Task: 03

What is SQL?

SQL stands for Structure Query Language. It’s called language because users communicate with the database to store or fetch data. In SQL data is in the form of tables or relations. That is why it’s also called Relational Database.

SQL is a domain-specific language. It means that we can only use this language on structured data which is organized in the form of tables.

SQL is a declarative language. To put it simply, there are two types: Declarative and Procedural.

Declarative means you mention, what to do. But never mention How to do it?

For Example–

**In C/C++ language,** if we need to create a list of unknown numbers and then find out the total length of the list. We will first explain What to do? By creating a list with unknown numbers. Afterward, we make a function explaining, how to do it. By using for loop which tells the machine how to find the length.

**But in the case of SQL, we only tell What to do?**

Suppose you need to fetch the number of people living in Lahore. What to do?

Write SQL statement:

SELECT \*

WHERE Address == Lahore

Output: This will give us our desired output. But how this process happens depends on DB.

In order to deal with structured data in SQL. We use SQL Commands. Which I will discuss below now.

What is DDL?

DDL stands for Data Definition Language. DDL commands deal with schemes in SQL. Schemes mean structures such as **Tables** in SQL. Where we store our data in SQL.

Below are DDL commands in SQL:

* **Create**: Use to create tables in SQL
* **Alter:** If we need to add/delete columns in Tables or change data types of the table we use this command.
* **Drop:** Use to delete a table.
* **Truncate:** Use to remove data inside the tables/structure.
* **Rename:** Use to rename a table.

What is DML?

DML stands for Data Manipulation Language. It’s the next step after DML means without doing DDL. You can not do DML. Because in order to manipulate data you need a structure that is created using DDL commands.

In DML we manipulate data by inserting, fetching, or deleting data from a table using below commands:

* **Select:**  Use to select data.
* **Insert:** Use to insert data.
* **Update**: Use to update our data.
* **Delete:** Use to delete data in tables.

What is DCL?

DCL stands for Data Control Language. As the name shows it tells us who has control over data or who is authorized or un-authorize to alter data in any way or delete it.

We have several users who use company data. But DCL decides who to give full access to data or who can only add/select data and many more. As we can give all privileges to everyone to manipulate data as he wishes.

* **Grant:** Use to give access/privileges to someone.
* **Revoke:** Use to revoke access/privileges to someone.