NAME : INDRA MAULANA

NIM : F1D022009

# EXTERNAL MEMORIES

1. External memory refers to any type of data storage device that is separate from the computer's internal memory, such as hard disk drives, solid-state drives, USB drives, memory cards, and optical disks. These devices are used to store and retrieve data, programs, and files from a computer or other electronic device.

2. A Magnetic Disc is a type of storage device that uses magnetic fields to store and retrieve data. It consists of a flat circular platter coated with a magnetic material, and one or more read-write heads that move across the surface of the disc to read and write data.

3. The Head on Magnetic Disc refers to the read-write head that moves across the surface of the magnetic disc to access or modify data. The head hovers very close to the disc's surface, but does not make physical contact with it.

4. The writing mechanism on the Magnetic Disc works by using the read-write head to create a magnetic field on the disc's surface that aligns the magnetic particles in a specific pattern, representing the data being written. The head uses a current to generate the magnetic field, and the disc rotates to allow the head to write data to different sectors of the disc.

5. The magnetic disc read mechanism works by using the read-write head to detect the magnetic field on the disc's surface and convert it into electrical signals that can be interpreted as data. The head reads the data by detecting the changes in the magnetic field as the disc rotates beneath it.

6. In the cross-sectional layout of the Magnetic Disc, a track refers to a circular path on the disc's surface where data is stored. A sector is a pie-shaped segment of a track that contains a fixed amount of data, typically 512 bytes or 4 kilobytes. A cluster is a group of contiguous sectors that are treated as a single unit of storage.

7. Disk access time is the time it takes for the computer to read or write data to a disk. Seek time refers to the time it takes for the read-write head to move to the correct track on the disk. Rotational latency refers to the time it takes for the disk to rotate to the correct sector once the read-write head is in position. Access time is the sum of the seek time and the rotational latency, plus any additional time required to transfer the data.

8. RAID (Redundant Array of Independent Disks) is a technology that combines multiple disk drives into a single logical unit for the purposes of data storage and redundancy. RAID can improve performance, increase storage capacity, and provide fault tolerance by allowing data to be spread across multiple disks.

9.  There are several levels in RAID, including RAID 0, RAID 1, RAID 5, RAID 6, RAID 10, and more. Each level provides different benefits and trade-offs in terms of performance, capacity, and redundancy.

10. RAID 0 is a level that uses striping to spread data across multiple disks, improving performance but providing no redundancy. RAID 1 is a level that uses mirroring to duplicate data across multiple disks, providing redundancy but sacrificing some capacity and performance.