

Hands-on Lab: Create and Load Tables using SQL Scripts



Estimated time needed: 20 minutes

In this lab, you will learn how to create tables and load data using the phpMyAdmin graphical user interface (GUI) tool in the MySQL database service.

Objectives

After completing this lab, you will be able to use phpMyAdmin with MySQL to:

- Create a database on MySQL
- Create tables using SQL scripts
- Load data into tables directly from CSV files

MySQL

In this lab, you will use [MySQL](#). MySQL is a Relational Database Management System (RDBMS) designed to efficiently store, manipulate, and retrieve data.



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

Database Used in this Lab

The database used in this lab is internal. You will be working on a sample Cardio-Vascular Diseases (CVD) database. This CVD database schema consists of five tables: PATIENTS, MEDICAL_HISTORY, MEDICAL_PROCEDURES, MEDICAL_DEPARTMENTS, and MEDICAL_LOCATIONS.

Each table has a few rows of sample data. The following diagram shows the contents of the CVD database:

SIMPLE CVD DATABASE TABLES

PATIENTS

PATIENT_ID	FIRST_NAME	LAST_NAME	SSN	BIRTH_DATE	SEX	ADDRESS	DEPT_ID
P001	John	Doe	123456789	1990-05-15	M	123 Main St	D001
P002	Jane	Smith	987654321	1985-10-20	F	456 Oak Ave	D002
P003	Michael	Johnson	111222333	1975-03-12	M	789 Elm St	D003
P004	Emily	Brown	444555666	1980-09-25	F	321 Pine Rd	D004
P005	William	Miller	777888999	1992-11-18	M	567 Maple Ave	D003

MEDICAL HISTORY

MEDICAL_HISTORY_ID	PATIENT_ID	DIAGNOSIS_DATE	DIAGNOSIS
MH001	P001	2022-12-10	I20
MH002	P001	2023-07-30	I25.
MH003	P002	2023-08-01	I25.
MH004	P003	2023-08-01	I20
MH005	P004	2023-08-01	I25
MH006	P005	2023-08-02	I50

MEDICAL PROCEDURES

PROCEDURE_ID	PROCEDURE_NAME	PROCEDURE_DATE	PATIENT_ID	DEPT_ID
PR001	Angioplasty	2023-07-30	P001	D002
PR002	Cardiac Catheterization	2023-08-01	P002	D002
PR003	Electrocardiogram	2023-08-02	P003	D003
PR004	Echocardiogram	2023-08-03	P004	D004
PR005	Stress Test	2023-08-03	P005	D003
PR006	Coronary Angiogram	2023-08-04	P003	D003
PR007	Pacemaker Implantation	2023-08-04	P005	D003

MEDICAL DEPARTMENTS

DEPT_ID	DEPT_NAME	MANAGER_ID	LOCATION
D001	Angioplasty	NULL	
D002	Cardiac Catheterization	NULL	
D003	Electrocardiogram	NULL	
D004	Echocardiogram	NULL	

MEDICAL LOCATIONS

DEPT_ID	DEPT_NAME	MANAGER_ID
L001	D001	City Hospital
L002	D002	Medical Center

Your task is to create this database in MySQL. This task is divided into three parts.

