Data Engineer FellowShip with Bytewise Limited.

Meer Danish 21/March/2023



**2nd Week**

**Task # 1**

**Note:download and attach Northwind database.**

**Task # 2**

**Note : Setup Git And Fork Repositry.**

**Task # 3**

What Is SQL?

**SQL:**

SQL (Structured Query Language) is a programming language used to manage and manipulate data stored in relational databases. SQL is used to create, modify, and retrieve data from databases.

**Here is a simple example of SQL query:**

SELECT \* FROM customers WHERE age > 25;

This query selects all the columns from the customers table where the age is greater than 25.

The \* is a wildcard that selects all columns, and WHERE is a clause that filters the results based on a specified condition.

SQL is widely used in various industries such as finance, healthcare, education,and e-commerce to manage and organize data efficiently.

What is DDL?

**DDL:**

DDL (Data Definition Language) is a set of SQL commands used to define and manipulate the structure of the database schema. DDL commands are used to create, modify, and delete database objects such as tables, indexes, and constraints. Here is an example of DDL statements:

CREATE TABLE statement:

The CREATE TABLE statement is used to create a new table in a database. The following example creates a table named customers with three columns: id, name, and email.

CREATE TABLE customers (

id INT PRIMARY KEY,

name VARCHAR(50) NOT NULL,

email VARCHAR(100) UNIQUE

);

ALTER TABLE statement:

The ALTER TABLE statement is used to modify the structure of an existing table. The following example adds a new column named phone to the customers table.

ALTER TABLE customers ADD COLUMN phone VARCHAR(20);

DROP TABLE statement:

The DROP TABLE statement is used to delete an existing table from the database. The following example drops the customers table.

DROP TABLE customers;

These are some of the commonly used DDL statements in SQL.

What is DML?

**DML:**

DML stands for Data Manipulation Language, which is a subset of SQL (Structured Query Language) used to manipulate data within a database. DML commands are used to insert, update, delete, and retrieve data from a database.

Here is an example of DML commands in SQL:

INSERT:

INSERT INTO Customers (FirstName, LastName, Email) VALUES ('John', 'Doe', 'johndoe@email.com')

This command will add a new row to the "Customers" table with the specified values for the "FirstName", "LastName", and "Email" columns.

UPDATE:

UPDATE Customers SET Email='newemail@email.com' WHERE CustomerID=1

This command will update the "Email" value of the row with a "CustomerID" of 1 in the "Customers" table to "newemail@email.com".

DELETE:

DELETE FROM Customers WHERE CustomerID=1

This command will delete the row with a "CustomerID" of 1 from the "Customers" table.

SELECT:

SELECT FirstName, LastName FROM Customers WHERE Email='johndoe@email.com'

This command will retrieve the "FirstName" and "LastName" values from the row(s) in the "Customers" table where the "Email" value is 'johndoe@email.com'.

What is DQL?

**DQL:**

DQL stands for Data Query Language, which is a subset of SQL (Structured Query Language) used to retrieve data from a database. DQL commands are used to fetch data from one or more database tables based on certain conditions.

Here is an example of DQL commands in SQL:

SELECT:

SELECT FirstName, LastName, Email FROM Customers

This command will retrieve the "FirstName", "LastName", and "Email" values from all rows in the "Customers" table.

WHERE:

SELECT FirstName, LastName FROM Customers WHERE Country='USA'

This command will retrieve the "FirstName" and "LastName" values from the row(s) in the "Customers" table where the "Country" value is 'USA'.

ORDER BY:

SELECT FirstName, LastName, Email FROM Customers ORDER BY LastName ASC

This command will retrieve the "FirstName", "LastName", and "Email" values from all rows in the "Customers" table, sorted by the "LastName" column in ascending order.

GROUP BY:

SELECT Country, COUNT(\*) FROM Customers GROUP BY Country

This command will retrieve the "Country" and the count of rows for each country from the "Customers" table, grouped by the "Country" column.

DQL commands are used to fetch data from a database without modifying the data itself.