MCA 2nd Semester

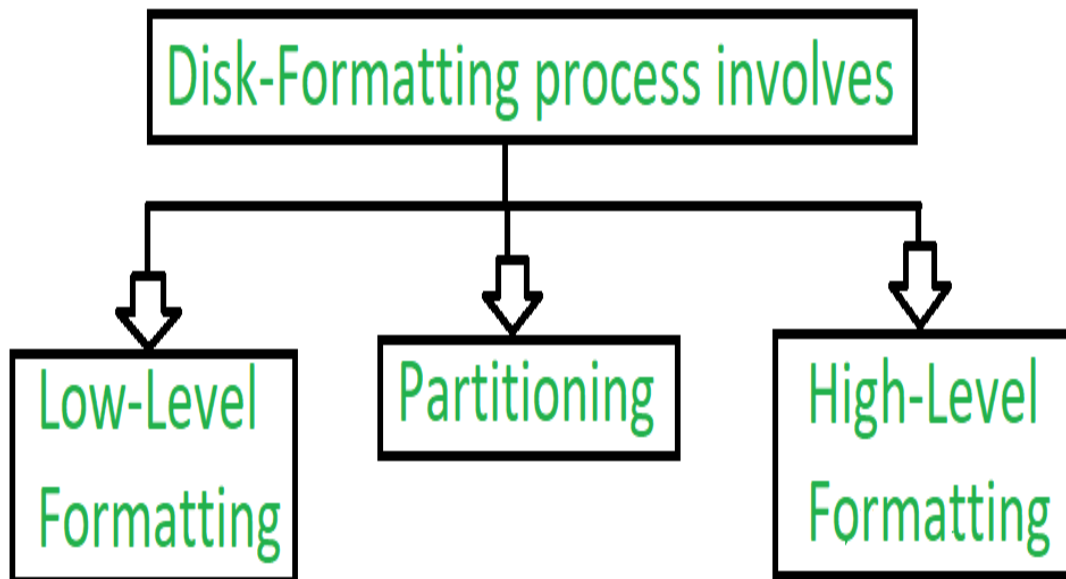CS-23 Operating System and Shell Programming

Unit 4

Topic : Disk Formatting

Disk formatting is a process to configure the data-storage devices such as hard-drive, floppy disk and flash drive when we are going to use them for the very first time or we can say initial usage. Disk formatting is usually required when new operating system is going to be used by the user. It is also done when there is space issue and we require additional space for the storage of more data in the drives. When we format the disk then the existing files within the disk is also erased. We can perform disk formatting on both magnetic platter hard-drives and solid-state drives.

When we are going to use hard-drive for initial use it is going to search for virus. It can scan for virus and repair the bad sectors within the drive. Disk formatting has also the capability to erase the bad applications and various sophisticated viruses.

As we know that disk formatting deletes data and removes all the programs installed with in the drive. So it can be done with caution. We must have the backup of all the data and applications which we require. No-doubt disk formatting requires time. But the frequent formatting of the disk decreases the life of the hard-drive.

Figure – Formatting process of disk

1. Low-level Formatting :

Low level formatting is a type of physical formatting. In is the process of marking of cylinders and tracks of the blank hard-disk. After this there is the division of tracks into sectors with the sector markers. Now-a-days low-level formatting is performed by the hard-disk manufactures themselves.

We have data in our hard-disks and when we perform low-level formatting in the presence of data in the hard-disk all the data have been erased and it is impossible to recover that data. Some users make such a format that they can avoid their privacy leakage. Otherwise low-level will cause damage to hard-disk shortens the service-life.

Therefore, this formatting is not suggested to users.
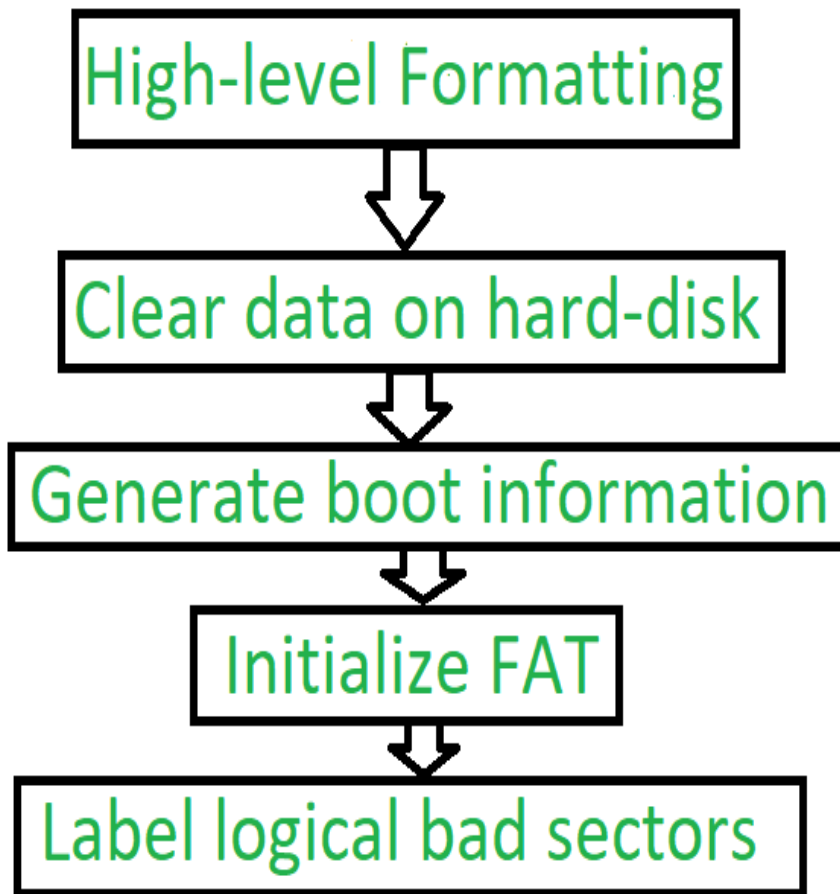
2. Partitioning :

As suggesting from the name, partitioning means divisions. Partitioning is the

process of dividing the hard-disk into one or more regions. The regions are called as partitions.

It can be performed by the users and it will affect the disk performance.

3. High-level Formatting :

High-level formatting is the process of writing. Writing on a file system, cluster size, partition label, and so on for a newly created partition or volume. It is done to erase the hard-disk and again installing the operating system on the disk-drive.

Figure – Steps of High-level Formatting

Firstly High-level formatting clears the data on hard-disk, then it will generate boot information, the it will initialize FAT after this it will go for label logical bad sectors when partition has existed.

Formatting done by the user is the high-level formatting.

Generally, It does not harm the hard-disk.It can be done easily with the Administrator, Windows snap-in Disk Management tool, diskpart, etc.

We can use such a format to use such a format to fix some problems like errors in the file system, corrupted hard-drive and develop bad sectors.