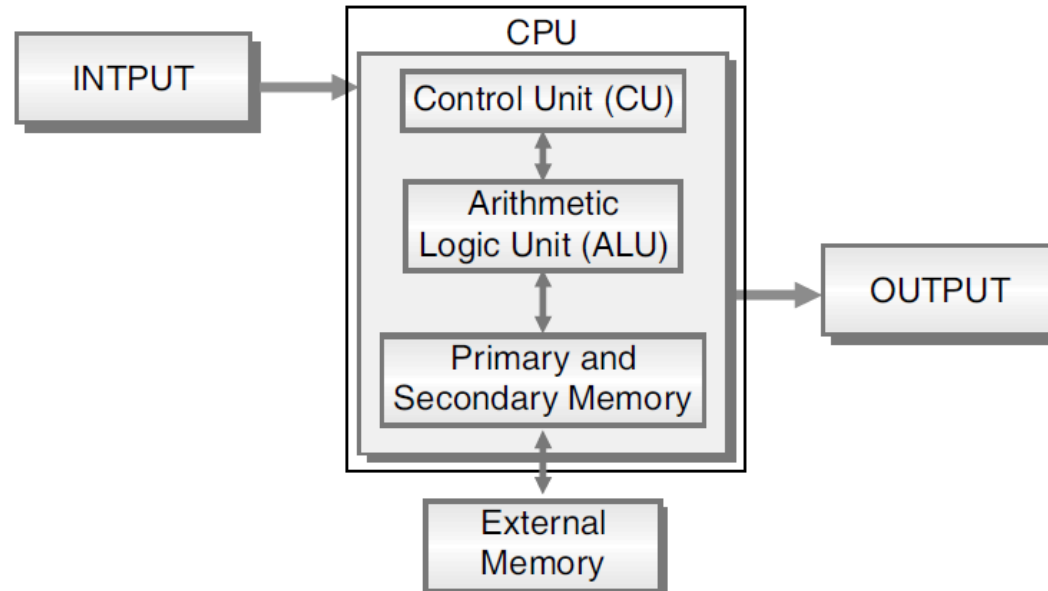
**SUBJECT:COMPUTER
APPLICATION**

**CHAPTER: COMPUTER
SYSTEM**

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Computer System

- **Computer System :** A computer is an electronic device which processes data based upon the instructions provided and generate the desired output.
- **IPO Cycle :** The basic principle on which the computer works.
- **Computing Process:** Input -> Process -> Output
- The characteristics of computer are Speed, Accuracy, Automation, Endurance, Versatility, Storage, Reduction of processing cost, and Intelligence quotient.
- CPU and processing system of computer:



Computer System

- Control unit is a link between memory unit and ALU (Arithmetical and Logical unit).
- **Control Unit** : The control unit controls and co-ordinates all the CPU's activities.
- **Arithmetical / Logic Unit** : This unit performs all the arithmetical and logical operations.
- **Memory** : This unit stores the data and instructions.
- **RAM** stands for "Random Access Memory". Every time you open a program, it gets loaded from the hard drive into the RAM. RAM is a very high-speed type of memory.
- **ROM** stands for "Read-Only Memory". ROM is a memory containing hardware instructions like BIOS and CMOS that the computer uses when it boots up, before the system software loads.
- **External memory or storage device** : These are portable devices to store data for future use.
- The hard disk is a spindle of magnetic disks, called platters, that record and store information.
- Tape drive is a removable storage device mainly used for backing up data. It is similar to a Zip drive, but instead of Zip disks, it uses small tapes.
- **I/O devices** : The input and output devices attached to the computer like pen drive, memory chip.

Input and Output Devices

Input Devices

Input devices can send data or information to a computer or another device.

Keyboard: It is an input device which sends data in to the computer. The data send depends on the key pressed by the user.

Mouse: A mouse is a small handheld input device which controls a cursor in a graphical user interface. It can move and select text, files, folders etc. on our computer according to the user input.

Scanner: Scanner optically reads and document, file or image and then changes it into digital signal and sends to the computer.

