

24 May

Chapter 1

Computer System Overview

Notes

1) What is computer?

Ans) Computer is an electronic device which performs variety of functions in accordance with set of instructions called programs. It's the combination of hardware and software.

2) What is hardware?

Ans) They are physical devices of a computer. Examples are, mouse and keyboard.

3) What is software?

Ans) They are set of instructions which governs the hardware. For example, Microsoft Word and Visual Studio.

4) What is programs?

Ans) Programs is set of instructions to carry out a specific task.

5) Input Unit: It converts human language to binary language. For example, printer.

6) Output Unit: It converts binary language to human language. For example, monitor.

7) CPU: Central Processing Unit is the control center or the brain of computer.

8) ALU: Arithmetic and Logical Unit is responsible for carrying out basic operation like $+$, $-$, $*$, $/$.

9) CU: Control Unit: It acts as a supervisor and guides the operation taking place.

It controls and guides and interpretation flow of all data and information.

It sends control signal until the required operation are done properly by ALU and memory.

It controls the flow of data from input devices to memory and from memory to output devices.

Registers : It's small amount of high speed ~~memo~~ memory contained in the CPU.

It's used to quickly accept, store and transfer data and instruction that are being used ~~in~~ at once by the CPU.

ii) Memory : An organised collection of cells used to store data and programs in a computer. It is a predefined working place where it keeps data and information for processing.

Smallest unit in memory is 1 bit (binary digit)

8 bit = 1 byte

1024 byte = 1 kilobyte (KB)

$1024 \text{ KB} = 1 \text{ Megabyte (MB)}$

$1024 \text{ MB} = 1 \text{ Giga byte (GB)}$

$1024 \text{ GB} = 1 \text{ Terabyte (TB)}$

$1024 \text{ TB} = \text{Petabyte (PB)}$

There are 4 types of memory, Primary, secondary, registers and cache.

In Primary memory, it's classified into two types, Ram and ROM.

12) RAM : Random Access memory

ROM : Read-only memory

DRAM : Dynamic random access memory

SRAM : Static random access memory.

PROM : Programmable ROM

EPROM : Erasable - Programmable Rom

EEPROM : Electrically Erasable - programmable ROM.

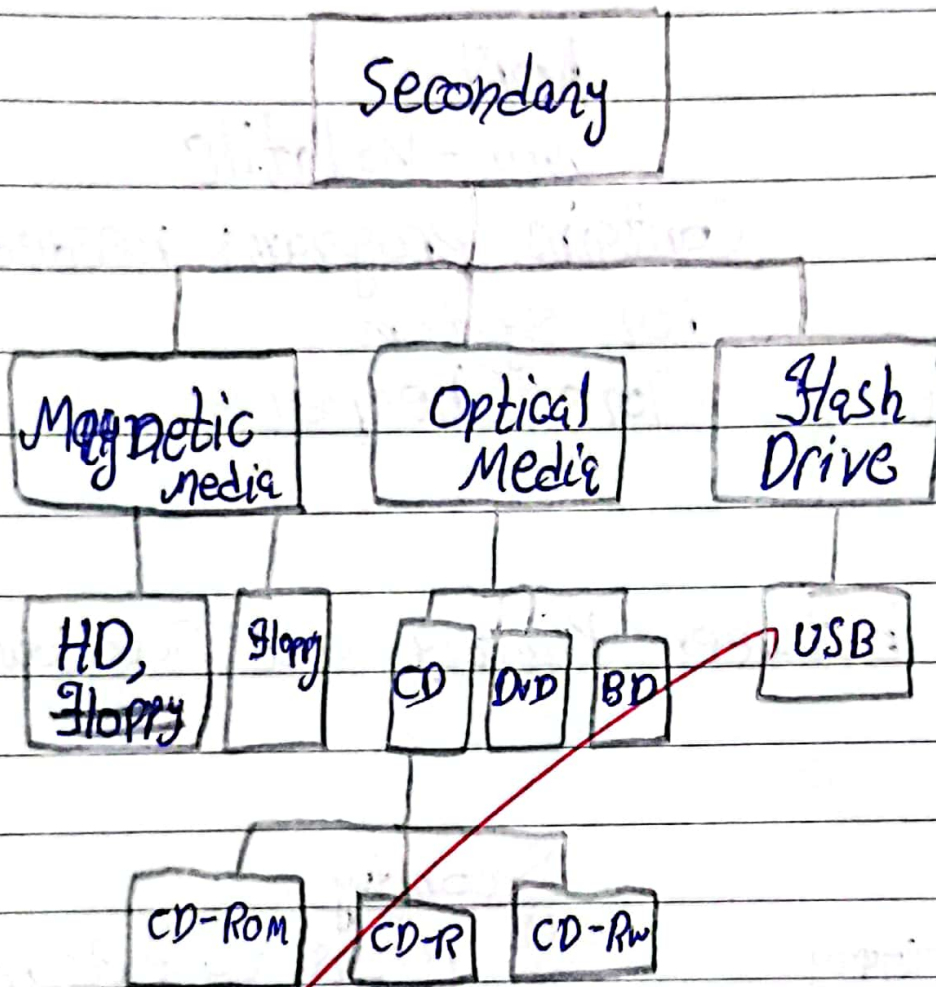
12) Differentiate between RAM and ROM.

