

Types of SQL commands

DDL

Data Definition Language

It's used for create and modify the DB structure and its objects.
Commands are CREATE, DROP, ALTER, TRUNCATE and RENAME

DML

Data Manipulation Language

It's used inserting, updating and deleting data in a DB, so we have INSERT, UPDATE and DELETE

DCL

Data Control Language

It's used for access the stored data.
Commands are GRANT and REVOKE

TCL

Transaction Control Language

It's used for handling the transaction, its commands are COMMIT and ROLLBACK

Transaction Control Language

What is a transaction in SQL?

A SQL transaction is a set of one or more SQL statements that interact with a database and are essential for maintaining database integrity.

A transaction can be committed or rolled back (becomes undone) to a database as a single logical unit.

Transactions are used to preserve integrity when multiple operations are executed concurrently or when various users interact concurrently with a database.

Transaction Control Language

COMMIT

It's used for saving data permanently on database.
Once a transaction has been committed, it's not possible to restore its previous state.
It only works on DML commands.

COMMIT;

Transaction Control Language

COMMIT EXAMPLE

Let's assume table employee is empty.

We are going to insert a single row, then we persist data (commit) and close the session.

Another user opens a new one and selects employee.

The result will be the single row.

COMMIT;

Transaction Control Language

COMMIT EXAMPLE

```
SELECT * FROM employee; -- no records found
INSERT INTO employee VALUES (1,'Manuel', 'Gentile');
COMMIT;
-- this user closes the session
```

```
-- another user opens the session
SELECT * FROM employee;
-- 1 record found (1,'Manuel', 'Gentile')
```

Transaction Control Language

ROLLBACK

It's used for reverting data not persisted on database by a transaction.

Once a transaction has been rolled back, it's not possible to restore its previous state.

It only works on DML commands.

ROLLBACK;

Transaction Control Language

ROLLBACK EXAMPLE

Let's assume table employee is empty.
We are going to insert a single row, then we rollback the transaction data and close the session.
Another user opens a new one and selects employee.
The result will be no records.

ROLLBACK;

Transaction Control Language

ROLLBACK EXAMPLE

```
SELECT * FROM employee; -- no records found  
INSERT INTO employee VALUES (1,'Manuel', 'Gentile');
```

ROLLBACK;

-- this user closes the session

-- another user opens the session

```
SELECT * FROM employee;
```

-- 0 records found

Let's connect

If you want to learn more about the topic, connect or send me a DM.

