PRACTICAL NO – 2

AIM: Explain Components of SQL.

The main components of sql are :

1.Data Definition Language

2.Data Manipulation Language

3.Data Control Language

Explain Components of SQL.

1. Query Language
2. Transaction Control Language

❖ DDL (Data Definition Language) :

- **Data Definition Language is used to define the database structure or schema. DDL is also used to specify additional properties of the data. The storage structure and access methods used by the database system by a set of statements in a special type of DDL called a data storage and definition language. These statements define the implementation details of the database schema, which are usually hidden from the users. The data values stored in the database must satisfy certain consistency constraints.**

- **Domain Constraints : A domain of possible values must be associated with every attribute (for example, integer types, character types, date/time types). Declaring an attribute to be of a particular domain acts as the constraints on the values that it can take.**

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1. **Referential Integrity :** There are cases where we wish to ensure that a value appears in one relation for a given set of attributes also appear in a certain set

of attributes in another relation i.e. Referential Integrity. For example, the department listed for each course must be one that actually exists.

2. **Assertions :** An assertion is any condition that the database must always satisfy. Domain constraints and Integrity constraints are special form of assertions.
3. **Authorization :** We may want to differentiate among the users as far as the type of access they are permitted on various data values in database. These differentiation are expressed in terms of Authorization. The most common being :
   read authorization – which allows reading but not modification of data ;
   insert authorization – which allow insertion of new data but not modification of existing data
   update authorization – which allows modification, but not deletion.

❖ DML (Data Manipulation Language) :

DML statements are used for managing data with in schema objects.
DML are of two types –

1. Procedural DMLs : require a user to specify what data are needed and how to get those data.

2. Declerative DMLs (also referred as Non-procedural DMLs) : require a user to specify what data are needed without specifying how to get those data. Declarative DMLs are usually easier to learn and use than procedural DMLs. However, since a user does not have to specify how to get the data, the database system has to figure out an efficient means of accessing data.

❖ DCL (Data Control Language) :

- A Data Control Language is a syntax similar to a computer programming language used to control access to data stored in a database (Authorization). In particular, it is a component of corrupted. Used correctly, the DCL provides security for your database; the amount of protection depends on the implementation. If your implementation doesn't provide sufficient protection, you must add that protection to your application program.

❖ DML(Data Manipulation Language):

DML is short name of Data Manipulation Language which deals with data manipulation and includes most common SQL statements such SELECT, INSERT, UPDATE, DELETE, etc., and it is used to store, modify, retrieve, delete and update data in a database.

- SELECT - retrieve data from a database
- INSERT - insert data into a table
- UPDATE - updates existing data within a table
- DELETE - Delete all records from a database table
- MERGE - UPSERT operation (insert or update)
- CALL - call a PL/SQL or Java subprogram
- EXPLAIN PLAN - interpretation of the data access path
- LOCK TABLE - concurrency Control