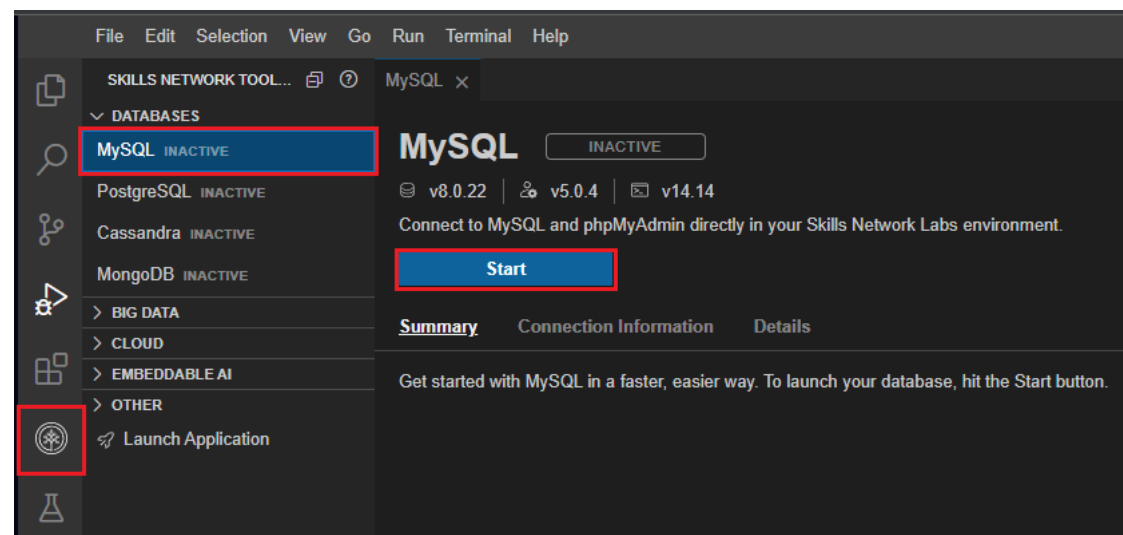
- Task 1: Create the database on MySQL using the phpMyAdmin GUI.
- Task 2: Create all the tables in MySQL using an SQL script.
- Task 3: Populate each table with the data in respective CSV files.

Task 1 : Create the database

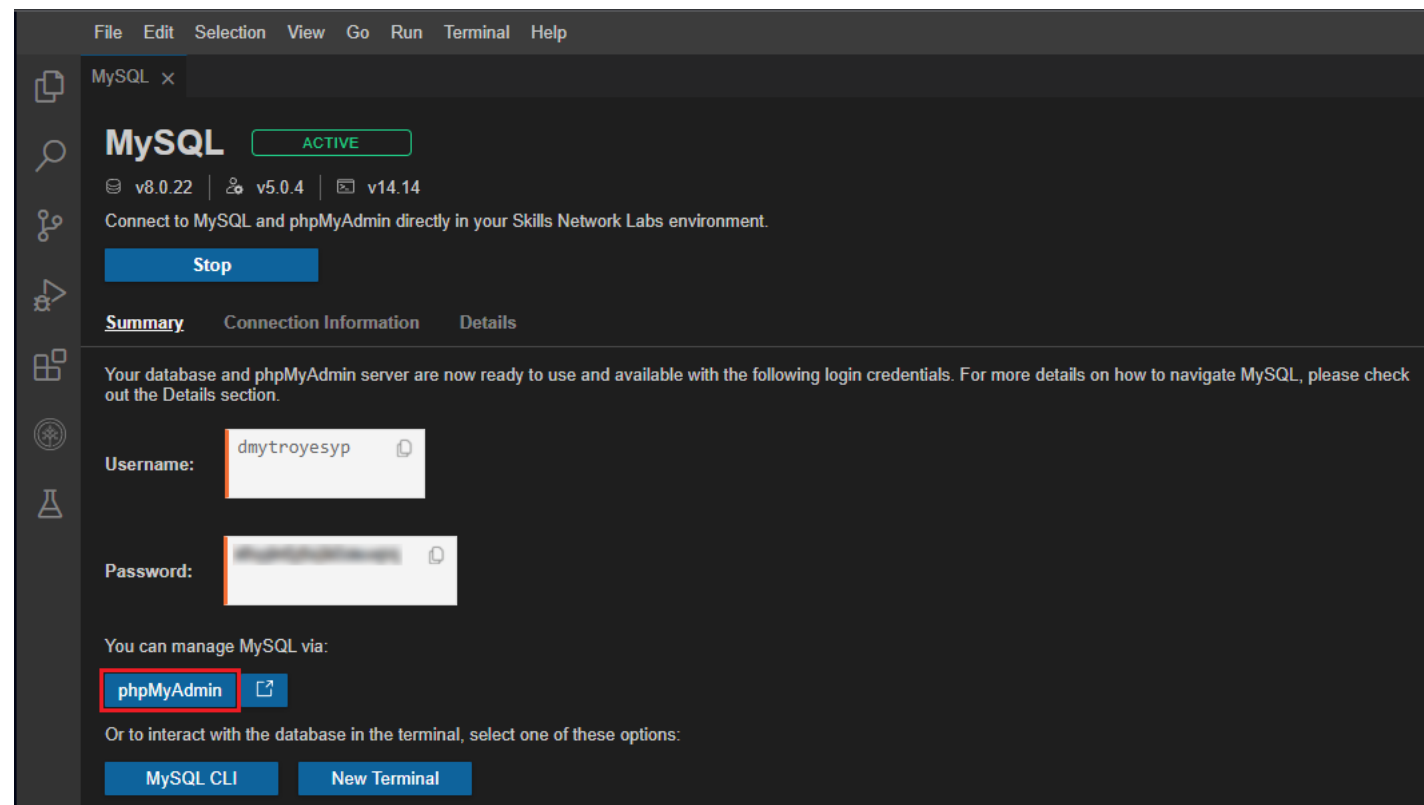
Follow the instructions shared below to create the database cvd in MySQL.

