Transaction Control Language (TCS)

.NET

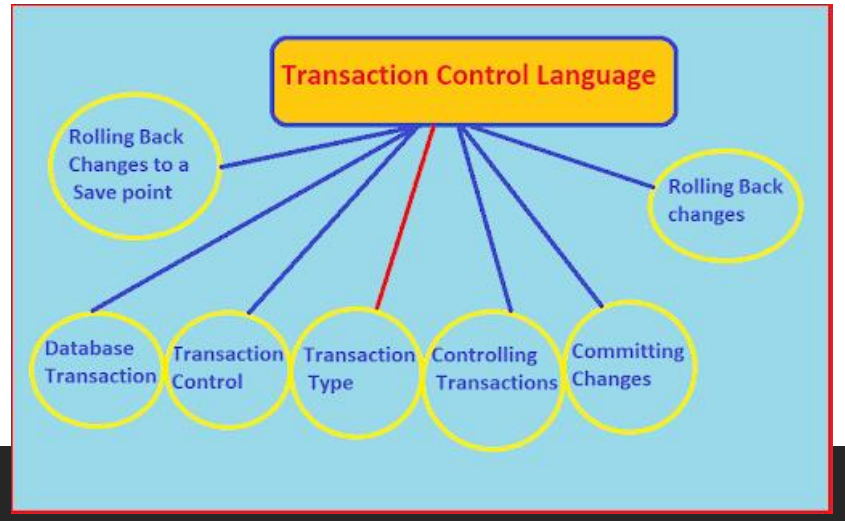
Software used to maintain relational databases is called a Relational Database Management System (RDBMS).
Many relational database systems use Structured Query Language (SQL) for querying and maintaining databases.

HTTPS://DOCS.MICROSOFT.COM/EN-US/SQL/T-SQL/LANGUAGE-REFERENCE?

Transaction Control Language (TCL)

https://www.databasestar.com/dml-ddl-tcl-commands/
https://www.geeksforgeeks.org/sql-ddl-dml-tcl-dcl/

Transaction Control Language commands are used to manage transactions in the database. These are used to manage the changes made by DML-statements. It also allows statements to be grouped together into logical transactions.



Commit

https://www.geeksforgeeks.org/sql-ddl-dml-tcl-dcl/
https://docs.microsoft.com/en-us/sql/t-sql/language-elements/commit-transaction-transact-sql?view=sql-server-ver15

The ***Commit*** command is used to permanently save any transaction into the database.

Commit marks the end of a successful ***implicit*** or ***explicit*** transaction. If @@TRANCOUNT is 1, COMMIT TRANSACTION makes all data modifications since the start of the transaction a permanent part of the database, it then frees the transaction's resources and decrements @@TRANCOUNT to 0. When @@TRANCOUNT is greater than 1, COMMIT TRANSACTION decrements @@TRANCOUNT only by 1 and the transaction stays active.

```
COMMIT [ { TRAN | TRANSACTION } [ transaction_name | @tran_name_variable ] ] [ WITH (
DELAYED_DURABILITY = { OFF | ON } ) ]
[ ; ]
```

Rollback

https://www.geeksforgeeks.org/sql-ddl-dml-tcl-dcl/
https://docs.microsoft.com/en-us/sql/t-sql/language-elements/commit-transaction-transact-sql?view=sql-server-ver15

- ***Rollback*** restores the database to the last ***committed*** state. ***Rollback*** is also used ***savepoint*** to jump to a specific ***savepoint*** in a transaction.
- ***Rollback*** rolls back an explicit or implicit transaction to the beginning of the transaction, or to a ***savepoint*** inside the transaction.
- ROLLBACK TRANSACTION erases all data modifications made from the start of the transaction or to a ***Savepoint***. It also frees resources held by the transaction.
- This does not include changes made to local variables or table variables. These are not erased by this statement.

```
ROLLBACK { TRAN | TRANSACTION }
    [ transaction_name | @tran_name_variable
    | savepoint_name | @savepoint_variable ]
[ ; ]
```

Save

https://www.geeksforgeeks.org/sql-ddl-dml-tcl-dcl/
https://docs.microsoft.com/en-us/sql/t-sql/language-elements/save-transaction-transact-sql?view=sql-server-ver15

- Save is used to temporarily save a transaction so that you can rollback to that point whenever necessary.
- The ***savepoint*** defines a location to which a ***transaction*** can return if part of the ***transaction*** is conditionally canceled. You can even set a ***savepoint*** within a ***transaction***.
- If a ***transaction*** is rolled back to a ***savepoint***, it must proceed to completion with more ***Transact-SQL statements*** if needed and a COMMIT TRANSACTION statement, or it must be canceled altogether by rolling the ***transaction*** back to its beginning.
- To cancel an entire ***transaction***, use ROLLBACK TRANSACTION transaction_name to undo all the ***statements*** or ***procedures*** of the ***transaction***.
- Duplicate ***savepoint*** names are allowed in a ***transaction***, but ROLLBACK TRANSACTION will only roll the ***transaction*** back to the most recent SAVE TRANSACTION with that name.

```
SAVE { TRAN | TRANSACTION } { savepoint_name | @savepoint_variable }
[ ; ]
```