OMR: optical mark recognition/ reader, is used to read marks on a document and send them to computer.

OCR: OCR stands for optical character Recognition, is an input device which reads printed text and sends that to computer.

MICR: Magnetic Ink Character Reader is an input device which generally finds application in banks to process cheques.

Microphone: it receives audio generated by some input source and sends the same to a computer.

Webcam: it sends the captured images to a computer.

Graphics Tablets: This input device is used to draw using hand.

Trackballs: an upside down mouse ,encased within a socket. Is a cursor control device.

Barcode reader: It is used to read the barcode of various items and feed the same to computer.

Gamepad: Also known as joy pad is the input controller for video games.

Joystick: these input devices are used to control video games.

Input and Output Devices

Monitor: A monitor is an output device that is responsible for receiving data from a computer and displaying that information as text or images for users to see.

Speakers: Receives sound signal from a computer and then plays that sound signal and thus we hear songs or music or any other audio.

Projector: Gets data from a computer and displays or projects the same information onto a screen or a wall. Projector cannot directly accept data from a user and send that data to another device.

Types of Software

- Program is a set of instructions, which are written to perform a specific task.
- Software is a set of programs which helps in performing various operations or direct the computer to process information.
- Software is mainly of two types—System software, Application software.
- The set of instructions, which co-ordinates the operations of the hardware, is called a system software.
- System software consists of all types of operating systems. In other words, system software are the software without which computer can not start, hence they are mandatory for the computer systems.
- **Operating System** : A type of system software that acts as an interface between the computer system along with attached devices and the user. *For example* : Windows, Linux, Macintosh, etc.
- The set of instructions or programs, which are designed for specific uses or applications, is called as application software.
- Application software is of two types—general purpose application software and specific purpose application software.
- **Word Processing Software** is used to enter, format, edit and print text documents.
- **Spreadsheet Software** is used to enter data in forms of tables and performs mathematical operations on the data.
- **Presentation software** is used to present information in graphical and attractive formats on digital slides for better understanding by the viewer.
- Programs written only for specific purpose are called specific software programs.
- Accounting programs, attendance programs, payroll programs, etc. are specific software programs.
- Database management system (DBMS) is a software system that uses a standard method of cataloging, retrieving and running queries on data. The DBMS manages incoming data, organizes it, and provides ways for the data to be modified or extracted by users or other program.
- A utility program carries out some of the command tasks needed when using a computer.
- **Disk Management** : A built-in tool of Windows to manage hard disk partitions without rebooting or interrupting the system.
- **File/Folder Management** : This utility software of windows help to manage, copy, move, rename, delete, recover and monitor the files and folders present on the computer.
- **Virus Scanner/Cleaner** is also known as Antivirus which scans the device to keep it safe from any virus attack. It either deletes the virus or deactivates the virus.
- Encryption is the conversion of data into a form, called a cipher text, which cannot be easily understood by unauthorized people.
- Decryption is the process of converting encrypted data back into its original form, so that it can be understood.

OPERATING SYSTEM

- Operating system can be defined as the software bridge which acts as interface between user and the computer hardware. Example: Windows, Unix, Boss, Lynux, Android etc.
- Loading up of OS files into computer's memory is called booting up.
- Operating System is required for smooth interaction with computers, initiating computer operations automatically, accessing various hardware devices, computer memory management and overall security of the computer programs.
- The functions of OS include, storing and accessing data (storage management), scheduling execution of programs (process management), allocates memory for various processes (memory management) and exchanging data and files between multiple users (extended machine management)
- **Based on user interaction operating systems are divided into two types :**
 1. CUI(Command User Interface)
 2. GUI(Graphical User Interface)
- **Real Time OS :** An operating system that provides quick and accurate output with in a prescribed time limit.
- **Distributed OS :** An operating system that is used to manage a distributed system, that is, many computer and hardware devices which are independent of each other.
- **Multiprogram OS :** The OS that allows CPU to execute more than one program at the same time.
- **Multiprocessing OS :** The OS that allows a computer having many CPUs to execute more than one program at the same time.
- **UNIX :** Unix OS controls a computer using CUI, which in turn runs an application that provides GUI to easily interact with the computer. It is multiuser and multitasking OS.
- **LINUX :** It is Unix like operating system mainly used on servers and mainframe computers as well as supercomputers.
- **Windows :** It is GUI based OS having dominance in desktops and laptops.
- **Solaris :** It is Unix based OS developed by Sun Microsystems and mainly used on servers for hosting websites.
- **BOSS Linux** is the Indian made operating system. Its latest version is 6.0(Anoop), released in August 2015.
- **Mobile OS Android :** It is Linux based Open source mobile OS mainly designed for touch screen devices like smart phones and tablets.