Launch phpMyAdmin

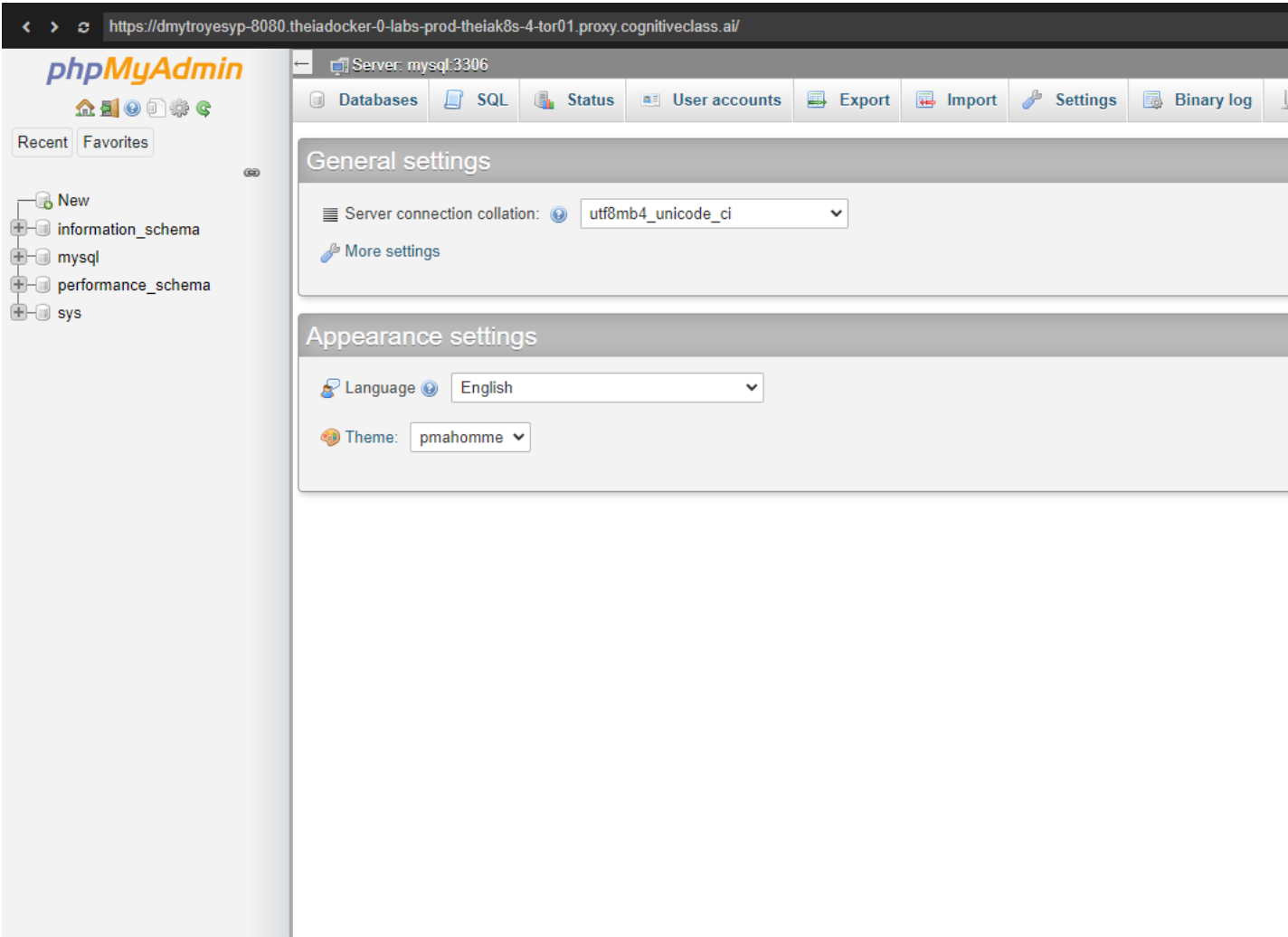
1. Click **Skills Network Toolbox**. In the **Database** section, click **MySQL**.
- To start the MySQL, click **Start**.



