

## SQL Job Preparation Assignment 2

### 1. In SQL, what are DRL, DDL, DML, TCL, and DCL? Explain each with a single example?

Here are five types of widely used SQL queries.

- Data Retrieval Language (DRL)
  - Data Definition Language (DDL)
  - Data Manipulation Language (DML)
  - Transaction Control Language (TCL)
  - Data Control Language (DCL)
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- **Data Retrieval Language (DRL)**
    - It is a set commands which are used to retrieve data from database server.
    - It manipulates the data in database for display purpose like aggregate function.
    - In DRL, for accessing the data it uses the DML command that is SELECT.
    - The SELECT command allows database users to retrieve the specific information they desire from an operational database.
      - *SELECT \* FROM <tablename>*  
*WHERE <condition>;*
  - **Data Definition Language (DDL)**
    - DDL or Data Definition Language consists of the SQL commands that can be used to define the database schema.
    - DDL is a set of SQL commands used to create, modify, and delete database structures but not data. These commands are normally not used by a general user, who should be accessing the database via an application.

Eg:

- **CREATE :**
  - used to create the database or its objects (like table, index, function, views, store procedure, and triggers).
    - *CREATE DATABASE database\_name;*
    - *CREATE TABLE table\_name;*
- **DROP :**
  - DROP is used to delete a whole database or just a table
    - *DROP DATABASE database\_name;*
    - *DROP TABLE table\_name;*

- TRUNCATE :
  - TRUNCATE is used to quickly removes all data from a table
    - *TRUNCATE DATABASE database\_name;*
    - *TRUNCATE TABLE table\_name;*
- ALTER:
  - ALTER TABLE is used to add, delete/drop or modify columns in the existing table.
    - *ALTER TABLE table\_name  
ADD (Columnname\_1 datatype,  
Columnname\_2 datatype);*
    - *ALTER TABLE table\_name  
DROP COLUMN column\_name;*
    - *ALTER TABLE table\_name  
MODIFY column\_name column\_type*
- COMMENT:

Comments can be written in the following three formats:

- Single line comments:- Comments starting and ending in a single line are considered as single line comments. Line starting with ‘–’ is a comment and will not be executed.
  - *--this is singline comment*
- Multi line comments: - Comments starting in one line and ending in different line are considered as multi line comments. Line starting with ‘/\*’ is considered as starting point of comment and are terminated when ‘\*/’ is encountered.
  - */\*this is  
Multi line comment\*/*
- In line comments: In line comments are an extension of multi line comments, comments can be stated in between the statements and are enclosed in between ‘/\*’ and ‘\*/’.
  - *Select \* from /\* customers;*

## ● Data Manipulation Language (DML)

- The SQL commands that deals with the manipulation of data present in the database belong to DML or Data Manipulation Language and this includes most of the SQL statements.
  - INSERT : It is used to insert data into a table.
    - *INSERT INTO table\_name VALUES (value1, value2, value3,...)*
  - UPDATE: It is used to update existing data within a table.
    - *UPDATE table\_name SET column1 = value1, column2 = value2,...*

*WHERE condition;*

- DELETE : It is used to delete records from a database table.
  - *DELETE FROM table\_name WHERE condition;*
- CALL: Call a PL/SQL or JAVA subprogram.
- EXPLAIN PLAN: It describes the access path to data.

- **Transaction Control Language (TCL)**

- Transaction control language or TCL commands deal with the transaction within the database.
  - COMMIT: This command is used to save all the transactions to the database.
    - *Commit;*
  - ROLLBACK: Rollback command allows you to undo transactions that have not already been saved to the database.
    - *Rollback;*
  - SAVEPOINT: This command helps you to sets a savepoint within a transaction.
    - *Savepoint savepoint\_name;*

- **Data Control Language (DCL)**

- DCL includes commands such as GRANT and REVOKE which mainly deal with the rights, permissions, and other controls of the database system.

List of DCL commands:

- GRANT: This command gives users access privileges to the database.
- REVOKE: This command withdraws the user's access privileges given by using the GRANT command

## 2. For example, explain the criteria for column Alias.

Aliases are the temporary names given to table or column for the purpose of a particular SQL query. It is used when name of column or table is used other than their original names, but the modified name is only temporary.

- Aliases are created to make table or column names more readable.
- The renaming is just a temporary change and table name does not change in the original database.
- Aliases are useful when table or column names are big or not very readable.
- These are preferred when there are more than one table involved in a query.

*Select \* from employee as emp;*

3. Replace the hardcoded value in the ENAME column with a dynamic value: **SELECT EMPNO, ENAME, SAL FROM EMP WHERE ENAME='scott';**

*SELECT EMPNO, ENAME, SALARY AS SAL FROM EMP WHERE ENAME = &ENAME*

4. Create a query to **DISPLAY THE EMPNO, ENAME, WITH A SALARY OVER 3000 AND ENAME IS THE KING**

Modified query

*SELECT DISTINCT  
EMPNO,  
ENAME,  
SALARY  
FROM EMP  
WHERE SALARY > 3000  
AND ENAME = 'KING';*

5. Create a query to **DISPLAY THE EMPNO, ENAME, SAL WITHOUT A SALARY OF \$3000**

*SELECT DISTINCT  
EMPNO,  
ENAME,  
SALARY as SAL  
FROM EMP;*