Computer Networking

- A group of computers and peripheral devices connected to each other is called a network.
- Networking is a concept of implementing tools and tasks for linking computers so that they can share resources over the network.
- Internet is called network of networks that connects millions of computers.
- **InterSpace** : A program that allows more than one users to communicate with each other online in three dimensional environments.
- A protocol is a set of rules that the computer uses to communicate with each other across a network.
- LAN is a network within a single building or linking of up to a 5 Kms in size. It is acronym for Local Area Network.
- MAN spans a larger geographical area between 10 Km and 100 Km, often a city. It is acronym for Metropolitan Area Network.
- WAN spans wide area often across the metropolitans and countries. It is an acronym for Wide Area Network.
- A hub is used in a wired network to connect ethernet cables from a number of devices.
- A router is a device in computer networking that forwards data packets to their destinations based on their addresses.
- **Wired Networking Tools** : They are also called guided media that uses cables like twisted pair, coaxial cable, ethernet cable, optical fiber to connect computers.
- **The most common form of wiring in data communication applications is the twisted pair cable.**
- For long distance communication, microwave radio transmission is widely used as an alternative to co-axial cable.
- A co-axial cable consists of one conductor usually a small copper tube, a wire within and insulated from another conductor of large diameter usually copper tubing or copper braid.
- **Ethernet Cable** : The network cable used for high speed connection between network devices like modem, routers etc of LANs and MANs.
- **Wireless Networking Tools** : They are also called unguided media that uses waves instead of cables to transfer data between computers. *For example:* Bluetooth, Infrared, Wi-Fi for short distance communication and Microwaves, Radio waves and Satellite for long distance communication.
- **Satellite** : The satellite transmission of data uses a satellite antenna on earth and uses microwaves to transfer the data between satellite and the stations on the earth.

CYBER-SAFETY

- In the eighties when the internet was in its infancy, its main usage came from university students and professors in an atmosphere of implicit trust. This means that security was not the first thing in mind when the basic uses and functions of the internet were first developed.
- Nowadays the internet is everywhere both in public and in private life. It has become a vital means for professional and personal - often confidential - communication. This has required security enhancements to be added to the various communication methods used on the internet after it became widely used.
- **Safe Internet Browsing Tips :**
 - Install and use most secure Internet Browser like (Google Chrome, Mozilla Firefox).
 - Customise your security settings like (shutting off features like “auto fill”, turning off “cookies”, block pop-up windows)
 - Create typical password which cannot be recognized by others.
 - Hide your IP (Internet Protocol) with a VPN (Virtual Private Network)
 - Download software from trusted sources.
 - Use Anti-Virus protection
 - Be prompt about updating your operating system and software
 - Don't use unsecure WiFi.
 - Back up your data.
- **Tips to stay safe on social media :**
 - Use a strong password. The longer it is, the more secure it will be.
 - Use a different password for each of your social media accounts.
 - Set up your security answers.
 - If you have social media apps on your phone, protect your device with strong password.
 - Be selective with friend requests. If you don't know the person, don't accept their request. It could be a fake account.

