# HDD

* Hard disk drive
* A solid-state drive reads up to 10 times faster and writes up to 20 times faster than a hard disk drive. SSDs outpace HDDs because they use electrical circuitry and have no physical moving parts. SSDs are connected to CPU with a cable, which makes him slower than RAM.
* The RAM is way faster than the hard drive. And faster than SSD. Because it is directly connected to motherboard, directly communicates with CPU and always working.
* Cache is a smaller and fast memory component in the computer which is inserted between the CPU and the main memory. Faster than ram because less size, uses static RAM and main memory uses dynamic RAM. It stores data which the processor may require next.

Cache > RAM > SSD > HDD

Because, Hard drive uses spinning platter and magnetic heads to read the data stored. As you add more data to your drive, the drive mechanism must work harder to find the exact data one wants, which slows down the retrieval of data. There are also many small moving parts that can fail or slow performance.

## Why & When HDD:

* Reliable over long periods of time
* Best choice for archiving information and mass storage, as they resist degradation over time if kept in a dry environment with a low temperature.
* Cheaper than SSDs.
* The risk of sudden, catastrophic data loss is lower.
* Great solution if you’re focused less on performance and more on reliable function.

### Disadvantages:

* Mechanical failures.
* Slower response times.
* Sensitive to temperature.
* Weak to vibration and shock.
* Heavier and bulkier