Ans)	<u>RAM</u>	<u>ROM</u>
	Volatile	Non-Volatile
	OS apps	Contains programs needed for system
	More expensive	More Cheaper

13) Differentiate between Primary and Secondary memory.

<u>Primary</u>	<u>Secondary</u>
It is the main memory where the data is stored temporarily	It refers to external memory where the data is stored permanently
It's a volatile memory - data can't be retained in case of power failure.	It's a non volatile memory - data can be retained in case of power failure.
Faster than Secondary memory	Slower than Primary.

14) What are the types of secondary memory?



HD - Hard disk

HDD - 3D Drive

CD - CD Readable Recordable

CD - Compact disk

CD-RW - CD Rewritable

CD-ROM - CD Read Only Memory

DVD - Digital Video Disc

BD - Blu Ray Disk

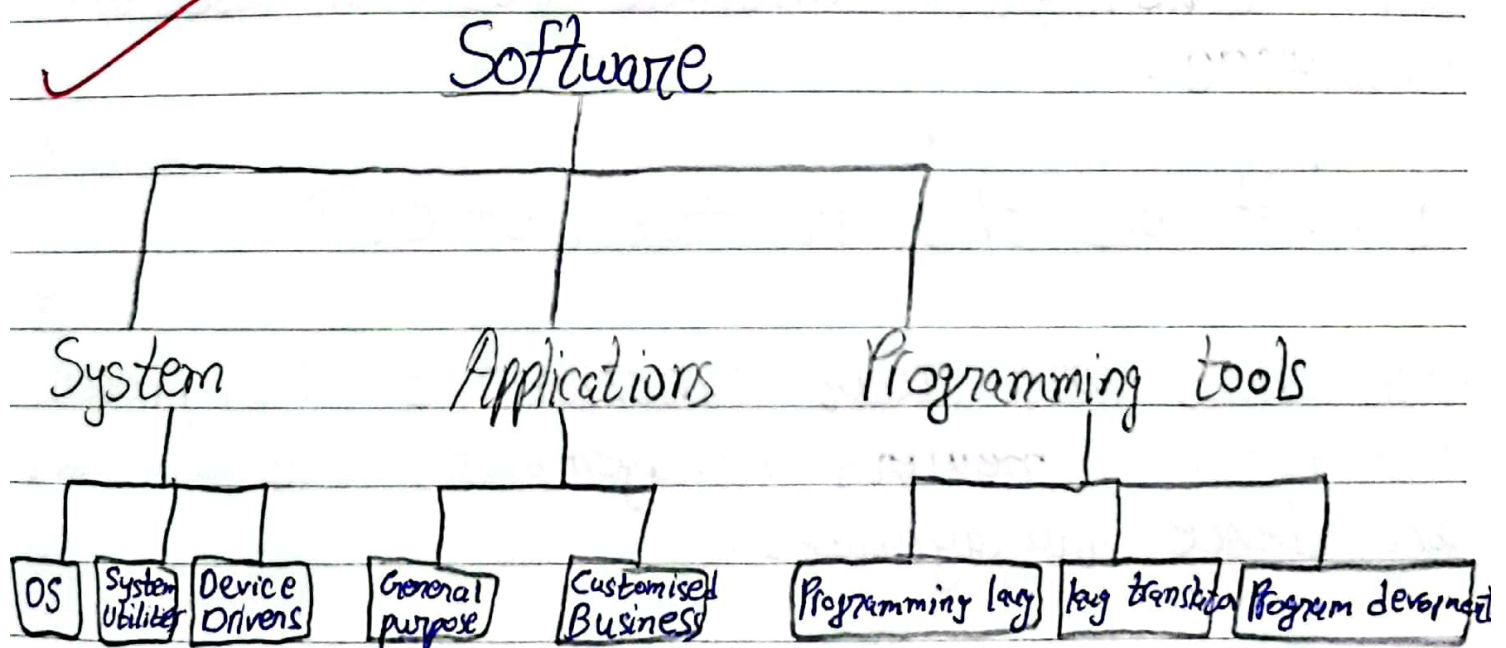
USB - Universal Serial Bus

15) What is cache?

Ans) It is a very fast memory type that acts as a buffer between RAM and CPU.

It holds frequently requested data and instructions so that they are immediately available to CPU when needed.

16) What are types of software?



Examples of System Utilities are Backup, Compression, Disk defragmenter, Antivirus.

Examples of General purpose, word processing, DBMS, Browser

Examples of Language Translators, Assembler, Compiler, Interpreter.

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17) System Software: The software that controls the internal computer operations.

18) Operating systems (OS): It's a program which acts as an interface between user and hardware.

19) What are the functions of OS?

Ans) There are four functions of OS, process management, memory management, file management and device management.

20) What are the ^{types of} OS user interface?

Ans) There are 5 types of OS user interface:

- a) Command Based interface - MS DOS, Unix
- b) Graphical user interface - Windows, Mac OS
- c) Touch Based interface - iOS, Android
- d) Voice Based interface - Bixpy, Siri
