DATA ORGANIZATION

1. Data are subjected to processing activities such as calculating, comparing, sorting, classifying, and summarizing.
2. These activities organize, analyze, and manipulate data for converting them into information for end-users.
3. Storage is the information system activity in which data and information are retained in an organized manner for later use.
4. Data may be logically organized into characters, fields, records, files and databases.

NEEDS FOR INFORMATION

1. Information and decision-making
2. Information and communication
3. Information and knowledge
4. Information and productivity

DATA ARRANGEMENT AND ACCESS

1. Character- It consists of a single alphabetic, numeric or other symbol.

2. Field- A field consist of grouping of related character. A data field represents an attribute of some entity.

3. Record- Related fields of data are grouped to form a record. It represents a collection of attribute that describe an entity.

5. File- A group of related records is a data file or table.

6. Database- A database is an integrated collection of logically related data elements.

7. There are several ways the information in the files can be accessed. Based on these different techniques to access data, file can be organized in different ways-

MIS

1. Sequential File-

Records are stored in a pre-defined sequence, such as alphabetically. For example- to find the 100th record in a sequential file, all 99 records have to be searched. Sorting is done on a key field which may be numeric, character or alphanumeric.

ADVANTAGES

1. It is simple to organize and maintain.
2. Locating a record requires only the record key.
3. It is less expensive then direct access files as comparatively inexpensive storage medium may be used.
4. It is the most efficient and economical way to organize files if the number of records to be processed is large.

DISADVANTAGE

1. Transaction must be stored before processing.
2. Finding data is time consuming as for locating an N record, all preceding records from A to M are searched.

3. Data redundancy is high as same file may be required to sort on different key fields.
4. Direct access to any record is not possible.

2. Direct Access Files (Random access files)-

As any records can be accessed randomly without reading all preceding records. Key field is required which relates a record to its actual storage position in the file. They can be stored in non-consecutive location.

ADVANTAGES

1. Immediate access to any record is possible.
2. Immediate updating of several files as a result of a single transaction.
3. Records can also be processed sequentially, if needed.
4. Sorting is not necessary prior to processing.

5. Direct access is the fastest method of accessing records.

DISADVANTAGE

1. May be less efficient in the use of storage space than sequentially organized file.
2. File organization and programming is relatively complex.
3. Expensive hardware and software resources are required. Example-magnetic disk.

3. Indexed Sequential File-

It combines the positive aspect of both the direct and sequential access file. It is basically a sequential file organized serially on a key field.

ADVANTAGE

1. It provides faster access to records.
2. Sequential files can overcome their limitation of going through entire file for a record with the use of indexes.

DISADVANTAGE-

1. It requires more space to store the indexes.

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