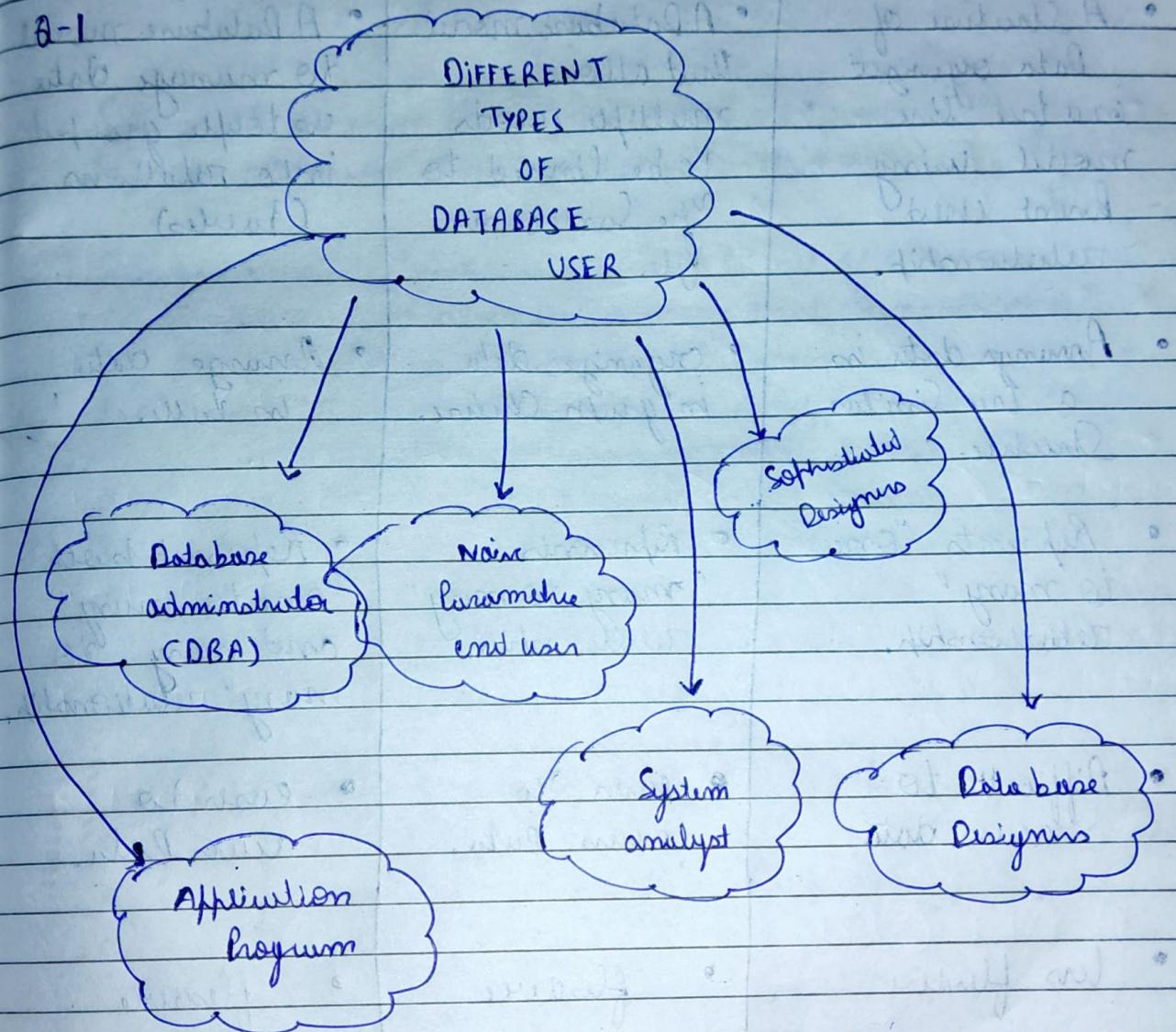


AMAN JAIN
MCA-2021-23

DBMS ASSIGNMENT

Q-1



- Database administration (DBA) - DBA is person / team who defines the Schema and also controls the 3 level of Database, The DBA will then create a new account id and password for the user if he/she needs to access the Database.

