**Chapter 9: Multifile Processing: Direct Access**

**Ref book: Programming Practices & Techniques (6th edition)**

1. **Define cylinder, track, and sector.** (page no-187)

**Ans:**

**Cylinder:** The collection of tracks of the same numbers on a disk i.e. the tracks that can be read from or written to with a single positioning of the accessing mechanism.

**Track:** One of a series of concentric rings on the surface of a magnetic disc on which data is recorded.

**Sector:**

1. **What does mean by indexed file?** (page no-187)

**Ans:**  A file from which records may be retrieved directly by means of one or

more indexes; can be accessed sequential as well.

1. **What does mean by ISAM?** (page no-187)

**Ans: -** means **Indexed Sequential Access Method**

A means of organizing record on a direct access storage device that

provides for both direct and sequential.

1. **What does mean by IOCS?** (page no-189)

**Ans:** A part of the operating system of a computer that handles the reading and writing of records

1. **What does mean by updating an ISAM file?** (page no-189)

**Ans:** To updating an **ISAM file**, the programmer must supply IOCS with the key of the record needed and then issue a read command.

**-** When the read command is executed, **IOCS** retrieves from the field the key that it uses as a search argument in searching the indexes and the prime data area.

1. **What does mean by adding a record to an ISAM file?** (page no-192)

**Ans:** The key of the record is moved to the record key field, and the command to write an additional record is given.IOCS will set the I/O switch to zero unless a record with that key already exists in the file; in that case the I/O switch is set to one.

**More Information’s >>>**

- Adding record to an **ISAM** file may be batch or online.

- If batch is used Access may be **direct** or **sequential.** Normally used direct

access.

1. **What does mean by VSAM file?** (page no-195)

**Ans:** A means of organizing records on a direct-access storage device that

Provides for both direct and sequential access.

- VSAM file is capable of handling both **fixed-length records** and **variable**

**length-records**

**Fixed length-records:** Records which require differing amount of storage

is called fixed length-records.

**Variable-length records:** The records which may change in over time is

called fixed-length records.

1. **What is random file?** (page no-200)

**Ans:** A file which records appear to be in particular order because the location of a record is determined by manipulations performed on the key of the record (hashing)

1. **What is hashing algorithm?** [page no-200(Para-04)]

**Ans:** The location or address at which a record is stored in a random file is

determined by manipulations performed on the record.The manipulation are

expressed as a **hashing algorithm**.

1. **What is index set?** (page no-197)

**Ans:** In a VSAM file, the index that contains the highest key in each

control area; also includes any higher-level indexes that may be required.

1. **What is sequence set?** (page no-197)

**Ans:** in a VISAM file the lowest level index is called the **sequence set.**

It contains…….

1. The highest key in each control interval within the control area &

2. The starting location of each control interval.

1. **What is full index files?** (page No-199)

**Ans:** An index in order by record key that contains the key and location of every

record in the file.

-The entry contains the record key and the address on the disk of the

**record.**

**N.B:** **The records** do not need to be stored in sequence and the may be

fixed variable in length.

**More information’s >>>**

**-**The indes is orderd by record key.

**-**A fully indexed file needs no overflow area, nor does it needs to reserve

free space to add records.

Creating a fully indexed file: (page no-199)

-Create fully indexed file may be in any order.

- As record is stored on the disk, an entry is made in the index to

record to **both in the key** and **the location of the record.**

**-**When all records have been stored, the index is sorted.

Updating a fully indexed file: (page no-199)

* A fully indexed file can be updated from **batch** or **online**
* It can access both **directly** and **sequentially**

Spaced sequential search*:*[page no-199(para-04)]

In this search, every nthentry in the index is examined. When an index key is found that is greater than the search key, a sequential search of the preceding (n-1) index entries is made.

Adding records to a fully indexed file: [page no-199(last para)]

- Records can be added to a fully indexed file simply by **extending**

**the file**

- Extending file is the another example of **piggyback file.**

1. **What is DASD?**

**Ans:** - means **Direct-Access Storage Device.**

- The most common example of DASD is **magnetic disc.**

1. **What is master index?**

**Ans:** In an ISAM file, the higest-level index.

-An optional index that contains the highest key in each track of the

cylinder index.

1. **What is direct access?**

**Ans:** The ability to retrive a specific record from a file without having to first

read all preceding records.