Tutorial Sheet 2

Q 1. What are the different types of languages that are available in the DBMS?

Ans: Basically, there are 3 types of languages in the DBMS as mentioned below:

DDL: DDL is Data Definition Language which is used to define the database and schema structure by using some set of SQL Queries like CREATE, ALTER, TRUNCATE, DROP and RENAME.

DML: DML is Data Manipulation Language which is used to do some manipulations in the database like Insertion, Deletion, etc. by using some set of SQL Queries like SELECT, INSERT, DELETE and UPDATE.

DCL: DCL is Data Control Language which is used to control the access of the users inside the database by using some set of SQL Queries like GRANT and REVOKE.

TCL is short name of Transaction Control Language which deals with a transaction within a database.

COMMIT - commits a Transaction

ROLLBACK - rollback a transaction in case of any error occurs

SAVEPOINT - to rollback the transaction making points within groups

SET TRANSACTION - specify characteristics of the transaction

Q 2) Explain the concepts of a Primary key and Foreign Key.

Ans: Primary Key is used to uniquely identify the records in a database table while Foreign Key is mainly used to link two or more tables together as this is a particular field in one of the database tables which are the primary key of some other table.

Example: There are 2 tables – Employee and Department and both have one common field/column as ‘ID’ where ID is the primary key of the Employee table while this is the foreign key for the Department table.

Q 3) What are the main differences between Primary key and Unique Key?

Ans: Given below are few differences:

- The main difference between the Primary key and Unique key is that the Primary key can never have a null value while the Unique key may consist of null value.
- In each table, there can be only one primary key while there can be more than one unique key in a table.

Q 4) What is the concept of sub-query in terms of SQL?

Ans: Sub-query is basically the query which is included inside some other query and can also be called as an inner query which is found inside the outer query.

Q 5) What is the use of DROP command and what are the differences between DROP, TRUNCATE and DELETE commands?

Ans: DROP command is a DDL command which is used to drop/delete the existing table, database, index or view from the database.

The major difference between DROP, TRUNCATE and DELETE commands are:

DROP and TRUNCATE commands are the DDL Commands which are used to delete tables from the database and once the table gets deleted, all the privileges and indexes that are related to the table also get deleted. These 2 operations cannot be rolled back and so should be used with great care.

DELETE Command, on the other hand, is a DML Command which is also used to delete rows from the table, and this can be rolled back.

Note: It is recommended to use 'Where' clause along with the DELETE command else the complete table will get deleted from the database.

Q 6) Explain Entity, Entity Type, and Entity Set in DBMS.

Ans: Entity is an object, place or thing which has its independent existence in the real world and about which data can be stored in a database. Eg: any person, book, etc.

Entity Type is a collection of the entities which have the same attributes. Eg: STUDENT table contains rows in which each row is an entity holding attributes like name, age , and id of the students, hence STUDENT is an Entity Type which holds the entities having same attributes.

Entity Set is a collection of the entities of the same type. Eg: A collection of the employees of a firm.

Q 7) Difference between strong and weak entity set.
Q 8) What are Mapping constraints in ER Model?
Q 9) Difference Between Generalization and Specialization.
Q 10) Define Aggregation.

Q 11) What integrity rules exist in the DBMS?

Ans: There are 2 major integrity rules that exist in the DBMS.

They are:
Entity Integrity: This states a very important rule that value of a Primary key can never have a NULL value.
Referential Integrity: This rule is related to the Foreign key which states that either the value of a Foreign key is a NULL value or it should be the primary key of any other relation.

Q 12) What is E-R model in the DBMS?

Ans: E-R model is known as an Entity-Relationship model in the DBMS which is based on the concept of the Entities and the relationship that exists among these entities.