- **Naïve End users** - naïve end users are the unsophisticated who don't have any DBMS knowledge but they frequently use the database application in their daily life to get the desired results. for example: Railway ticket booking users are naïve users.
- **System Analyst** :- System analyst is a user who analyses the requirements of parametric end users. They check whether all the requirements of end users are satisfied.
- **Sophisticated Users** : Sophisticated users can be engineers, scientists, business analysts who are familiar with the database. They can design their own database application according to their requirements. They don't write the program code but they instruct the database by writing SQL queries directly through the query browser.
- **Database Designers** : They are the users who design the structure of database when includes tables, indexes, views, constraints, triggers, stored procedures. He/She controls what data must be stored and how the data items to be related.
- **Application Program** : They are the backend programmers who writes the code for the application programs, they are the computer professionals, these programs could be written in programming languages such as VB, C etc.

Q2

Hierarchical

- A Structure of Data organized in a tree like model using parent child relationship.
- Arranges data in a tree like structure.
- Represents "one to many" relationship.
- Difficult to access data.
- less flexible

Network

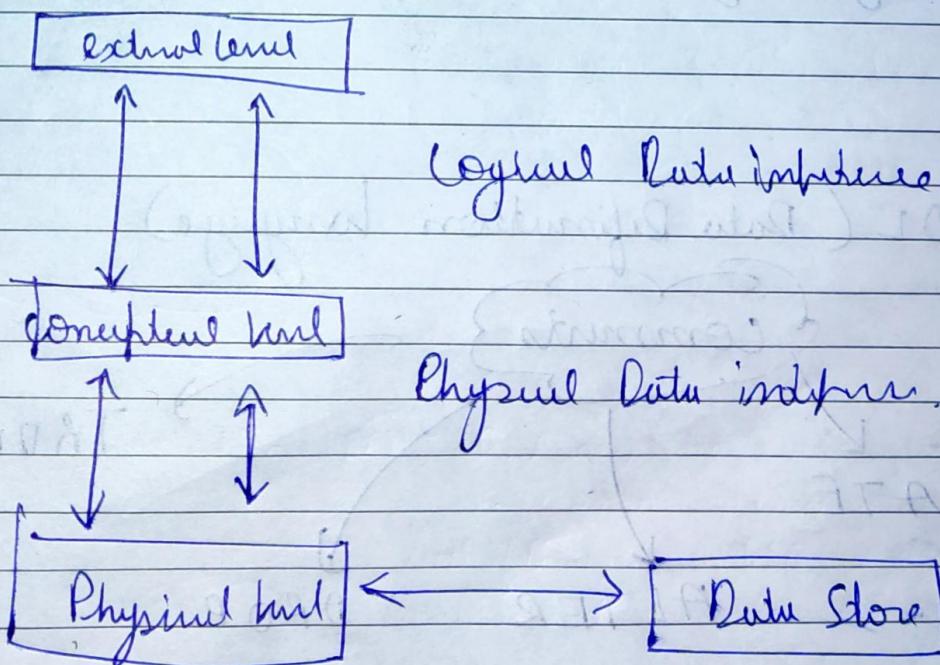
- A Database model that allows multiple records to be linked to the same owner file.
- Organizes data in graph structure.
- Represents "many to many" relationship.
- easier to access data.
- flexible

Relational

- A Database model to manage data as couple grouped into relations (tables)
- Arrange data in table.
- Represent both "one to many" and many to many relationships.
- easier to access data.
- flexible

Q-3

- 1) Data independence - Data independence is defined as a property of DBMS that help you to change the Database Schema at one level of a Database System without requiring to change the Schema at the most higher level. Data independence help you to keep data separate from all programs that make use of it.
- 2) Database views :- A database view is a subset of a database and is based on a query that runs on one or more database table. Database views are stored in the database as named queries and can be used to save frequently used, complex queries.
- 3.) 3-tier Architecture :- DBMS 3-tier architecture divides the complete system into three inter-related but independent modules.



