

## LATIHAN 2.1

1. Define computer systems.

A computer system is defined as combination of components designed to process data and store files.

2. State the meaning of input, process, output and storage.

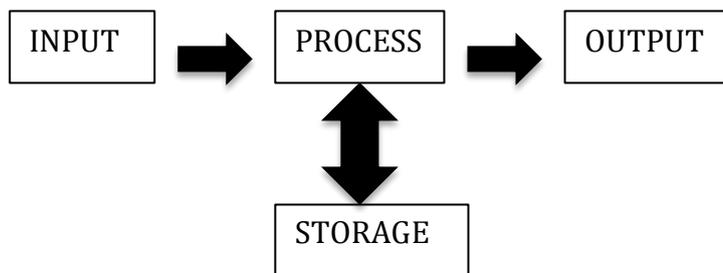
I. Input is any data or instructions that we enter into the computer system for processing

II. The processing unit controls all activities within the system. The CPU is an example of a processor.

III. Output is data that has been processed into a useful form, called information.

IV. Storage is a location which data, instruction and information are held for future use.

3. Draw the information processing cycle



4. State the relationship of data representation: bit, byte and character.

I. A bit is the smallest unit of data that the computer can process. Bit is a short for binary digit.

II. Byte is a unit of information built from bits. One byte is equals to 8 bits. Eight bits that are grouped together as a unit

III. A byte represents a single character in the computer. One character such as A, 7, 9 and + is eight bits that are grouped together

5. Explain the function of ASCII code

I. ASCII was established to achive compatibility between various types of data processing equipment making it possible for tahe components to communicate with each other successfully.

ii. ASCII enables manufacturerers to produce components that are assured to operate correctly in a computer

iii. ASCII makes it possible for human to interact with a computer. It also enables users to purchase components that are compatible with their computer configuration.

6. State the units of data measurement

**i. Byte**

1 byte = 8 bit

**ii. Kilobyte (KB)**

1 KB = 1024 bytes or 1 KB = 210 bytes

**iii. Megabyte (MB)**

1 MB = 1 048 576 bytes or 1 MB = 220 bytes

**iv. Gigabyte (GB)**

1 GB = 1 073 741 824 bytes 1 GB = 230 bytes

**v. Terabyte (TB)**

1 TB = 1 099 511 627 776 bytes or 1 TB = 240 bytes

7. State the units of clock speed measurement

**i. Hertz & Seconds**

A hertz is one cycle per second.

**ii. Megahertz (MHz)**

Megahertz (MHz) equals to one million cycles of the system clock.

(Mega is a prefix that stands for million. A computer that operates at 933 MHz has 933 million clock cycles in one second.)

**iii. Gigahertz (GHz)**

Gigahertz (GHz) equals to one billion cycles of the system clock. In relation with megahertz, 1.0GHz is equivalent to 1000 MHz.

LATIHAN 2.2
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1. Identify the input devices used for text, graphic, audio and video

i. Input device for teks

Keyboard – You can enter data such as text and commands into a computer by pressing the keys on the keyboard

Virtual keyboard – You can press the keys of a virtual keyboard on the screen

Optical reader – An optical reader is a device that uses a light source to read characters, marks and codes and data that a computer can process.

ii. Input for graphic

Scanner – is a device that captures images from photographic prints, poster and similar sources for computer editing and display.

Digital Camera – Allows you to take pictures and store the photographed images digitally

iii. Input for audio

Microphone – To entered an audio element to computer like a speech, music.

Midi Keyboard – a digital musical instruments to make a MIDI format file.

iv. Input for audio

CCTV – Close-Circuit Television video camera is a input of motion images into the computer.

WEBCAM – is any video camera that displays its output on a web page

Digital Video Camera – to record full motion and store that captured motion digitally.

