

*Department of Computer Applications*

*Practical report*

*Based on*

**Booting And Hard Disk Partition**

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1. Overview of booting process

In computer, booting process is the process to start the computer via hardware such as a button. A computer center processing unit has no software in main memory so some process must load software into a memory before it can be executed.

Restarting the computer also called rebooting. Which can be hard. When we switch on the electric power to the CPU. On some system a soft boot may optionally clear RAM to zero. Hard and soft boot can be initiated by hardware. Booting is complete when the operative runtime system typically the operating system.

The process of retuning a computer from a state of sleep does not involve booting. There are many processes are running in the background. We press the power button of the system.it is very important to learn the booting process to know how the computer booting in the Linux system.

1.1. Process of booting process

In the process of booting we learn about how the linux start the process of booting. There are many level in linux booting.we also learn the how bios run in linux. The start up of a linux operating system follows a step by step process. This process start with power on or run a command in the terminal.

There are 6 level of booting process occure in linux booting process.

1. BIOS (Basic Input/Output System)
2. MBR (Master Boot Record)
3. GRUB (GRand Unified Bootloader)
4. KERNEL
5. INIT
6. RUNLEVEL

BIOS (BASIC INPUT/OUTPUT SYSTEM)

BIOS stand for basic input/output system. The BIOS loades and execute the MASTER BOOT RECORD boot loader first. When anyone first start the computer first of all the BIOS first perform some integrity check of the HDD and SDD. The BIOS search for loades and execute the boot loader program, which can be forund in the MBR (master boot record). The mbr is sometime on a pendrive or in a cd rom with a live installation of linux.

Once the boot loder program is detected in external prndrive or cd-rom then loader loaded into memory and the bios give control of the system to it.

MBR (MASTER BOOT RECORD)

MBR stand for master boot record. the mbr is responsible for loading and executing the GRUB boot loader. The master boot record is a small program that is executed when a computer is booting in the operating system and load it in memory.

The BIOS search for an MBR in any device like hard disk , pendrive, cd-rom,usb. The BIOS look for the MBR on the HDD in location which is first sector and first hear in first cylinder.

On a magnetic disc, a sector is a section of a track (i.e., a floppy disc or a platter in a HDD). It typically has 512 bytes and is the smallest chunk of data that a disc drive can access. An HDD uses a platter to store data. A platter is a tiny, very accurate aluminium or glass disc that is covered on both sides with a high-sensitivity magnetic substance. In order to maximise the data storage surface in a given volume of space, modern HDDs have numerous platters that are all placed on a single shaft.