EXPERIMENT NO. 3

AIM :- Create and populate database using Data Definition Language (DDL).Apply Integrity Constraints for the specified system.
OBJECTIVES :- To understand DDL commands and constraints.

THEORY :-

Data definition language (DDL) statements are used to define the database structure or schema.

A DDL has a pre-defined syntax for describing data. For example, to build a new table using SQL syntax CREATE command is used, followed by parameters for the table name and column definitions. The DDL can also define the name of each column and the associated data type.

Once a table is created, it can be modified using the ALTER command. If the table is no longer needed, the DROP command will delete the table.

1) **Create command**:-To create objects in the database and create a table in the database, a DBA must have certain information in hand such as the table name, column name, column data types, and column sizes. All this information can be modified later using DDL commands.

   Syntax-

   CREATE TABLE tablename

   ({ column name column datatype [column_constraint] ...

   {column name column datatype [DEFAULT expr] [column_constraint] .)

2) **Alter command**

   The ALTER statement is used to add, modify or delete columns in existing table.

   a) Adding column to table :

   Syntax- alter table table_name add column_name datatype;

   e.g. alter table student add rnobile_no int;

   b) Dropping the column :

   With the help of this cluase we can drop the existing column from table.

   Syntax- alter table table_name drop column _name datatype;

   e.g. alter table student drop last_name

   c) Rename column:

   Alter rename statement is used to rename the column.

   Syntax- alter table table_name change column old_name new_name datatype

   d) Modify column

   Alter modify statement is used to modify the column.

   Syntax- alter table table_name modify column old_name datatype

2) Rename :-

It is used to rename a database object.

Syntax- RENAME TABLE old_table TO new_table;

3) Drop :-

It is used to delete the database object.

Syntax- Drop table table_name.

4) Truncate :-

It is allows to delete all data in a table.It empties a table completely.

Syntax- Truncate table table_name

Constraints :-

Constraints are basically used to maintain the integrity (data correctness) of data. Constraints are used to specify rules for the data in the table. If there is any violation between the constraint and the data action, the action is aborted by the constraint. Constraints can be specified when the table is created.

Syntax:

create table table_name (

Column_name1 data_type(size) constraint_name, Column_name2 data_type(size) constraint_name,

....);

Following are some constraints available with SQL

1. NOT NULL - Indicates that a column cannot store NULL value.
2. DOMAIN CONSTRAINTS :- specifies that what set of values an attribute can take. Value of each attribute X must be an atomic value from the domain of X.
   The data type associated with domains include integer, character, string, date, time, currency etc. An attribute value must be available in the corresponding domain. Consider the example below –

SID	Name	Course	Age	
8001	Ankit	IT	19	Not allowed, Because age is an integer attribute
8002	Srishti	COMP	18	
8003	Somvir	IT	22	
8004	Sourabh	COMP	A	

3.UNIQUE - Ensures that each row for a column must have a unique value.

4. PRIMARY KEY- The PRIMARY KEY constraint uniquely identifies each record in a database table. Primary keys must contain unique values. A primary key column cannot contain NULL values. Most tables should have a primary key, and each table can have only ONE primary key. Primary key can be the combinations of one or more column.

5. FOREIGN KEY- Ensure the referential integrity of the data in one table to match values in another table. A foreign key is a key used to link two tables together. This is sometimes called a referencing key. A foreign key is generally a primary key from one table that appears as a field in another where the first table has a relationship to the second.

6. CHECK - It is used to limit the value range that can be placed in a column
7. Default: - Sets a default value for a column when no value is specified

CONCLUSION: - Hence DDL commands are studied and constraints are also studied.