

Hands-on Lab: Committing and Rolling Back a Transaction



Estimated time needed: 20 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.

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

Software Used in this Lab

MySQL is a Relational Database Management System (RDBMS) designed to efficiently store, manipulate, and retrieve data.



To complete this lab you will utilize MySQL relational database service available as part of IBM Skills Network Labs (SN Labs) Cloud IDE. SN Labs is a virtual lab environment used in this course.

Database Used in this Lab

MySQLlearners database has been used in this lab.

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. Download the bankaccounts-CREATE.sql and shoeshop-CREATE.sql scripts below, and load them to the phpMyAdmin console. The scripts will create new tables called bankaccounts and shoeshop and populate them with the sample data required for this lab.

- [BankAccounts-CREATE.sql](#)
- [ShoeShop-CREATE.sql](#)

Sample Exercise

Example of committing and rolling back a transaction.

1. **Scenario:** Rose is buying a pair of boots from shoeshop. So we have to update Rose's balance as well as the *current* 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.

- Once the tables are ready, create a stored procedure routine named **TRANSACTION_ROSE** that includes TCL commands like COMMIT and ROLLBACK.
- Now develop the routine based on the given scenario to execute a transaction.
- To create the stored procedure routine on MySQL, copy the code below and paste it to the textarea of the **SQL** page. Click **Go**.

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3. Let's now check if the transaction can successfully be committed or not. Copy the code below in a **new blank script** and paste it to the textarea of the **SQL** page. Click **Go**

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23. END //
24. SET METER ;
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Conclusion

Congratulations! You have completed this lab, and you are ready for the next topic.

You are now able to:

- Write a stored procedure to record a transaction in multiple tables
- Understand the difference between permanent and rollable transactions
- Perform a transaction
- Perform a rollback

Author(s)

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Changelog

| Date | Version | Changed by | Change Description |
|------------|---------|-------------------------------|-------------------------|
| 2023-10-27 | 0.5 | Mercedes Schneider | QA Pass w/fixes |
| 2023-10-15 | 0.4 | Abhishek Gagneja | Updated instruction set |
| 2023-05-10 | 0.3 | Eric Hao & Vladislav Boyko | Updated Page Frames |
| 2023-05-04 | 0.2 | Rahul Jadeep | Updated Markdown file |
| 2021-11-01 | 0.1 | Lakshmi Holla, Mallika Singla | Initial Version |

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