Q-4

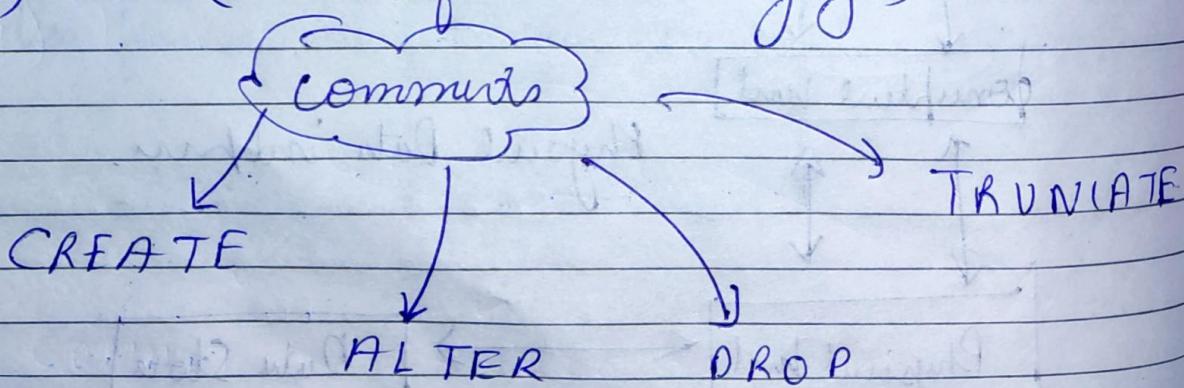
CHARACTERISTICS

OF
DBMS

- The Database management System has to support ACID (atomicity, consistency, isolation, durability) properties.
- The Database management System allows so many users to access databases at the same time.
- Backup and Recovery are the two main methods which allows user to protect the data from damage or loss.
- It also provides multiple views for different users in single organization.

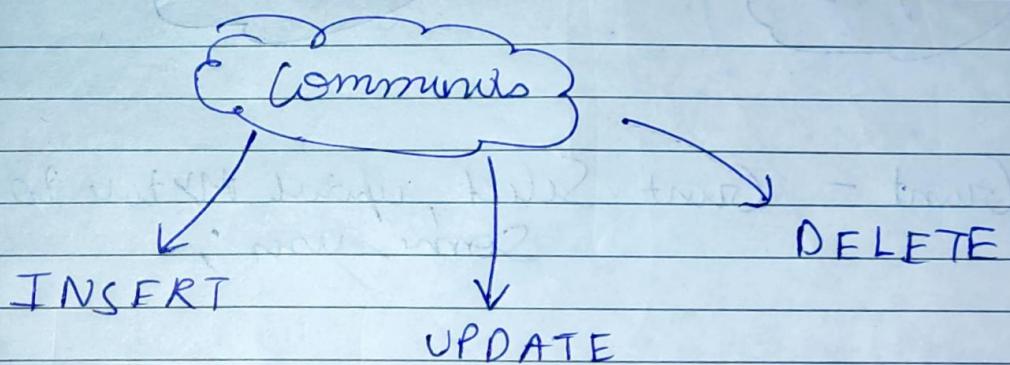
Q-5

1.) DDL (Data Definition Language)



- CREATE - Create table Table Name (Column name Data type [..])
- DROP - DROP TABLE Table_name;
- ALTER - ALTER TABLE Table-name ADD column_name (COLUMN - Dfn);
- TRUNCATE - TRUNCATE TABLE EMPLOYEE;