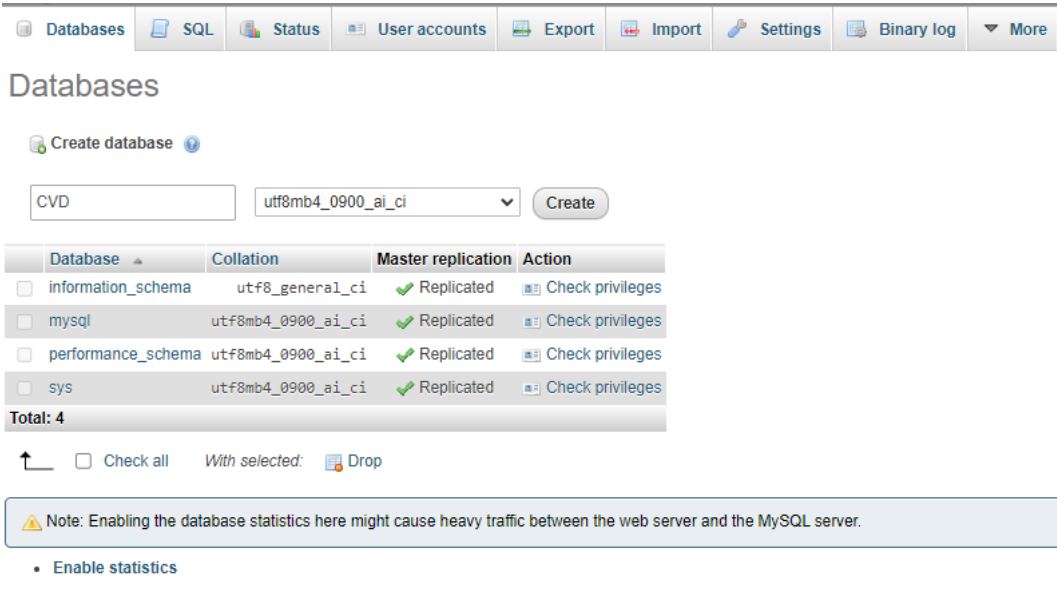
2. Once **MySQL** has started, click the **phpMyAdmin** button to open **phpMyAdmin** in the same window.



3. You will see the phpMyAdmin GUI tool.



4. In the tree view, click **New** to create a new empty database. Then, enter **CVD** as the name of the database and click **Create**.
The encoding will be left as **utf8mb4_0900_ai_ci**. UTF-8 is the most commonly used character encoding for content or data.



Task 2 : Create tables using SQL script

In this exercise, you will learn how to execute a script containing the CREATE TABLE commands for all the tables rather than create each table manually by typing the DDL commands in the SQL editor.

Note: SQL scripts are basically a set of SQL commands compiled in a single file. Each command must be terminated with a semicolon ;. The extension of the file is to be kept as .sql. Upon importing this file in the phpMyAdmin interface, the commands in the file are run sequentially.

Follow the steps shared below.

- Download the script file to your local machine:
[CVD_Database_Create_Tables_Script.sql](#)
- Select the CVD database. Then click the **Import** tab.
- Click **Choose File**, browse for the file and upload it.
- Once uploaded, scroll down and click **Go**.

phpMyAdmin

Server: mysql:3306 » Database: CVD

Structure SQL Search Query Export Import Operations Privileges Routines Events

Recent Favorites

New

CVD

information_schema

mysql

performance_schema

sys

Importing into the database "CVD"

File to import:

File may be compressed (gzip, bzip2, zip) or uncompressed.
A compressed file's name must end in `.[format].[compression]`. Example: `.sql.zip`

Browse your computer: **Choose File** CVD_Datab...es_Script.sql (Max: 2,048KiB)

You may also drag and drop a file on any page.

