

SQL Transactions

- BEGIN TRANSACTION
- WITH (NOLOCK)
- COMMIT TRANSACTION
- ROLLBACK TRANSACTION



What is a Transaction?

- A transaction is a series of operations performed as a single body of work
- Multiple statements on a query tab are executed as a single transaction
- Transactions are all or nothing by default
- If all operations in a transaction succeed then the transaction is automatically committed
- If any of the operations fail then the entire transaction is rolled back

```
SELECT *
INTO Customer_Temp
FROM Customer

BEGIN TRANSACTION
DELETE Customer_Temp
WHERE Country != 'Germany'

/*
ROLLBACK TRANSACTION

COMMIT TRANSACTION
*/
```



Begin Transaction

- You can use the BEGIN TRANSACTION keywords to manually set the beginning of a transaction
- All queries executed after the BEGIN TRANSACTION will not be saved until you explicitly COMMIT or ROLLBACK the transaction

```
SELECT *
INTO Customer_Temp
FROM Customer

BEGIN TRANSACTION
DELETE Customer_Temp
WHERE Country NOT IN('India','Denmark')

/*
COMMIT TRANSACTION

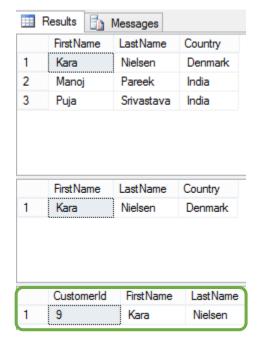
ROLLBACK TRANSACTION
*/
```



COMMIT TRANSACTION

- When the COMMIT TRANSACTION statement is executed, the operations in the transaction are saved to the database
- The operations cannot be undone

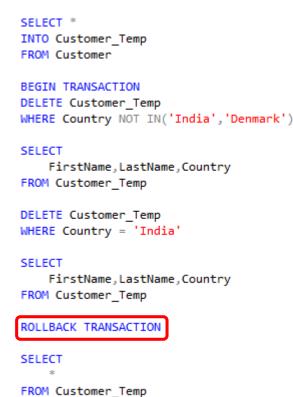
```
SELECT *
INTO Customer Temp
FROM Customer
BEGIN TRANSACTION
DELETE Customer Temp
WHERE Country NOT IN('India', 'Denmark')
SELECT
    FirstName, LastName, Country
FROM Customer Temp
DELETE Customer Temp
WHERE Country = 'India'
SELECT
    FirstName, LastName, Country
FROM Customer Temp
COMMIT TRANSACTION
SELECT
FROM Customer_Temp
```

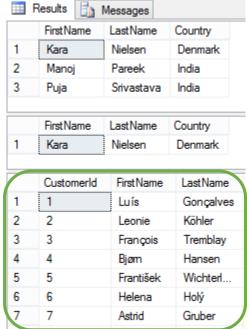




ROLLBACK TRANSACTION

- When the ROLLBACK TRANSACTION statement is executed, all statements run after the BEGIN TRANSACTION statement are undone
- You cannot undo a rollback







View Transaction Status

- After beginning a transaction you can check on the status with SELECT statements
- You can then choose whether to COMMIT or ROLLBACK the transaction

```
SELECT *
INTO Customer Temp
FROM Customer
BEGIN TRANSACTION
DELETE Customer Temp
WHERE Country NOT IN('India', 'Denmark')
SELECT
    FirstName, LastName, Country
FROM Customer Temp
DELETE Customer_Temp
WHERE Country = 'India'
SELECT
    FirstName, LastName, Country
FROM Customer Temp
COMMIT TRANSACTION
SELECT
FROM Customer_Temp
```



WITH (NOLOCK)

- Once you begin a transaction all associated tables are locked until the transaction is committed or rolled back
- No one can access a table while it is locked
- If you add WITH (NOLOCK) after your table name it will ignore the lock and display the table results
- Uncommitted transactions will be included. This may not be a good thing if they are subsequently rolled back

```
BEGIN TRANSACTION
DELETE Customer Temp
WHERE Country NOT IN('India', 'Denmark')
DELETE Customer Temp
WHERE Country = 'India'
SELECT *
FROM Customer_Temp WITH (NOLOCK)
Results 📑 Messages
             First Name
                                    Address
    Customerld
                     LastName
                            Company
1
             Kara
                     Nielsen
                            NULL
                                    Sønder Boulevard 51
```



Summary

- BEGIN TRANSACTION
- WITH (NOLOCK)
- COMMIT TRANSACTION
- ROLLBACK TRANSACTION