LAB 2 - SQL

SQL statements are divided into two categories:

Data Definition Language(DDL) - DDL statements are used to build and modify the structure of tables(relations) and other objects in the database.

Data Manipulation Language (DML) - DML statements are used to work with the data

What is a Database Object?

A database object in a database management system is any defined object in a database that is used to store or reference data.

Keywords in DDL:

1. **CREATE**: Used to create a new table, a view of a table, or other object in the database.
    a. Example: CREATE TABLE table_name (column1 datatype, column2 datatype, ...);

2. **ALTER**: Used to modify an existing database object, such as a table.
    a. Example: ALTER TABLE table_name ADD column_name datatype;

3. **DROP**: Used to delete an existing table, view, index, or other objects in the database.
    a. Example: DROP TABLE table_name;

4. **TRUNCATE:** Used to delete all data inside a table without deleting the table itself. This means that the table structure, attributes, and indexes will be intact.
    a. Example: TRUNCATE TABLE table_name;

5. **COMMENT**: Used to add comments to the data dictionary.
    a. Example: COMMENT ON COLUMN table_name.column_name IS 'Comment';

6. **RENAME:** Used to rename an existing database object.
    a. Example: RENAME TABLE old_table_name TO new_table_name;

Table (Relation)

- Tables are database objects that contain all the data
- Data in tables is logically organized in a row-and-column format (think of a spreadsheet structure)
- Each row in a table represents a unique record
- Each column in a table represents a field (in the record)

TASKS(All the tasks you have to do are in RED)

1. Create a new database called Students
2. Create a table named STUDENT with attributes STUDENT_NO (data type integer) and STUDENT_NAME (data type character)
3. Display the table using DESC Table_Name (DO THIS EVERYTIME A NEW TABLE IS CREATED)

Eg. **CREATE TABLE** COURSE(COURSE_CODE INT(10), COURSE_DESCRIPTION VARCHAR(50));

This creates a table called course with columns course code of integer datatype(length of 10) and course description of datatype varchar(basically strings but in this case of only 50 characters)

4. Create a new table based on the selected columns:
    a. Create a table called Student_New that contains the only the student_no from the first table

Eg . **CREATE TABLE** COURSE_NEW **AS SELECT** COURSE_DESCRIPTION **FROM** COURSE;

This creates a table called Course_new which only contains the course_description from the original table

5. CREATING a table from an existing table
    a. Create a table called STUDENT_NEW2 which is the same as STUDENT

Eg. **CREATE TABLE** COURSE_NEW **LIKE** COURSE;

This creates as table called Course_new exactly the same as Course