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**CA2020 Bootcamp- Assignment Day-1**

**Question No:01:** What is Cache Memory?

**Answer:**Cache is a special high speed storage mechanism. Cache can be a part of a main memory that is RAM or can be there as a part of independent storage device

Two types of Cache:

1)Memory cache

2)Disk cache

*3)L1 and L2 Caches*

1)Memory cache:

This cache as per its name situated in the Random Access Memory this is actually a high speed static memory(SRAM) and has a high speed as compared to Dynamic Memory (DRAM). SRAM is better than DRAM and the reason behind it is that user frequently uses the same data over and over so that data gets stored into this fast memory and can be access really quick makes this whole process faster.

2)Disk Cache:

Unlike Memory cache Disk cache is stored in the Main memory instead of SRAM and it stores the most recent open data in some buffer for applications and when that data is needed again it first checks that buffer and tries to find that data from there.

*3)L1 and L2 Caches:*

Some memory caches are built into the architecture of microprocessor .Those *internal caches* are called. Level 1 means L1 caches Most modern PCs also come with external cache memory, called Level 2(L2). These caches are between the CPU and the DRAM. They are a type of SRAM but in much more size

When data is found in the cache that is called cache hit and the efficiency of cache memory is dependent upon the hit rates and there are some techniques to do that called smart caching where frequently used data gets found and stays in the cache for long time

**Question No:02:** What is Disk Management?

**Answer:**

Disk Management is used to manage the drives installed in a compute like [hard disk drives](https://www.lifewire.com/what-is-a-hard-disk-drive-2618152) (internal and [external](https://www.lifewire.com/what-is-an-external-drive-2625867)), [optical disk drives](https://www.lifewire.com/what-is-an-optical-disc-drive-2618157), and [flash drives](https://www.lifewire.com/what-is-a-flash-drive-2625794). It can be used to [partition](https://www.lifewire.com/what-is-a-partition-2625958) drives, [format](https://www.lifewire.com/what-does-it-mean-to-format-something-2625882) drives, assign drive letters, and much more.You can use this utility either on a local computer or on a remote computer on the network. Whether you want to create a partition, assign it a drive letter, or perform a complex and advanced task such as managing fault-tolerant volumes

**Question No:03:**Cache vs RAM?

**Answer:**

1. RAM uses the DRAM while cache uses SRAM
2. RAM is main memory but cache can be situated out or inside the RAM
3. SRAM is faster but more expensive and requires more transistors so it is bigger physically for the same amount of storage space
4. RAM stores the programs and data that are running (ignoring virtual memory). Cache stores a copy of part of that.
5. Cache is smaller in size fast but cant store much more data in it
6. RAM stores every data that is being used currently and the Cache copies the frequently used data into itself.

Both of them are volatile.

**Question No:04:**HDD vs SSD?

**Answer:**

1. The traditional spinning hard drive is the basic non-volatile storage on a computer A hard drive is essentially a metal platter with a magnetic coating that stores your data that is called HDD and SSD is something in which data is instead stored on interconnected flash-memory chips that retain the data even when there's no power present.These flash chips are of a different type than the kind used in USB thumb drives
2. SSD is expensive as compared to HDD but it is much more faster than HDD
3. Because of their rotary recording surfaces, hard drives work best with larger files that are laid down in contiguous blocks. That way, the drive head can start and end its read in one continuous motion. SSDs can't, however, because the lack of a physical read head means data can be stored anywhere without penalty
4. SSD is more durable cause it does not have any movable parts like HDD