EXPERIMENT 3	**Hard Disk Drive (HDD)** **(a) configuring CMOS setup** **(b) formatting and de-fragmenting the hard disk** **(c) partitioning using a flash disk** **(d) master/slave.**
Date:	

AIM

To install a Hard Disk Drive (HDD) and perform basic disk management tasks including configuring CMOS setup, formatting and de-fragmenting the hard disk, partitioning using a flash disk, and understanding master/slave configuration.

REQUIREMENTS

i. Desktop computer system
ii. Hard Disk Drive (HDD)
iii. SATA/IDE data cable and power cable
iv. Screwdriver set
v. Bootable flash disk (Windows/Linux)
vi. Windows operating system
vii. Anti-static wrist strap

PROCEDURE / PROGRAM

a) HDD Installation and Configuring CMOS Setup

1. Shut down the computer and unplug the power cable.
2. Open the cabinet and mount the HDD in the drive bay using screws.
3. Connect the data cable (SATA/IDE) to the motherboard and the power cable from SMPS to the HDD.
4. Close the cabinet and switch on the system.
5. Enter **CMOS/BIOS setup** by pressing **DEL / F2 / F10** during startup.
6. Check whether the installed HDD is detected under Standard CMOS Features / Storage Configuration.
7. Save changes and exit BIOS.

b) Formatting and De-fragmenting the Hard Disk

Formatting:

1. Boot into Windows OS.
2. Right-click *This PC → Manage → Disk Management*.

3. Select the new HDD, create a new volume, and format it using NTFS or FAT32.

De-fragmenting:
4. Open *Defragment and Optimize Drives*.
5. Select the HDD and click *Optimize*.
6. Wait for the process to complete.

c) Partitioning using Flash Disk

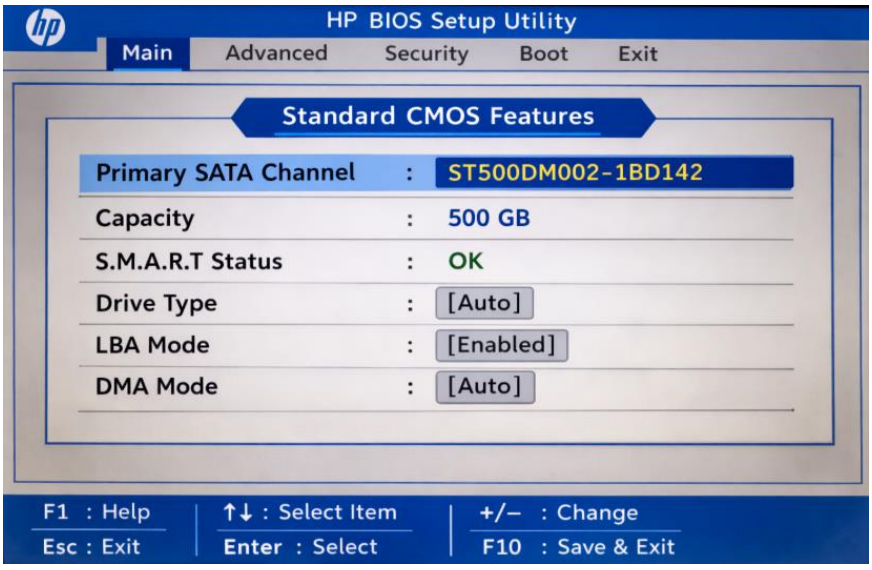
1. Insert the bootable flash disk and restart the system.
2. Set USB as first boot device in BIOS.
3. Boot into Windows/Linux setup.
4. Choose *Custom Installation* (Windows) or *Manual Partitioning* (Linux).
5. Create required partitions (Primary/Extended/Logical).
6. Format partitions and exit setup.

