

Hands-on Lab: OLTP Database



Skills
Network

Estimated time needed: **30** minutes.

About This SN Labs Cloud IDE

This Skills Network Labs Cloud IDE provides a hands-on environment for course and project related labs. It utilizes Theia, an open-source IDE (Integrated Development Environment) platform, that can be run on desktop or on the cloud. To complete this lab, we will be using the Cloud IDE based on Theia and MySQL running in a Docker container.

Important Notice about this lab environment

Please be aware that sessions for this lab environment are not persisted. Every time you connect to this lab, a new environment is created for you. Any data you may have saved in the earlier session would get lost. Plan to complete these labs in a single session, to avoid losing your data.

Scenario

You are a data engineer at an e-commerce company. Your company needs you to design a data platform that uses MySQL as an OLTP database. You will be using MySQL to store the OLTP data.

Objectives

In this assignment you will:

- design the schema for OLTP database.
- load data into OLTP database.
- automate admin tasks.

Tools / Software

- MySQL 8.0.22
- phpMyAdmin 5.0.4

Note - Screenshots

Throughout this lab you will be prompted to take screenshots and save them on your own device. You will need these screenshots to either answer graded quiz questions or to upload as your submission for peer review at the end of this course. You can use various free screengrabbing tools to do this or use your operating system's shortcut keys to do this (for example Alt+PrintScreen in Windows).

Exercises - Setting up the database

Exercise 1 - Check the lab environment

Before you proceed with the assignment :

- Start MySQL server.

Exercise 2 - Design the OLTP Database

Task 1 - Create a database.

Create a database named sales.

Task 2 - Design a table named sales_data.

Design a table named sales_data based on the sample data given.

product_id	customer_id	price	quantity	timestamp
6739	76305	230	1	2020-09-05 16:20:03
7460	81008	1455	4	2020-09-05 16:20:04
6701	7556	1159	2	2020-09-05 16:20:05
8021	36492	3727	2	2020-09-05 16:20:06
6442	11282	4387	5	2020-09-05 16:20:07

Create the sales_data table in sales database.

Take a screenshot of the sql statement you used and the output. Also save the code in a text document for later use.

Name the screenshot as createtable.jpg. (images can be saved with either .jpg or .png extension)

Exercises - Querying and Admin tasks

Exercise 3 - Load the Data

Task 3 - Import the data in the file oltpdata.csv

Download the file oltpdata.csv from [here](#).

Import the data from oltpdata.csv into sales_data table using phpMyAdmin.

Take a screenshot of the phpMyAdmin import status.

Name the screenshot as importdata.jpg. (images can be saved with either .jpg or .png extension)

Task 4 - List the tables in the database sales.

Take a screenshot of the command you used and the output. Also save the code in a text document for later use.

Name the screenshot as `listtables.jpg`. (images can be saved with either `.jpg` or `.png` extension)

Task 5. Write a query to find out the count of records in the tables `sales_data`.

Take a screenshot of the command you used and the output. Also save the code in a text document for later use.

Name the screenshot as `salesrows.jpg`. (images can be saved with either `.jpg` or `.png` extension)

Exercise 4 - Set up Admin tasks

Task 6 - Create an index

Create an index named `ts` on the timestamp field.

Task 7 - List indexes

List indexes on the table `sales_data`.

Take a screenshot of the command you used and the output. Also save the code in a text document for later use.

Name the screenshot as `listindexes.jpg`. (images can be saved with either `.jpg` or `.png` extension)

Task 8 - Write a bash script to export data.

Write a bash script named `datadump.sh` that exports all the rows in the `sales_data` table to a file named `sales_data.sql`

Take a screenshot of the contents of the `datadump.sh` bash file command you used and the output. Also save the code in a text document for later use.

Name the screenshot as `exportdata.jpg`. (images can be saved with either `.jpg` or `.png` extension)

Conclusion

You have successfully created the OLTP database with all the required tables and data.

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