WORD PROCESSOR

- A word processor is a package that processes textual data and creates organised and flawless documents.
- Word processing is the process of typing, editing, and formatting, etc., of words and paragraphs.
- MS-Word is a word processor, comes in MS office package by Microsoft Corporation.
- MS-Office is an integrated software package developed by Microsoft Corporation of USA.
- The writer is the word processing software package. is OpenOffice.org.
- The horizontal text alignment can be left, right, centered or justified.
- Tables can be inserted in MS-Word documents.
- To split cells, select table > split cells.
- To apply formula, use insert option.
- To insert cells/row columns > insert menu.
- To apply mathematical formula / expression, use insert menu.
- The character formatting is concerned about making decisions regarding the fonts and font sizes, text attribute (B/I/U) and text positioning (super-script/sub-script) etc.
- The dialog box is a special window which comes after executing a command. This box contains several actions to be taken by typing or clicking.
- Cursor is the small blinking line on the document, which indicates your position on the screen.
- The first and default OpenOffice.org Writer file name is Untitled-1.
- Formatting is to give special effects to the text like change in font, style, size and colors, etc.
- Selection is to highlight text for format, cut, copy, or delete purposes.
- Clipboard is the temporary area in the memory, which stores cut or copied text.
- When selected text is cut, it is sent to clipboard, which can be later placed into document.
- De Select the text by clicking anywhere outside the selection on the page or press an arrow key on the keyboard.
- At any point of time, we want to keep the default setting, press (Ctrl + M or click Default Formatting from Format menu).
- Ruler is used to set tabs, indents and margins for a document.
- Margin refers to the distance from the text to the paper edge.
- The tab is a specified stop on horizontal ruler used to jump after pressing tab key.
- Line spacing is the vertical distance between lines of text.
- When you make a line spacing change, it affects only the text in a paragraph that contains the insertion point.

WORD PROCESSOR

- Print layout view is the best used view when working with normal word processing including, text, table and graphics.
- Web layout view is best used when creating a page for the web. In this view, you can see the background, text is wrapped to fit the window, and images appear as they would online.
- Print layout view is best used when our document contains things like images, headers and footers, columns, etc. Each of these components will be visible.
- Using print feature of Writer, you can take hard copy of your document.
- Page preview shows how a file will look when we print it.
- If a correction is made using AutoCorrect option, and the same mistake is repeated again while typing the document, it will be corrected automatically.
- OpenOffice.org Writer contains a built-in dictionary that gets used when Spell check is performed.
- Mail merging is an powerful and important feature of MS-Word.
- Main document is the writer document which contains letter that remain the same for each version of the merged document.
- A data source is database containing name address etc.
- To perform mail merge, follow the following steps :
 - Prepare the main document.
 - Insert the variable field.
 - Create the data source.
 - Merge the letter and data.
- Track change help in format data source.

PRESENTATION TOOL

- Power Point is presentation software in MS Office package of Microsoft Corporation.
- To start PowerPoint select Start > Programs > Microsoft PowerPoint.
- Slide is working area in the presentation software to create, format and modify the content to be appearing on the screen.
- Slide show is an animated presentation that we display on a computer monitor or projection system.
- A slide transition is a special effect used to introduce a slide during a slide show.
- Slide transitions are the effects that take place when one slide gives way to the next one in the presentation, like Roll down from top or Fly in from left.
- You can add transitions while in Slide Sorter view or in Normal view.
- Custom animation effect sets up the way you want the text or an object to appear on your slide during a slide show presentation.
- To modify the styles used in any slide master, press F11 key to open the Styles and Formatting windows.
- Interactions are things that happen when you click on an object in a slide.
- Slide animations are similar to transitions, but they are applied to individual elements on a single slide.
- The three ways to create a new presentation are : Blank presentation, Design template and Auto content wizard.
- To open a presentation Click File > Open.
- Design template contains ready made formatting and color but not same slide style.
- The text can be either typed in placeholders or in text box.
- You may format the text by changing point, font size, aligning the text, adding bullet or number, shadow, etc.
- To insert a New Slide, select Insert > New Slide.
- To insert a clipart, select a Slide Layout with Clip Art.
- To insert a table, select a Slide Layout with table.
- Normal view has three working areas outline tab, slides tab; notes pane and show pane.
- Slide Sorter view helps to view your slides in thumbnail form.
- You may rearrange the slide using slide sorter view.
- Slide Show View takes the full computer screen as it would be in an actual slide show presentation.
- To save a file select File > Save.
- To exit PowerPoint, select File > Exit.
- To insert a sound clip, select Insert > Movies and Sounds.