d) Master / Slave Configuration *(IDE HDD only)*

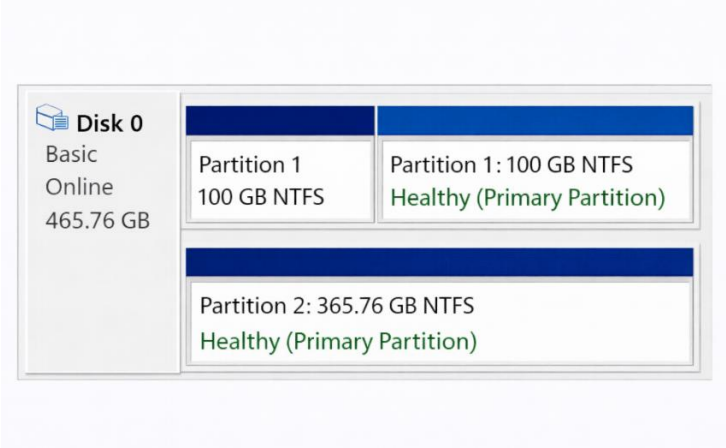
1. Power off the system and open the cabinet.
2. Locate the jumper pins on the IDE HDD.
3. Set jumper to **Master** or **Slave** as per requirement (using the label on HDD).
4. Connect IDE ribbon cable and power cable properly.
5. Boot system and verify detection in BIOS.

