

DBMS

Database Management System

→ The physical and logical collection of data so that the storage and performance can be done easily at the place where it is termed as Database Management System.

Conclusion = Management of data.

OPERATIONS THAT CAN BE PERFORMED ARE

- i) Insertion
- ii) Retrieval
- iii) Searching
- iv) Deleting
- v) Updating

Ex = Bank's database, School database, Retail Sector and many more.

→ Note = i) Actors of data = The people who always works on database management system (dbms) of the company is termed as actors of data.

ii) Cardinality = The collection of tuples or rows that are linked with each other is termed as cardinality.

D BA

Database Administrators

→ The person who works on the management of the data. (Such as (Create Users and controls database)).

Management Includes =

i) Defining conceptual Schema.

↳ defining, designing Creation

ii) Physical database design.

↳ Memory

Performing Operation

iii) Security and Integrity checks

↳ Authentication

↳ Authorization

iv) Backup and Recovery Strategies (Retain)

v) Granting Access to the users.

↳ Granting Access ⇒ Giving Authority

↳ Revoking Access ⇒ Taking the Access Back

TYPES OF DATABASE ADMINISTRATORS =

i) Database Architect = The person who designs the schema of the database.

ii) Database Developers = They create database administrator who works on creation of schema.

- Provides physical, logical and technical support to the database.

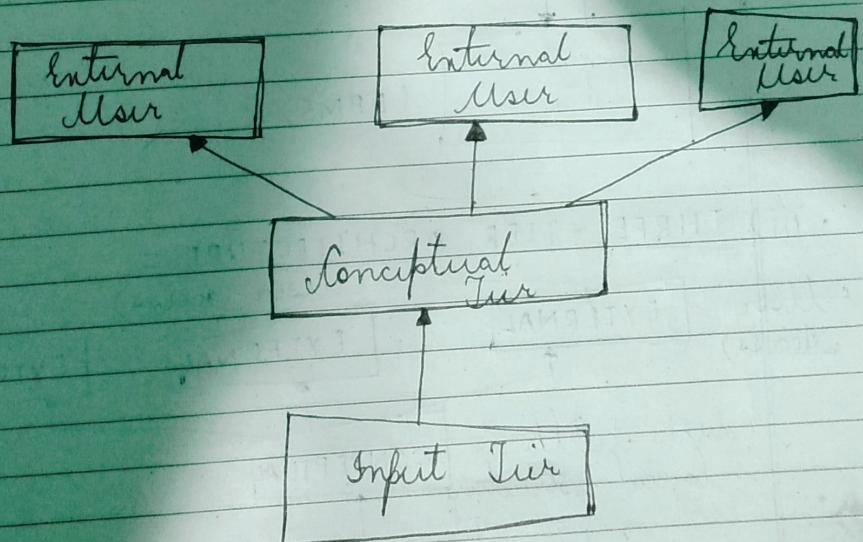
~~Note~~ = Physical Support means allocating memory.

iii) Database Associate = Provides authentication and authorization (Security), Granting and Revoking access in the database.

iv) Database Warehouse = Deals with memory and storage of database.