2. Identify the output devices used for text, graphic, audio and video.

i. Output device for text

LCD Monitor – can be used to display text. Its can also diplay graphic and video.  
 Printer – used to print text, apart from graphics, on medium such as paper, transparency film or even cloths.

ii. Output device for Graphics

Photo Printer – is a colour printer that produces photo lab-quality pictures  
 Plotter – an images setter is a high resolution output devices that transfer electronic text and graphics directly to film or photo sensitive paper.

iii. Output device for Audio

Speaker – oudio output that generates sound  
 Headphone – small speaker placed over the ears and plugged into a port on the sound card  
 Woofer – used to boost the bass and is connected to the port on the sound card

iv. Output device for Video

LCD projector –A Liquid Crystal Display uses its own light source to project what is displayed on the computer on a wall or projection screen.  
 DLP Projector – uses tiny mirrors to reflect light which can be seen clearly in a well-it-room

3. Identify the location of the central processing unit (CPU), expansion slots, expansion cards, RAM slots, ports and connectors on the motherboard.

- i. RAM slot
- ii. PCI Slot
- iii. CPU socket
- iv. External port
- v. VGA port
- vi. LPT1 Printer port

4. Explain types and functions of :

i. primary storage (RAM, ROM)

	<b>RAM</b>	<b>ROM</b>
<b>DATA AND PROGRAM CONTENT</b>	<i>Stores during and after processing</i>	<i>Stored by manufacturer</i>
	<i>Stores information temporarily</i>	<i>Stores instructions (Information) permanently</i>
<b>PROCESSING TIME</b>	<i>Very fast, but uses a lot of power</i>	<i>Fast, but uses very little power</i>
<b>VOLATILITY</b>	<i>Volatile</i>	<i>Non-volatile</i>

- ii. secondary storage
  - magnetic medium – is a non volatile storage medium. Magnetic disk such as a floppy disk, hardisk and magnetic tape such as video cassette.
  - optical medium – a non volatile storage media that holds content in digital form that are written and read by a laser.
  - flash memory – a solid state, non volatile, rewritable memory that functions like RAM and a hard disk drive combined

LATIHAN 2.3

1. State the various types of OS used on different platforms.

PC Platform OS	Apple Platform OS	Cross Platform OS
Disk Operating System (DOS)	Mac OS	Unix
Microsoft windows XP	Mac OS X	Linux

2. State the functions of OS.

- ❖ **Starting a computer**
- ❖ **Providing a user interface**
- ❖ **Managing data and programs**
- ❖ **Managing memory**
- ❖ **Configuring devices**

3. State the different interfaces of OS.

**Command-Line User Interface**

*The command-line user interface requires a user to type commands or press special keys on the keyboard to enter data and instructions that instruct the operating system what to do. It has to be typed one line at a time. It is difficult to use because it requires exact spelling, syntax or a set of rules of entering commands and punctuation.*

**Menu Driven Interface**

*Menu-driven user interface enables the user to avoid memorizing keywords such as copy, paste and syntax. On-screen, menu-driven interface provide menus as means of entering commands. It shows all the options available at a given point in a form of text-based menu. Menu-driven user interfaces are easy to learn.*

**GRAPHICAL USER INTERFACE (GUI)**

*GUI makes use of the computer's graphics capabilities to make the operating system and programs easier to use, which is also called 'user-friendly'. Today GUIs are used to create the desktop that appears after the operating system finishes loading into memory.*

4. Describe the uses of application software (wordprocessing, spreadsheet, presentation, graphic).

**i. Usages of Word Processing Software**

*A word processing software allows users to create and manipulate documents containing mostly text and sometimes graphics. It provides the ability to create, check spelling, edit and format a document on the screen before printing it to paper.*

**ii. Usages of Spreadsheet Software**

*Spreadsheet software is an application that allows users to organise and manipulate data in rows and columns. It produces worksheets that require repetitive calculations – budgeting, maintaining a grade book, balancing accounts, tracking investment, calculating loan payments, estimating project costs and preparing financial statements.*

**iii. Usages of Presentation Software**

*Presentation software is an application that allows users to create visual aids for presentations to communicate ideas, messages and other information to an audience. Examples of presentation software are Microsoft PowerPoint, StarOffice Impress and CorelDraw.*

**iv. Usages of Graphics Software**

*Graphics software is an application that allows users to work with drawings, photos and pictures. It provides the users the ability of creating, manipulating and printing graphics. Examples of graphics software are Microsoft Paint, Adobe Photoshop, Adobe Illustrator, Corel Painter and Macromedia Fireworks.*

