“Transactions are an integral part of a relational database system and they help define a single unit of work.” (Sack, 2016). Transactions are used to make sure they are completed successfully or they have failed. In case they are completed successfully the command COMMIT saves the database, otherwise the ROLLBACK command will undo the transactions performed from the BEGIN TRANSACTION until the ROLLBACK command.

Example

“- - Before count

SELECT COUNT(\*) BeforeCount FROM HumanResources.Department

* Variable to hold the latest error integer value

DECLARE @Error int

BEGIN TRANSACTION

INSERT HumanResources.Department

(Name, GroupName)

VALUES (‘Accounts Payable’, ‘Accounting’)

SET @Error = @@ERROR

IF (@Error<> 0) GOTO Error\_Handler

INSERT HumanResources.Department

(Name, GroupName)

VALUES (‘Engineering’, ‘Research and Development’)

SET @Error = @@ERROR

IF (@Error <> 0) GOTO Error\_Handler

COMMIT TRAN

Error\_Handler:

IF @Error <> 0

BEGIN

ROLLBACK TRANSACTION

END

* After count

SELECT COUNT(\*) AfterCount FROM HumanResources.Department” (Sack, 2006)

This SQL code is a demonstration of transactions. It starts with a comment for a statement. The second line counts all the rows in the HumanResources.Department table. Then a comment for the declaration of a variable @Error type int for storing the error code if there is an error in the INSERT command execution. There are two INSERT commands with the two columns and the values for inserting in those columns. After the first INSERT command comes a SET command for assigning the error code in the @Error variable. Following is an IF condition statement that if there is an error then it sends the flow of the code to the Error\_Handler block. If there is not error, it continues with the next line. The second INSERT command follows and the same loading of the last error in the variable @Error with the system function @@ERROR function that returns the last error code. If there is no error then COMMIT the Transactions. Next is the Error\_Handler declaration which it rollbacks the transaction in case of an error. After this block is the counting of the rows in the HumanResources.Department table.

References

Sack, J (2006) SQL Server 2005 T-SQL Recipes – A Problem-Solution Approach