SQL (Structured Query Language) commands are instructions used to interact with relational databases. They are broadly categorized into five types based on their functionality:

**1. Data Definition Language (DDL)**

DDL commands are used to define and modify the structure of database objects, such as tables, indexes, and schemas.

* **CREATE**: Used to create a new database or database objects (e.g., tables, indexes, views).
* CREATE TABLE Employees (
* ID INT,
* Name VARCHAR(50),
* Position VARCHAR(50),
* Salary DECIMAL(10, 2)
* );
* **ALTER**: Used to modify existing database objects.
* ALTER TABLE Employees ADD DateOfJoining DATE;
* **DROP**: Deletes a database object permanently.
* DROP TABLE Employees;
* **TRUNCATE**: Removes all data from a table but retains its structure.
* TRUNCATE TABLE Employees;

**2. Data Manipulation Language (DML)**

DML commands manage the data stored in database objects.

* **SELECT**: Retrieves data from one or more tables.
* SELECT Name, Position FROM Employees WHERE Salary > 50000;
* **INSERT**: Adds new rows to a table.
* INSERT INTO Employees (ID, Name, Position, Salary)
* VALUES (1, 'Alice', 'Manager', 75000);
* **UPDATE**: Modifies existing data in a table.
* UPDATE Employees SET Salary = 80000 WHERE Name = 'Alice';
* **DELETE**: Removes specific rows from a table.
* DELETE FROM Employees WHERE ID = 1;

**3. Data Control Language (DCL)**

DCL commands control user access and permissions in a database.

* **GRANT**: Provides specific permissions to users.
* GRANT SELECT, INSERT ON Employees TO User1;
* **REVOKE**: Removes permissions from users.
* REVOKE INSERT ON Employees FROM User1;

**4. Transaction Control Language (TCL)**

TCL commands manage transactions in a database.

* **COMMIT**: Saves all changes made in the current transaction.
* COMMIT;
* **ROLLBACK**: Reverts changes made in the current transaction.
* ROLLBACK;
* **SAVEPOINT**: Creates a point within a transaction to roll back to.
* SAVEPOINT sp1;
* **SET TRANSACTION**: Defines properties for the current transaction.
* SET TRANSACTION READ ONLY;

**5. Data Query Language (DQL)**

DQL focuses solely on retrieving data from a database. Although commonly grouped under DML, **SELECT** is the primary DQL command.

* **SELECT**: Queries data from one or more tables.
* SELECT \* FROM Employees;

**Summary Table**

| **Category** | **Commands** | **Purpose** |
| --- | --- | --- |
| **DDL** | CREATE, ALTER, DROP, TRUNCATE | Define/modify structure of database objects. |
| **DML** | SELECT, INSERT, UPDATE, DELETE | Manipulate data within tables. |
| **DCL** | GRANT, REVOKE | Manage access and permissions. |
| **TCL** | COMMIT, ROLLBACK, SAVEPOINT, SET TRANSACTION | Handle database transactions. |
| **DQL** | SELECT | Retrieve data from the database. |

These commands together allow users to create, manipulate, secure, and query data in relational databases.