

Primary, Secondary and Offline storage

Primary

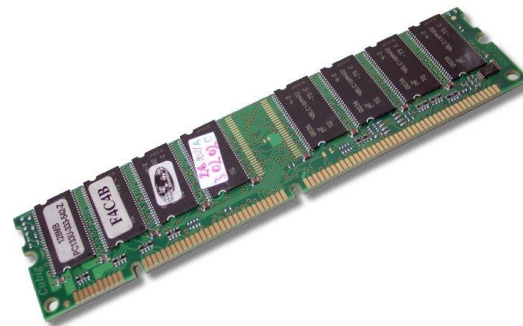
Definition: Storage that can be accessed directly by the CPU

Also known as “**memory**”. It is close to the CPU.

Speed: Very fast. It is close to the CPU. Uses fast technologies (storage mediums).

Relevant types of storage:

- RAM
- ROM



Comparing Primary with Secondary / Offline Storage

Primary	Secondary / Offline
Smaller (some GBs or less)	Larger (up to 2 TBs)
Faster to access	Slower to access
Can be accessed directly by CPU	Must go through RAM to get to CPU
Always inside computer	Some types are removable

Secondary

Definition: Storage that cannot be accessed directly by the CPU (the CPU must go through the RAM to get to it). Unlike offline storage, it is found inside the computer, and is not removable.

Speed: Slower than primary. It is further from the CPU than primary. Can use slower technologies

Relevant types of storage / memory:

- HDD
- SSD



Purpose

- Stores operating system and applications. Also many files.



Offline

Definition: Non-volatile storage than can be removed from the computer.
Like secondary, it cannot be accessed directly by the CPU.

Speed: Slowest. It is furthest from the CPU. Often uses slowest technologies

Relevant types of storage / memory:

- External HDD
- Magnetic tape
- CD, DVD, Blu-Ray disk
- Flash drive



Purpose

- Backing up files. Transportation of files. Holding music albums or software.

Test your knowledge:

- What are all the different types of primary storage? _____
- What is the description of primary storage? _____
- What are all the different types of secondary storage? _____
- What are all the different types of off-line storage? _____
- What is the description of secondary storage? _____
- What is the description of off-line storage? _____
- What is the purpose of secondary storage? _____
- What is the purpose of off-line storage? _____

Image sources: <https://pixabay.com/en/hdd-hard-disk-drive-disk-hard-disk-154463/>; https://en.wikipedia.org/wiki/Solid-state_drive;
https://commons.wikimedia.org/wiki/File:Windows_logo_-_2012.svg; https://commons.wikimedia.org/wiki/File:Icons8_flat_folder.svg;
https://en.wikipedia.org/wiki/File:MS_Office_2007_Logo.svg; <http://openclipart.org/detail/84553/usb-flash-drive-by-jhnri4>; https://commons.wikimedia.org/wiki/File:Dvd_3d.png;
https://en.wikipedia.org/wiki/Magnetic_tape; <https://superuser.com/questions/588324/if-i-plug-a-hibernated-hard-drive-to-another-laptop-what-will-happen-to-the-hib>

Test your knowledge cont:

Complete:

Primary	Secondary / Offline

Why is primary storage faster than secondary storage? _____

Why is offline storage the slowest? _____

Why would an offline storage medium like magnetic tape be slower than an external drive? _____

What does it mean to “back up files”? _____