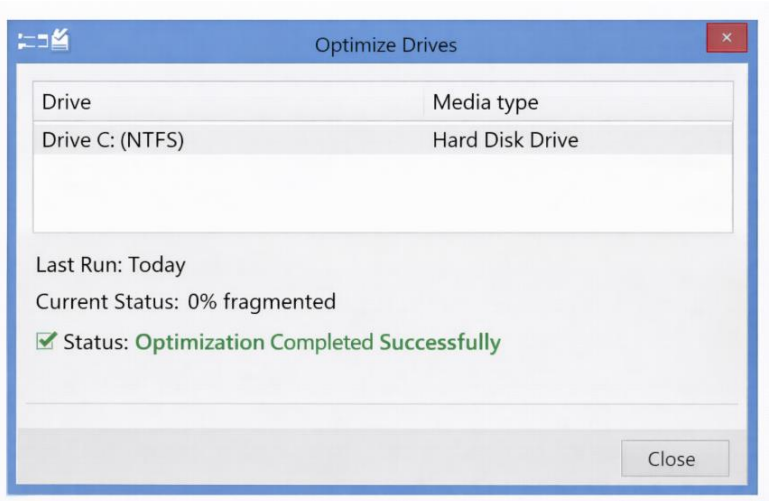
Program

a) HDD Installation and Configuring CMOS Setup

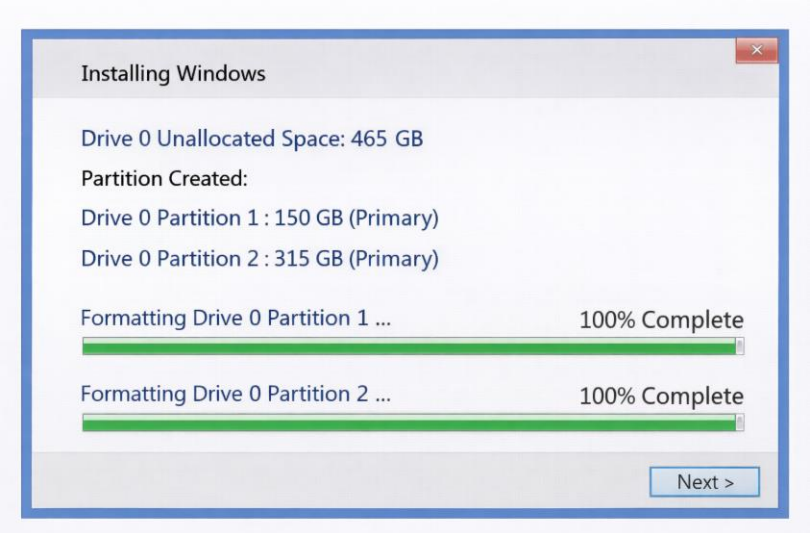


b) Formatting and De-fragmenting the Hard Disk

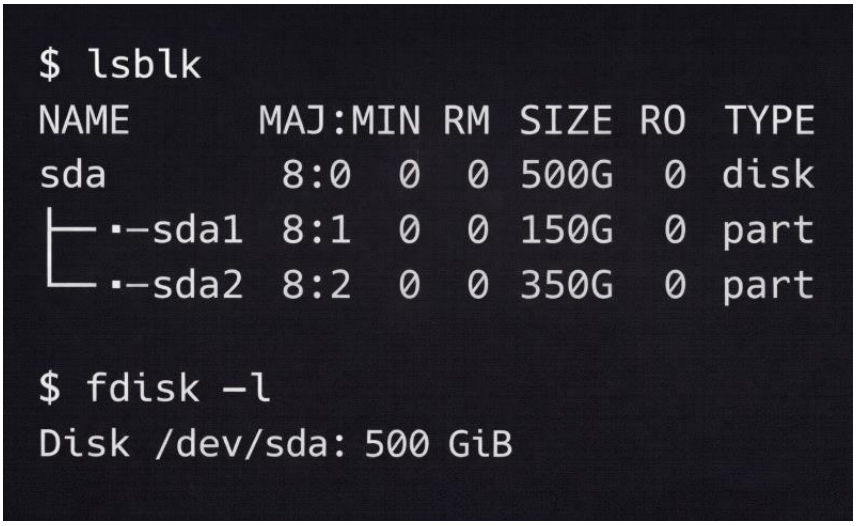




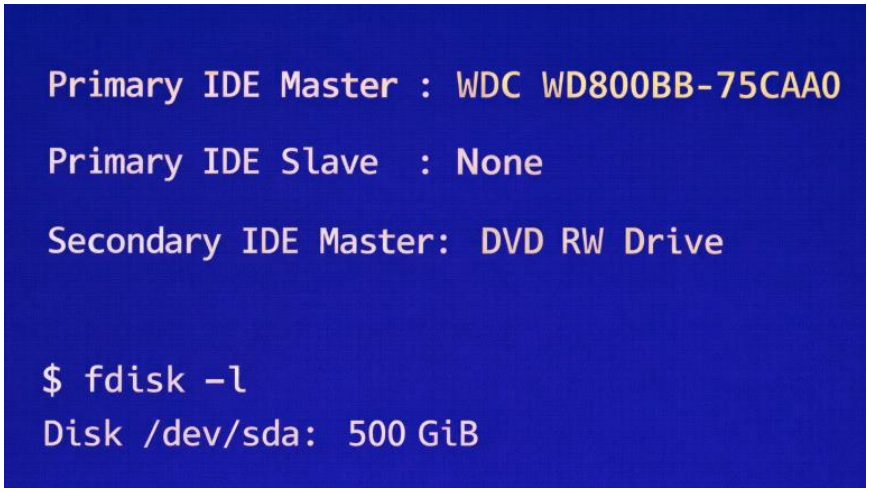
c) Partitioning using Flash Disk



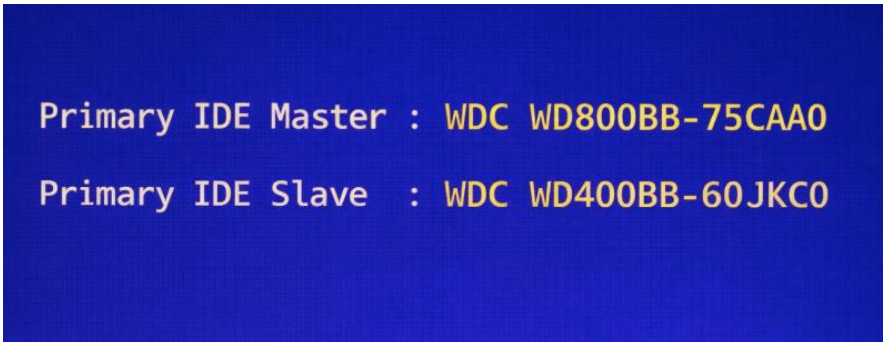
For Linux Terminal



d) Master / Slave Configuration



After changing jumper setting



RESULT

The Hard Disk Drive (HDD) was installed successfully and detected in CMOS setup. The disk was partitioned using a flash disk, formatted with NTFS file system, and defragmented successfully. Master/Slave configuration (IDE HDD) was done successfully and verified through BIOS detection.