

### TCL : Transaction Control Language ===>  
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\* A transaction is a DML statement or group of DML statements that logically belong together, and make changes in a table.

\* Just as important as manipulating data , is controlling when a change becomes permanent.

\* In an Oracle database, transaction control is achieved using TCL commands or statements.

\* TCL statements allow users to begin a transaction and either end it successfully or revert back to the state of the data prior to the time the transaction began.

\* There are three primary commands in the TCL sublanguage—

- COMMIT
- ROLLBACK
- SAVEPOINT

## COMMIT Command ===>  
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\* The COMMIT command makes a change to data permanent.

\* Any previously uncommitted changes are now committed and cannot be undone.

\* The effect of the COMMIT command is that it allows other sessions to see the data. The session issuing the DML command can always see the changes, but other sessions can see the changes only after you use COMMIT.

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# Implicit Commit ==>  
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\* There are 4 situations in Oracle , where the changes get committed even though we have not issued any COMMIT.

\* They are:

- Commit
- Executing any DDL or DCL statements , as they are self committed.
- Quitting SQL\* Plus by typing exit
- Setting AUTOCOMMIT ON

## RollBack Command ===>  
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\* The ROLLBACK statement does exactly what it implies—it rolls back a transaction to its original state—provided that we have not already issued a COMMIT.

\* If we make a mistake, such as running a DELETE statement, we can undo it with another TCL statement—ROLLBACK.

#### # How Oracle Is Able To RollBack Data ==> =====

\* In Oracle, the data involved in a DML statement, such as the values in an INSERT, are not directly applied to the table until the transaction is complete.

\* This is the reason that, while we can see our DML changes, other sessions cannot.

\* Prior to the COMMIT, the values are placed in a kind of holding area known as the `Undo tablespace` .

\* This area holds the pre-committed version of the data until the transaction is complete.

\* Since the undo space has our data in its original state, it can be moved back and re-applied to the table if necessary using a ROLLBACK statement.

#### ## SavePoint Command ==> =====

\* The SAVEPOINT command allows us to save the results of DML transactions temporarily.

\* A SAVEPOINT is a named breakpoint or marker that indicates a place to which a ROLLBACK can occur.

\* The ROLLBACK command can then refer to a particular SAVEPOINT and roll back the transaction up to that point; any statements issued after the SAVEPOINT are rolled back.