

Memory and Storage

Key Words

BIOS	Basic Input Output System - the basic firmware that is embedded in the computer ROM chip used to start a computer.
cache memory	Very fast memory, on, or very close to the CPU
capacity	How much data the storage device holds.
durability	How robust is the storage device. Can it easily be damaged if moved.
flash memory	A type of ROM chip which holds its data when there is no power making it non-volatile but that can be rewritten easily by the user.
non-volatile	Memory which can retain its data when the power is turned off
portability	How easy can the storage device be transported (size, shape, weight)
reliability	How long lasting is the storage medium.
speed	How quickly can the data be transferred to and from the storage device.
swapping	The process of moving data between RAM and secondary storage when using virtual memory.
volatile	Memory which requires constant electrical charge. If the power is turned off, then the data is lost

Primary Storage

Random Access Memory (RAM)

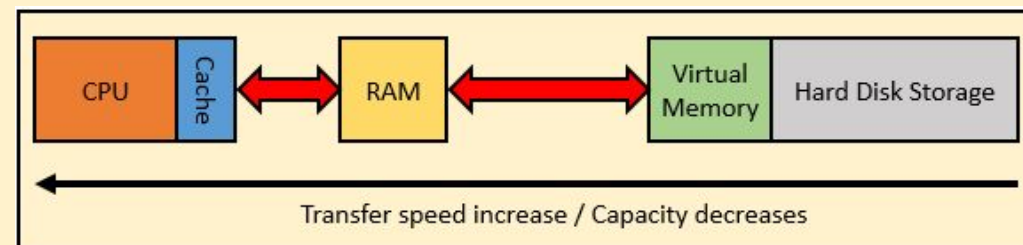
- RAM is the computer's main memory that holds the data, programs and files while they are being used.
- RAM is volatile (power off = the data is lost)
- The CPU will fetch instructions from the RAM in the fetch - decode - execute cycle.
- When the RAM is full the computer uses Virtual Memory. It uses the secondary storage as temporary RAM so that the computer can continue running (but slowly).

Read Only Memory (ROM)

- ROM is read only memory
- ROM is non volatile (power off = data is still stored)
- The CPU accesses the ROM immediately when the computer is turned on.
- ROM stores the boot up instructions and BIOS (Basic Input Output System).

Virtual Memory (VM)

- A section of the HDD which can be used as RAM for very memory intensive processes
- Data will be sent back and forth between RAM and VM (known as Disk thrashing, paging or swapping).



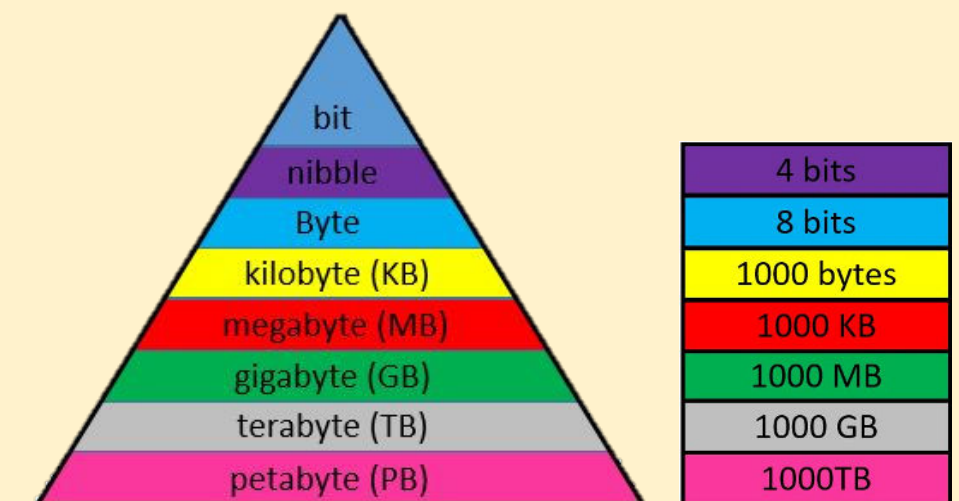
Secondary Storage

- Secondary Storage: where all data including the programs are stored when they are not being used.

Storage	Key Information
Hard Disk Drive (HDD)	Magnetic, has moving parts, large capacity, lower cost than SSD
Solid State Drive (SSD)	Flash memory, no moving parts, more robust than HDD, faster and more expensive than HDD
Optical Storage	e.g. CDs, DVDs. Cheap, portable and fairly robust.
Magnetic Tape	Used for archive storage (backups). Very large capacity, low cost, slow.

- Storage device comparison factors: speed, cost, durability, reliability, capacity and portability.

Units



Quizizz



Extended Reading



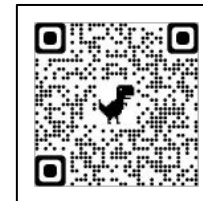
Exam Questions



Video



Revision Techniques



Quizlet



Specification



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