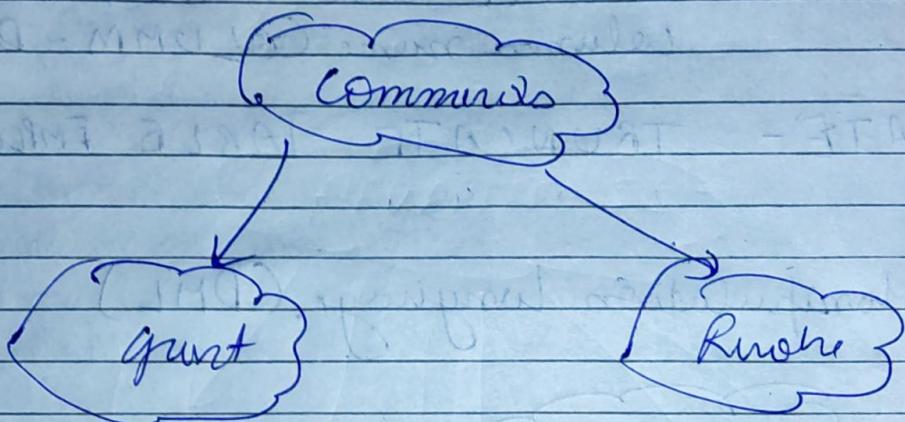
2.) Data Manipulation Language (DML)



- INSERT - INSERT INTO TABLE_NAME
(col1, col2, col3... colN)
VALUES (val1, val2... valN)
- UPDATE - UPDATE Table_name SET [column_name
1, column
- num N] [where
condition]

- DELETE - DELETE FROM table name [where condition].

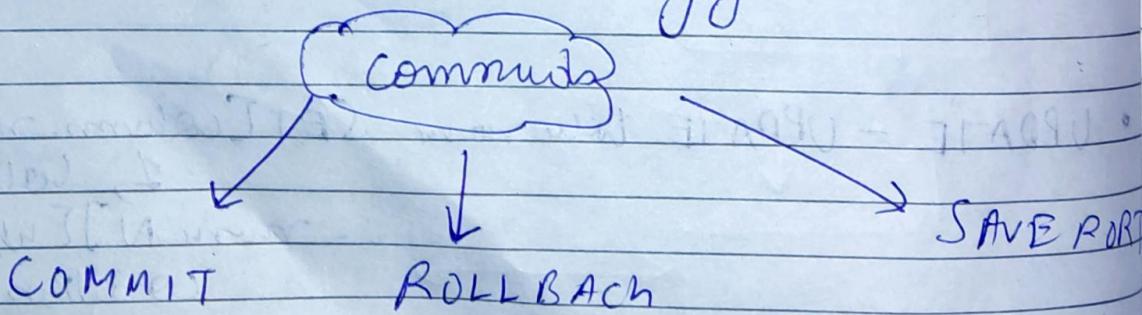
3) Data control language : (DCL)



- Grant - Grant Select, update, INSERT, DELETE, UPDATE, etc.

- Revoke - Revoke SELECT, UPDATE, etc.