*

THREE - TIER IDENTIFICATION

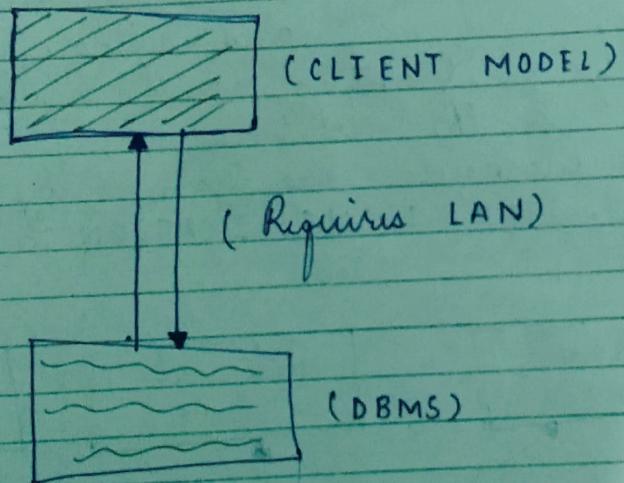


TIME - SPACE TRADE OFF =

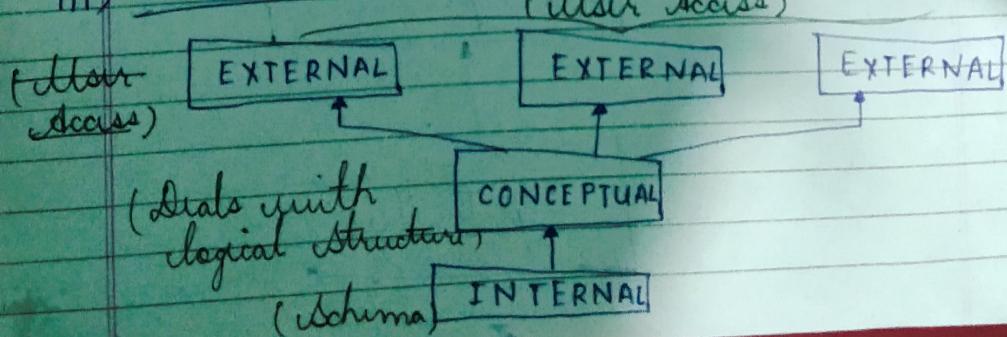
i) SINGLE - TIER =

→ Access data from database.
 (As it is specified by its name only single tier which means, single access process)

ii) TWO - TIER =



iii) THREE - TIER ARCHITECTURE =



- The Input layer deals with the physical schema of the database. As how many rows, attributes, columns must be there.
 - The conceptual layer deals with logical schema (logical structure).
 - External Structure is accessible to the users. (What they can view and access)
- ~~Note = The users are not allowed to access each and every conceptual schema as the constraints are applied in prior levels.~~

ADVANTAGES =

- Used in Industries for storing and linking the data in the database.
- ~~Providing Security~~
- Data dependency (If changes are done in table or copy attribute then all levels and information are affected.)

DATA INDEPENDENCE =

- If there are changes in the schema of the table then till will not be affected.

RELATIONAL MODEL

→ Data is represented in tables.

- i) Order is Not Important
- ii) In form of Tuples.
- iii) Unique values.

Conclusion - In Relational Model

i) Data is represented in tables.

ii) Order is not Important.

iii) Stored in form of Tuples (Unique values.)

* CARDIANLITY , DEGREE =

Employee Table		
E_Id	E_Name	E_Salary
1	Anu	100000
2		,
3		,
4		,
5		,
6		,
7		,
8	Anuj	200000
9		

Let's suppose we are having an

Employee table having 3 attributes
 (rows) E-ID, E-Name, E-Salary
 and 10 records in each row.

Then,

Degree = 3 (because 3 attributes)
 Cardinality = 10 (because 10 records)

Conclusion =

Degree is the number of attributes
 is to be inserted
 (Number of columns in which value)

Cardinality is the total number of
 records.
 (Values Inserted / Columns Impactive of
 rows).

#. KEYS =
 → Keys are helpful in logical representation
 of attributes.

There are various kind of keys =

i) PRIMARY KEY =

→ UNIQUE VALUE + NOT NULL.

→ Only one in a table.

ii) FOREIGN KEY =

→ The primary key of one table useful in linking that particular table to another table.

In short,

Primary key of one table acts as foreign key for another table.

iii) SUPER KEY =

→ Combination or set of uniquely identified attributes.

Ex = Employee Table

E_Id	E_Name	E_Salary

Conditions of set of uniquely identified attributes can =

E_Id + E_Name ;

v) COMPOSITE KEY = Two or more attributes as a key is known as composite key.

E-Id + E-Salary,
E-Id + E-Name + E-Salary.

(iv) CANDIDATE KEY =

→ keys other than primary key but is having capability to become primary key.

Employee Table

Employee Table		
E-Id	E-passport	E-Name
Ex =		

∴ Id of each employee is also unique and not null and the same with passport.

hence, If I'd become primary key then passport is having also having capability to become primary key. Hence, E-passport will act as candidate key. (like - Visa condition is

) ALTERNATE KEY = keys other than primary
and candidate keys
is termed as alternate key
(also true.)

