**✅ SQL Command Types Table**

| **Category** | **Full Form** | **Purpose** | **Common Commands** |
| --- | --- | --- | --- |
| 🔷 **DDL** | Data Definition Language | Defines and modifies **structure of database objects** like tables and schemas | CREATE, ALTER, DROP, TRUNCATE, RENAME |
| 🔷 **DML** | Data Manipulation Language | Deals with **data manipulation** — inserting, updating, deleting records | INSERT, UPDATE, DELETE, MERGE |
| 🔷 **DQL** | Data Query Language | Used to **query and fetch** data from the database | SELECT |
| 🔷 **DCL** | Data Control Language | Controls **access to data** and permissions | GRANT, REVOKE |
| 🔷 **TCL** | Transaction Control Language | Manages **transactions** in SQL for consistency and rollback | COMMIT, ROLLBACK, SAVEPOINT, SET TRANSACTION |

**📘 Examples for Each:**

| **Command** | **Description** | **Example** |
| --- | --- | --- |
| CREATE | Creates a new table or object (DDL) | CREATE TABLE Students (...); |
| ALTER | Modifies structure of a table (DDL) | ALTER TABLE Students ADD COLUMN Age INT; |
| DROP | Deletes a table or object (DDL) | DROP TABLE Students; |
| INSERT | Inserts new records (DML) | INSERT INTO Students VALUES (...); |
| UPDATE | Updates existing records (DML) | UPDATE Students SET Age = 21 WHERE ID = 1; |
| DELETE | Deletes records (DML) | DELETE FROM Students WHERE Age < 10; |
| SELECT | Retrieves data (DQL) | SELECT \* FROM Students; |
| GRANT | Gives access privileges (DCL) | GRANT SELECT ON Students TO user1; |
| REVOKE | Removes privileges (DCL) | REVOKE SELECT ON Students FROM user1; |
| COMMIT | Saves transaction changes (TCL) | COMMIT; |
| ROLLBACK | Undoes changes since last COMMIT (TCL) | ROLLBACK; |
| SAVEPOINT | Sets a point for partial rollback (TCL) | SAVEPOINT sp1; |

**🧠 Tips to Remember:**

* ✅ DDL commands auto-commit (cannot be rolled back).
* ✅ DML + TCL work together: use COMMIT/ROLLBACK after INSERT, UPDATE, DELETE.
* ✅ DCL commands are related to **security and access**.

**Must-Know SQL Skills for Data Analysts:**

| **Skill Area** | **Example Command / Concept** |
| --- | --- |
| Retrieving data | SELECT, WHERE, ORDER BY, LIMIT |
| Summarizing data | GROUP BY, HAVING, COUNT(), AVG(), SUM() |
| Combining tables | JOINs (especially INNER and LEFT) |
| Filtering & conditions | AND, OR, IN, NOT IN, BETWEEN, LIKE |
| Handling missing values | IS NULL, COALESCE() |
| Date/time filtering | DATE(), MONTH(), YEAR() |
| Creating & modifying data | CREATE TABLE, INSERT, UPDATE, DELETE (basic) |