5. Differentiate between the types and usage of utility programmes (file management, diagnostic and file compression).

**i. File Manager**

*File manager is the software used to manage files on a disk. It provides functions to delete, copy, move, rename and view files as well as create and manage folders (directories). File manager performs tasks of formatting and copying disks, displaying a list of files on a storage medium, checking the amount of used or free space on a storage medium, organising, copying, renaming, deleting, moving and sorting files and also creating shortcuts.*

**ii. Diagnostic Utility**

*A diagnostic utility compiles technical information about a computer's hardware and certain system software programs and then prepares a report outlining any identified problems. Information in the report assists technical support staff in remedying any problems.*

**iii. File Compression**

*Data compression is a utility that removes redundant elements, gaps and unnecessary data from a computer's storage space so that less space is required to store or transmit data. With the increasing use of large graphics, sound, and video files, data compression is necessary to reduce the time required to transmit such large files over a network.*

*Compressed files are sometimes called zipped files and it must be unzipped to its original form before being used. Two popular file compression utilities are PKZIP and WinZip.*

6. Differentiate between proprietary and open source software

<b>SOFTWARE</b>	<b>PROS</b>	<b>CONS</b>
<i>Windows XP (Propriety Software)</i>	<ul style="list-style-type: none"> <li>❖ runs on a wide range of hardware</li> <li>❖ has largest market share</li> <li>❖ has many built-in utility</li> </ul>	<ul style="list-style-type: none"> <li>❖ security problems</li> <li>❖ not efficient as a server OS</li> <li>❖ have to reboot every time a network configuration is changed</li> </ul>
<i>Mac OS X (Propriety Software)</i>	<ul style="list-style-type: none"> <li>❖ easy to install</li> <li>❖ best Graphical User Interface (GUI)</li> <li>❖ secure and stable</li> </ul>	<ul style="list-style-type: none"> <li>❖ supports only Apple computers</li> <li>❖ base hardware more expensive than other platforms</li> <li>❖ fewer utilities available</li> <li>❖ fewer games than Windows</li> <li>❖ many applications still being updated to run with OS X</li> </ul>
<i>Linux (Open Source Software)</i>	<ul style="list-style-type: none"> <li>❖ runs on a wide range of hardware</li> <li>❖ has largest number of user interface types</li> <li>❖ can be used as desktop PC OS or server</li> </ul>	<ul style="list-style-type: none"> <li>❖ limited support for games</li> <li>❖ limited commercial application available</li> <li>❖ can be difficult to learn</li> </ul>

LATIHAN 2.4

1. Explain the latest open source OS and application software available in the market.

An operating system is a set of programs containing instructions that coordinate all the activities among computer hardware resources. Most operating system perform similar function that includes starting a computer, provide a user interface, managing program, managing memory and configuring devices. Some operating system also allows user to control a network and administer security.

Open Source Operating System is any operating system that is free to use and which provides the original code where the source code is available (under a copyright license) to the public, which enables them to use, modify / enhance the operating system, and redistribute the modified (or unmodified) form of the operating system. The advance user can modify the code of the operating system to make it works better for them in starting the computer or a likely user interface

Linux is the best example of Open Source OS.  
OpenSolaris, FreeBSD, OpenBSD, GNU etc are other example of Open Source OS's

2. Explain the latest ICT hardware and software

Open source software is computer software that is available in source code form, the source code and certain other rights normally reserved for copyright holders are provided under a software license that permits users to study, change, improve and at times also to distribute the software. Some open source software is available within the public domain. Open source software is very often developed in a public, collaborative manner. Open-source software is the most prominent example of open-source development and often compared to user-generated content or open content movements.

Hardware is a general term for the physical artifacts of a technology. It means the physical devices or physical components of a computer system, in the form of computer hardware. Hardware of a modern personal computer are monitor, motherboard, CPU, RAM, expansion cards, power supply, optical disc drive, hard disk drive, keyboard and mouse.

3. Explain pervasive computing.

Pervasive computing means the technology that is gracefully integrated in our everyday life. The user is no longer aware of this embedded technology. Pervasive computing uses web technology, portable devices, wireless communications and nomadic or ubiquitous computing systems. Other terms for pervasive computing are Ubiquitous Computing, Calm Technology, and Things That Think