4) Transaction control language



- COMMIT - Commit
- Rollback - ROLLBACK
- Snapshot - SAVEPOINT - Name,

Q-6

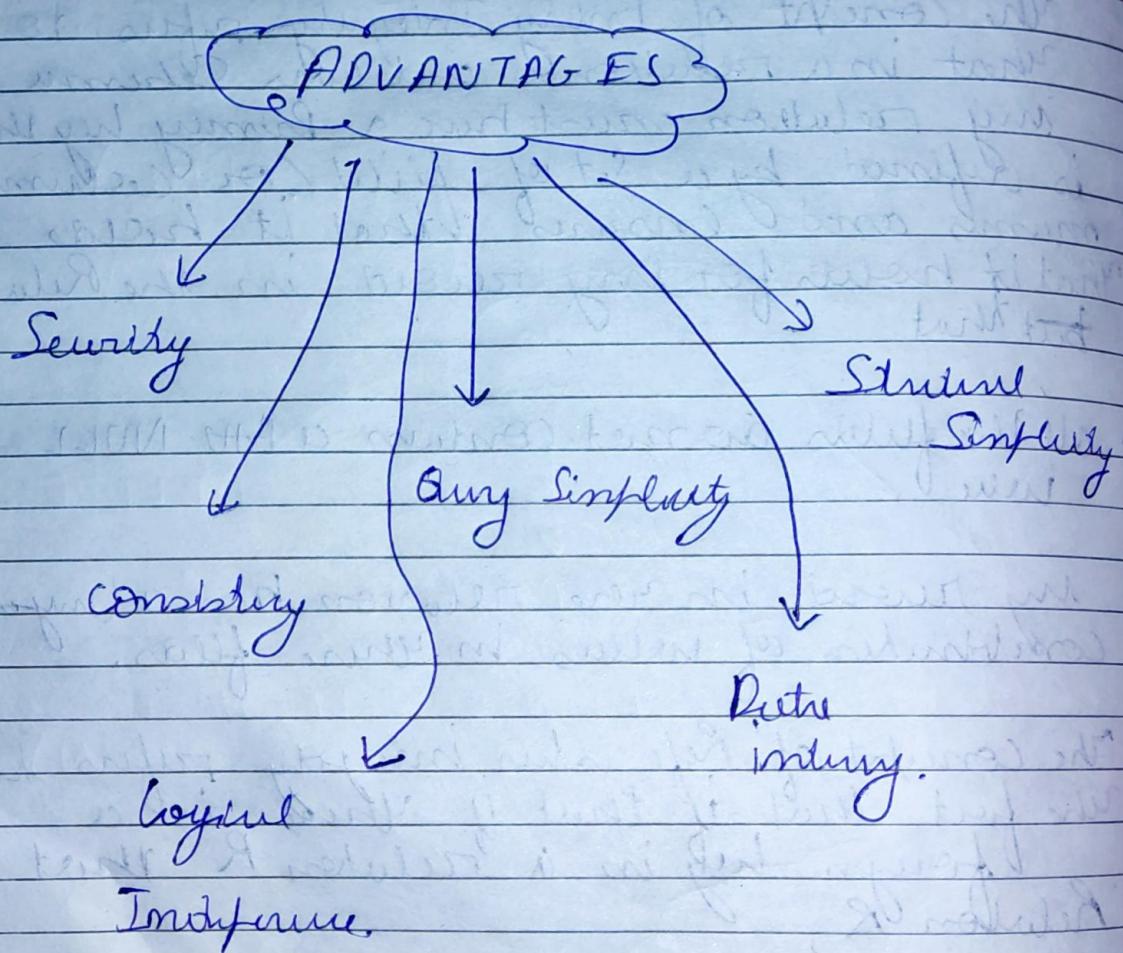
The concept of Entity Integrity refers to what in a relational database. Scenario my relation must have a Primary key that is defined by a set of field (or column) names and ensures that it holds true if holds for my record in the Relation but that

- All the fields do not contain a ANY NULL value.
- My record in the relation has a unique combination of values in their fields.

The concept of Referential integrity refers to the fact that if there is a foreign key in a relation R that Relation R,

Q- 7

VIEWS - Views in SQL are kind of virtual tables.
A View also has rows and columns as
they are in a real table in the
Database, we can create or view by selecting
fields from one or more tables present
in the database.



Relationships

Performance

Update restrictions.

b-8

Strong Entity

- Always has a primary key.
- It is not dependent on any other entity.
- Represented by a single underline.

Weak entity

- Weak entity has a primary discriminatory key.
- Depends on Strong entity.
- It is represented by a double underline.

Total Participation

- Such entity is involved in the relationship.

None

- Represented by single lines.

Partial Participation

- Not all entities are involved in the relationship.

- Partial is represented by double lines.

- **Subquery** - A Subquery is a combination of columns that uniquely identifies any row with a relational database management system (RDBMS) level.
- **Correlation** - it is a query by of type that returns data that is in another table.