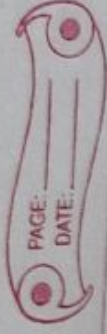


Computer Files and Database



* Computer File:-

A resource for recording data discretely in a computer storage device.

* What is file?:-

A file is an object on a computer that stores data, information, settings, or commands used with a computer program.

* Types of Files:-

1) Text File:-

A text file is a computer file that only contains text has no special formatting such as bold as text, images, etc.

Note:- Text files are also known as flat files or ASCII files

Extension of text file:- .txt file

2) Binary File:- Binary File is a file stored in binary format.

- Binary file is computer-readable but not human-readable.

Extension of binary file:- .bin

3) Image file:-

A file that contains graphics data;
for example, a GIF or PNG file.
See graphics formats.

A file that is copied to a hard disk, CD, DVD,
or BD bit for bit.

See disk image and ISO image.

4) Video file:- Is a type of file format for
storing digital video data on a computer
system.

File types:- MP3, ~~WAV~~, ~~WAAA~~, MP4, 3GP

5) Audio file:- Is a type of file format for
storing digital audio data on a computer
system.

File types:- MP3, WAV, WMA.

• Note:-

Eight Types of File Operation.

* Directory:-

A directory is a location for storing files on a computer.

- It's a file system cataloging structures that contains references to other files or directories.

* Databases:-

A database is an organized collection of data, so that it can be easily accessed and managed.

* What is relational database?

A relational database is a type of database that stores and provides access to data points that are related to one another.

* Data Storage media

Types of Storage Device:-

- 1) Primary storage:-
- 2) Secondary storage:-

1) Primary storage:- Refers to the main memory such as the random access memory (RAM)

Primary storages are connected through data buses to CPU.

Example:- RAM, Cache Memory

2) Secondary storage:-

Secondary storage are connected through data cables to CPU.

• Secondary storage device is a non-volatile.

Example:- CD, DVD, Hard Disk

* What is a storage medium? How many types of storage medium?

→ A storage medium is any technology including devices and material used to place, keep and retrieve electronic data.

There are 4 types of storage medium.

1) Semiconductor storage:-

- It is a digital electronic data storage device,
- It is used as computer memory.

Ex:- RAM and ROM

2) Magnetic Storage:-

Magnetic tape is a medium for magnetic recording made of thin (thin), narrow strip of plastic film.

Ex:- Floppy Disk, Hard Disk

3) Optical storage:-

Storage method that uses a laser to store and retrieve data from optical media.

Ex:- CD, DVD

4) Paper Data Storage:-

Use of paper as a data storage device.

Ex:- Punch card

* What is a DBMS?

→ It is a software for creating and managing databases.

- It is a very large, integrated collection of data.

* What is a Data Models?

→ planning the structure of databases is called data models.

- A data model helps to put the real world requirement into a design.

* There are 3 types of Data Models:-

- 1) Object Based Data Models
- 2) Physical Data Models
- 3) Record Based Data Models.

1) Object Based Data Models:-

The data is divided into multiple entities each of them have some defining characteristics.

Two types of object based data Models:-

1) Entity Relationship model:-

- It is used to real life scenarios as entities.
- The properties of these entities are their attributes in the ER diagram and their connections are shown in the form of relationship.

2) Object oriented Data Model:-

The scenarios are represented as objects.

The objects with similar functionalities are group together and linked to different other objects.

* What is primary key? Primary Key (Table level)
A primary key is either an existing table column or a column that is specifically generated by the database according to a defined sequence.

* Note:-

Relation :- Represented by diamond symbol. (\diamond)

* There are three types of cardinality of relationship.
1) One to one:-

A single row of first table associates with single row of second table.

2) one to Many:-

A single row of first table associates with more than one rows of second table.

3) Many to Many:-

Many rows of the first table associate with many rows of second table.

2)* What is a physical data model?
It is a representation of a data design as implemented, or intended to be implemented.

3) Record Based Model:-

There are 3 types of record based model

1) Hierarchical Data Model:-

- Supports one-to-many relationship.
- Single parent-child relationship difficult to navigate through the child.
- Based on the physical storage details.

2) Network Data Models:-

- Supports both one-to-many and many-to-many relationship.
- The relationship between most of the objects, hence easy to access compared to hierarchical model.
- Based on the physical storage details.

3) Relational Data Models:-

- Supports both one-to-many and many-to-many relationship.

- It provides SQL, which makes the access to the data simpler and quicker.
- Based on the logical data view.

* Normalization:-

A process of organizing the data in database to avoid data redundancy, insertion anomaly, update anomaly and deletion anomaly.

There are 4 types of Normalization.

1) 1NF:-

A relation is in 1NF if it contains an atomic value.

2) 2NF:-

A relation will be in 2NF if it is in 1NF and all non-key attribute are fully functional dependent on the primary key.

3) 3NF:-

A relation will be in 3NF if it is in 2NF and no transitive dependency exists.

4) BCNF:-

It is an advance version of 3NF that's why it is referred as 3.5NF.

BCNF is stricter than 3NF.

* There are 6 types of database

1) Operational Database:-

These databases store data relating to the operations of the enterprise.

2) End-User Database:-

- Databases are shared by users.
- Contain information meant for use by the end-users.

3) Centralized Database:-

- Database store the entire information and application programs at a central computing facility.
- Users at different location access database.

4) Distributed Database:-

- Data is distributed at various sites.
- The client server technology is most popular for managing distributed database.

5) Personal Database:-

- Maintained on personal computer.
- Contain information meant for limited number of users.

6) Commercial Database:-

Access to provided to users as a commercial venture is called a commercial or external database.

Databases are subjected specific and access to these Database is sold as a paid service to its user.