



Hands-on Lab: Committing and Rolling back a Transaction using a Stored Procedure

Estimated time needed: 10 minutes

A transaction is simply a sequence of operations performed using one or more SQL statements as a single logical unit of work. A database transaction must be ACID (Atomic, Consistent, Isolated and Durable). The effects of all the SQL statements in a transaction can either be applied to the database using the COMMIT command or undone from the database using the ROLLBACK command.

In this lab, you will learn some commonly used TCL (Transaction Control Language) commands of SQL through the creation of a stored procedure routine. You will learn about COMMIT, which is used to permanently save the changes done in the transactions in a table, and about ROLLBACK, which is used to undo the transactions that have not been saved in a table. ROLLBACK can only be used to undo the changes in the current unit of work.

Software Used in this Lab

In this lab, you will use an [IBM Db2 Database](#). Db2 is a Relational Database Management System (RDBMS) from IBM, designed to store, analyze and retrieve data efficiently.

To complete this lab you will utilize a Db2 database service on IBM Cloud. If you did not already complete this lab task earlier in this module, you will not yet have access to Db2 on IBM Cloud, and you will need to follow the lab below first:

- [Hands-on Lab : Sign up for IBM Cloud, Create Db2 service instance and Get started with the Db2 console](#)

Data Used in this Lab

The data used in this lab is internal data. You will be working on the **BankAccounts** and **ShoeShop** tables.

ACCOUNTNUMBER	ACCOUNTNAME	BALANCE
B001	Rose	300.00
B002	James	1345.00
B003	Shoe Shop	124200.00
B004	Corner Shop	76000.00

PRODUCT	STOCK	PRICE
Boots	11	200.00
High heels	8	600.00
Brogues	10	150.00
Trainers	14	300.00

This lab requires you to have the **BankAccounts** and **ShoeShop** tables populated with sample data on Db2. Download the [BankAccounts-CREATE.sql](#) and [ShoeShop-CREATE.sql](#) scripts below, upload them to the Db2 console and run them. The scripts will create new tables called BankAccounts and ShoeShop while dropping any previous BankAccounts and ShoeShop tables if they exist, and will populate them with the sample data required for this lab.

- [BankAccounts-CREATE.sql](#)

- [ShoeShop-CREATE.sql](#)

Please go through the lab below to learn how to upload and run a script on Db2 console (for this case, you need don't need to know anything else other than how to upload and run a script):

- [Hands-on Lab : Create tables using SQL scripts and load data into tables](#)

Objectives

After completing this lab, you will be able to:

- Permanently save the changes done in a transaction
- Undo the transaction that has not been saved

Instructions

When you approach the exercises in this lab, follow the instructions to run the queries on Db2:

- Go to the [Resource List](#) of IBM Cloud by logging in where you can find the Db2 service instance that you created in a previous lab under **Services** section. Click on the **Db2-xx service**. Next, open the Db2 Console by clicking on **Open Console** button. Click on the 3-bar menu icon in the top left corner and go to the **Run SQL** page. The Run SQL tool enables you to run SQL statements.
 - If needed, follow [Hands-on Lab : Sign up for IBM Cloud, Create Db2 service instance and Get started with the Db2 console](#)

Exercise

Task A: Example exercise

Let us go through an example on committing and rolling back a transaction

1. Make sure you have created and populated the **BankAccounts** and **ShoeShop** tables by following the "**Data Used in this Lab**" section of this lab.

ACCOUNTNUMBER	ACCOUNTNAME	BALANCE
B001	Rose	300.00
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B003	Shoe Shop	124200.00
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Brogues	10	150.00
Trainers	14	300.00

2.
 - You will create a stored procedure routine named **TRANSACTION_ROSE** which will include TCL commands like COMMIT and ROLLBACK.
 - Now develop the routine based on the given scenario to execute a transaction.
 - **Scenario:** Let's buy Rose a pair of Boots from ShoeShop. So we have to update the Rose balance as well as the ShoeShop balance in the BankAccounts table. Then we also have to update Boots stock in the ShoeShop table. After Boots, let's also attempt to buy Rose a pair of Trainers.
 - To create the stored procedure routine on Db2, copy the code below and paste it to the textbox of the **Run SQL** page. Click **Run all**.

