

Transaction Control Language

- Transaction Control Language can be defined as the portion of a database language used for maintaining consistency of the database and managing transactions in the database.
- A set of SQL statements that are co-related logically and executed on the data stored in the table is known as a transaction.

TCL Commands

- COMMIT Command
- ROLLBACK Command
- SAVEPOINT Command

COMMIT

The main use of COMMIT command is to make the transaction permanent. If there is a need for any transaction to be done in the database that transaction permanent through commit command.

Syntax

COMMIT;

ROLLBACK

Using this command, the database can be restored to the last committed state. Additionally, it is also used with savepoint command for jumping to a savepoint in a transaction.

Syntax

ROLLBACK TO savepoint-name;

SAVEPOINT

The main use of the Savepoint command is to save a transaction temporarily. This way users can rollback to the point whenever it is needed.

Syntax

SAVEPOINT savepoint-name;

Examples

This is purchase table that we are going to use through this tutorial

item	price	customer_name
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Pen	10	Sanskriti
Bag	1000	Sanskriti
Vegetables	500	Sanskriti
Shoes	5000	Sanskriti
Water Bottle	800	XYZ
Mouse	120	ABC
Sun Glasses	1350	ABC

`UPDATE purchase SET price = 20 WHERE item = "Pen";`

O/P : Query OK, 1 row affected (3.02 sec) (Update the price of Pen set it from 10 to 20)

`SELECT * FROM purchase;`

O/P

item	price	customer_name
Pen	20	Sanskriti
Bag	1000	Sanskriti
Vegetables	500	Sanskriti
Shoes	5000	Sanskriti
Water Bottle	800	XYZ
Mouse	120	ABC
Sun Glasses	1350	ABC

`START TRANSACTION;`

Start transaction

`COMMIT;`

Saved/ Confirmed the transactions till this point

`ROLLBACK;`

Lets consider we tried to rollback above transaction

`SELECT * FROM purchase;`

O/P:

item	price	customer_name
Pen	20	Sanskriti

Bag	1000	Sanskriti
Vegetables	500	Sanskriti
Shoes	5000	Sanskriti
Water Bottle	800	XYZ
Mouse	120	ABC
Sun Glasses	1350	ABC

As we have committed the transactions the rollback will not affect anything

```
SAVEPOINT sv_update;
```

Create the savepoint the transactions above this will not be rolledback

```
UPDATE purchase SET price = 30 WHERE item = "Pen";
```

O/P : Query OK, 1 row affected (0.57 sec)

Rows matched: 1 Changed: 1 Warnings: 0

```
SELECT * FROM purchase;
```

item	price	customer_name
Pen	30	Sanskriti
Bag	1000	Sanskriti
Vegetables	500	Sanskriti
Shoes	5000	Sanskriti
Water Bottle	800	XYZ
Mouse	120	ABC
Sun Glasses	1350	ABC

price of pen is changed to 30 using the update command

```
ROLLBACK to sv_update;
```

Now if we rollback to the savepoint price should be 20 after rollback lets see

```
SELECT * FROM purchase;
```

item	price	customer_name
Pen	20	Sanskriti
Bag	1000	Sanskriti
Vegetables	500	Sanskriti
Shoes	5000	Sanskriti

Water Bottle	800	XYZ
Mouse	120	ABC
Sun Glasses	1350	ABC
Torch	850	ABC

As expected we can see update query is rollbacked to sv_update.

Conclusion

With this short tutorial we have learnt TCL commands.