

❖ **What does SQL stand for, and what is its primary purpose?**

- SQL is a Structured Query Language, used for extracting and organising data that is stored in a relational database. A database is a table that consists of rows and columns.
- We can perform create, update, delete operations by querying using standard queries on the database table, tables store data in row and column format.
- And the main purpose is organizing and manipulating large amounts of structured data efficiently.

❖ **Name at least three types of SQL commands and briefly explain their functions.**

- SQL commands are instructions that are used to perform specific actions on a database. They are the guiding principles that dictate the rules for how data is created, modified, accessed and secured within a relational database system.
- **DDL:** Data Definition Language (DDL) commands in SQL are used to define, manage, and modify the structure, of a database. These primarily deal with the creation, alteration, and deletion of database objects such as tables, indexes, and constraints.

CREATE: create new database objects such as tables, indexes, and views.

ALTER: Modifies the structure of an existing database object. (e.g., adding a column)

DROP: Deletes an existing database object.

- **DML:** Data Manipulation Language (DML) commands in SQL are used to manipulate data stored in a database. They include operations such as inserting, updating, and deleting data in database tables.

SELECT: Retrieves data from one or more database tables.

INSERT: Adds new records into a database table.

UPDATE: Modifies existing records in a database table.

DELETE: Removes records from a database table.

- **DQL:** Data Query Language

SELECT: Fetches data from one or more tables based on conditions.

❖ **According to the Microsoft SQL Documentation, what is the difference between DDL and DML?**

DDL	DML
DDL commands are used to define and modify the structure of database objects.	DML commands are used to manipulate the data stored within the database tables.
Create, alter, or drop database objects such as tables, views, indexes, and schemas.	Insert, update, delete, and retrieve data from tables.
These commands affect the database schema but do not directly manipulate the data within the tables.	These commands directly affect the data within the tables but do not alter the database schema.
Changes made by DDL commands are permanent and typically auto-committed, meaning they cannot be rolled back.	Changes made by DML commands can be rolled back if wrapped within a transaction, providing a safeguard against errors.

❖ **How would you use the Microsoft SQL Documentation to find information about creating a new table?**

Go to official Microsoft Documentation shown below

<https://learn.microsoft.com/en-us/sql/t-sql/statements/create-table-transact-sql?view=sql-server-ver16>

In this page you will get details about Syntax, Arguments, Examples. Based on my requirement I will pass required flags and parameters to create a table

Eg: Create table syntax without using options

```
CREATE TABLE { database_name.schema_name.table_name |  
schema_name.table_name | table_name } ( { } [ , ... n ] ) [ ; ]
```

❖ **Write a basic SQL query to retrieve all columns from a table named Employees**

```
SELECT * FROM Employees;
```

❖ **How would you filter records in a table to show only those where the Salary is greater than 50000?**

I will retrieve all columns of Employee Table using a Where condition with Column Name Salary greater than 5000 like below.

```
SELECT * FROM Employees WHERE Salary > 50000;
```