PRESENTATION TOOL

- Do not insert two sound clips to be played automatically as you will not be able to play even one sound properly.
- To insert a video clip, select Insert > Movies and Sounds.
- To fix a formatting style for all the slides in a presentation, select View > Slide Master.
- You can insert charts and organization charts in the presentation.
- To animate text and graphics, select Slide Show > Custom Animation.
- To apply transitions and timing, select Slide Show > Slide Transition.
- To print a file, select File > Print.
- Slide contains placeholder to hold different types of contents.
- Slide put together make-up your presentation.
- Normal view displays single slide, outline of presentation and speaker notes area.
- There are two ways to place a slide in the slide design area of the normal view : clicking the slide thumbnail in the slides pane or using the navigator.
- Outline view displays slide menu and main text.
- Outline view contains all of the slides of the presentation in their numbered sequence. Only the text in each slide is shown. Slide names are not included.
- Slide sorter view displays miniature of each slide.
- The slide sorter view contains all of the slide thumbnails. Use this view of work with a group of slides or with only one slide.
- "Handout view is for setting up the layout of your slides for a printed handout.
- Form template uses a template design already created as the basis for a new presentation.
- A Slide Master is a slide with a specified set of characteristics which is used as the beginning point for creating other slides.
- A slide master has a defined set of characteristics, including the background color, graphic, or gradient, objects (such as logos, decorative lines and other graphics) in the background, headers and footers, placement and size of text frames, and the formatting of text.
- Master slides, slide master and master page-all refer to a slide that is used to create other slides.
- Slide masters have two types of styles associated with them : presentation styles and graphics styles.
- Presentation styles affect three elements of a slide master: the background, background objects (such as icons, decorative lines and text frames), and the text placed on the slide.
- Background can be applied to a number of elements in impress : the page, a default text area, a graphic object and so on.
- Note area is an area in normal view where speaker notes can be entered.

EXCEL SPREADSHEET

- A worksheet is a collection of cells where we keep and manipulate the data. By default, each Excel workbook contains by default three worksheets.
- The worksheet in excel is termed as spreadsheet.
- MS-Excel is a powerful component of a MS-Office and powerful spreadsheet software package by Microsoft Corporation.
- A cell is the intersection of a row and a column.
- In Excel, formula enables us to calculate the results based on the numbers.
- The default height of a cell is 12.75 points and column width is 8.43 points.
- AutoFill feature is used to fill the cells with a predefined series of numbers and text.
- You can format cell by selecting Format > Cells.
- You can apply border or pattern to a selected cell or range of cells.
- You can insert or delete a worksheet.
- Excel offers ready formulae and functions for calculations.
- A formula always begins with equal to sign (=).
- To copy formula, select Edit > Copy and to paste a formula, select Edit > Paste.
- Relative reference adjusts the cell reference of the same formula to perform the same relative operation.
- Absolute reference is the cell reference that is not changed when a formula is copied.
- Mixed reference is a combination of absolute and relative reference.
- AutoSum feature add the values above or left to the target or destination cell.
- If a function starts the formula, an equal to (=) sign will be required before function name also.
- Cell address is the column row number given to a cell by which it is referred.
- Workbook is a collection of worksheet.
- Range is a contiguous or non-contiguous blocks of cells.
- AutoFill allows to quickly enter predefined series of data.
- Autocomplete feature of excel automatically input data in the active cell if it's a repeated entry in the column.
- Function is a built-in formula in Excel.
- Constant is a number entered directly into Formula and whose value does not change.
- Reference indicates excel to the location of information you want to use in a formula.

MS-Excel : Charts