- e) Gesture Based interface - some camera software

21) Define System Utilities :

Ans) Utilities are those application programmes that assist the computer by performing house-keeping activities. For example, backup and Disk defragmentation.

22) What is the role of disk defragmenter?

Ans) It speeds up disk by rearranging the files and free space on your computer, so that the files are stored in continuous units and free space is consolidated one single block.

23) Define Application software.

Ans) It is the set of programs necessary to carry out operations for a specified application.

23) What do you mean by general purpose software?

Ans) General purpose software is developed for general applications.

24) Define customised software.

Ans) Custom made application software, which are developed to meet the requirement of a specific business.
For example, airline booking app.

25) Payroll system :- It is used for payments. For example, hotel management.

26) What is source code?

Ans) A program written by a programmer using high level language. For example, C++, Python.

27) What is object code?

Ans) Object code is the product of a compiler.

28) Define Assembler.

Ans) It converts a program in Assembly language into binary code.

29) Define Interpreter.

Ans) It converts source code to object code line by line.

30) Define Compiler.

Ans) It converts source code to object code at once for the whole file.

31) What is ^{the difference between} compiler and Interpreter?

Ans) Compiler	Interpreter
It takes an entire program as input.	It takes single instruction as an input.

intermediate object
code

no intermediate is
required

memory requirement is
more since object is
generated.

memory requirement is
less since object is
generated line by line.

Error are displaced
after entire program is
checked.

Error are displaced after
every line.

Slow for debugging

Fast for debugging

Examples: C++, Java

Examples: Python