Character set of the file: utf-8

Partial import:

☒ Allow the interruption of an import in case the script detects it is close to the PHP timeout limit. *(This might be a good way to import large files, however it can brea*

Skip this number of queries (for SQL) starting from the first one: 0

Other options:

☒ Enable foreign key checks

Format:

SQL

Format-specific options:

SQL compatibility mode: NONE

☒ Do not use AUTO_INCREMENT for zero values

- The script then gets executed successfully, and the interface shows entries in the image below.

The screenshot shows the phpMyAdmin interface with the 'CVD' database selected. The 'Structure' tab is active, displaying a list of tables: MEDICAL_DEPARTMENTS, MEDICAL_HISTORY, MEDICAL_LOCATIONS, MEDICAL_PROCEDURES, and PATIENTS. The 'Console' tab is also visible, showing the execution of a script that drops existing tables and creates new ones. The script consists of several queries, each followed by a confirmation message from MySQL.

```

-- Import has been successfully finished, 15 queries executed. (CVD_Database_Create_Tables_Script.sql)

-- MySQL returned an empty result set (i.e. zero rows). (Query took 0.0065 seconds.)
DROP TABLE IF EXISTS PATIENTS;

-- Note: #1051 Unknown table 'CVD.PATIENTS'

-- MySQL returned an empty result set (i.e. zero rows). (Query took 0.0038 seconds.)
DROP TABLE IF EXISTS MEDICAL_HISTORY;

-- Note: #1051 Unknown table 'CVD.MEDICAL_HISTORY'

-- MySQL returned an empty result set (i.e. zero rows). (Query took 0.0038 seconds.)
DROP TABLE IF EXISTS MEDICAL_PROCEDURES;

-- Note: #1051 Unknown table 'CVD.MEDICAL_PROCEDURES'

-- MySQL returned an empty result set (i.e. zero rows). (Query took 0.0044 seconds.)
DROP TABLE IF EXISTS MEDICAL_DEPARTMENTS;

-- Note: #1051 Unknown table 'CVD.MEDICAL_DEPARTMENTS'

-- MySQL returned an empty result set (i.e. zero rows). (Query took 0.0161 seconds.)
DROP TABLE IF EXISTS MEDICAL_LOCATIONS;

```

- Click any of the tables to see its Table Definition (its list of columns, data types, and so on). The image below displays the structure of the table PATIENTS.

The screenshot shows the phpMyAdmin interface with the 'PATIENTS' table selected. The 'Structure' tab is active, displaying the table's structure. The table has 8 columns: PATIENT_ID, FIRST_NAME, LAST_NAME, SSN, BIRTH_DATE, SEX, ADDRESS, and DEPT_ID. Each column has a data type, collation, and attributes. The 'Action' column provides links to change, drop, or view more details for each column.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	PATIENT_ID	char(9)	utf8mb4_0900_ai_ci		No	None			Change Drop More
2	FIRST_NAME	varchar(15)	utf8mb4_0900_ai_ci		No	None			Change Drop More
3	LAST_NAME	varchar(15)	utf8mb4_0900_ai_ci		No	None			Change Drop More
4	SSN	char(9)	utf8mb4_0900_ai_ci		Yes	NULL			Change Drop More
5	BIRTH_DATE	date			Yes	NULL			Change Drop More
6	SEX	char(1)	utf8mb4_0900_ai_ci		Yes	NULL			Change Drop More
7	ADDRESS	varchar(30)	utf8mb4_0900_ai_ci		Yes	NULL			Change Drop More
8	DEPT_ID	char(9)	utf8mb4_0900_ai_ci		No	None			Change Drop More

Task 3 : Load data into tables

You now need to load the data to the tables. You could manually insert each row into the table one by one, but that is highly inefficient. Instead, MySQL (and almost every other database) lets you load data from CSV files directly to the tables.

The steps below explain loading data into the tables you created in Task 2.

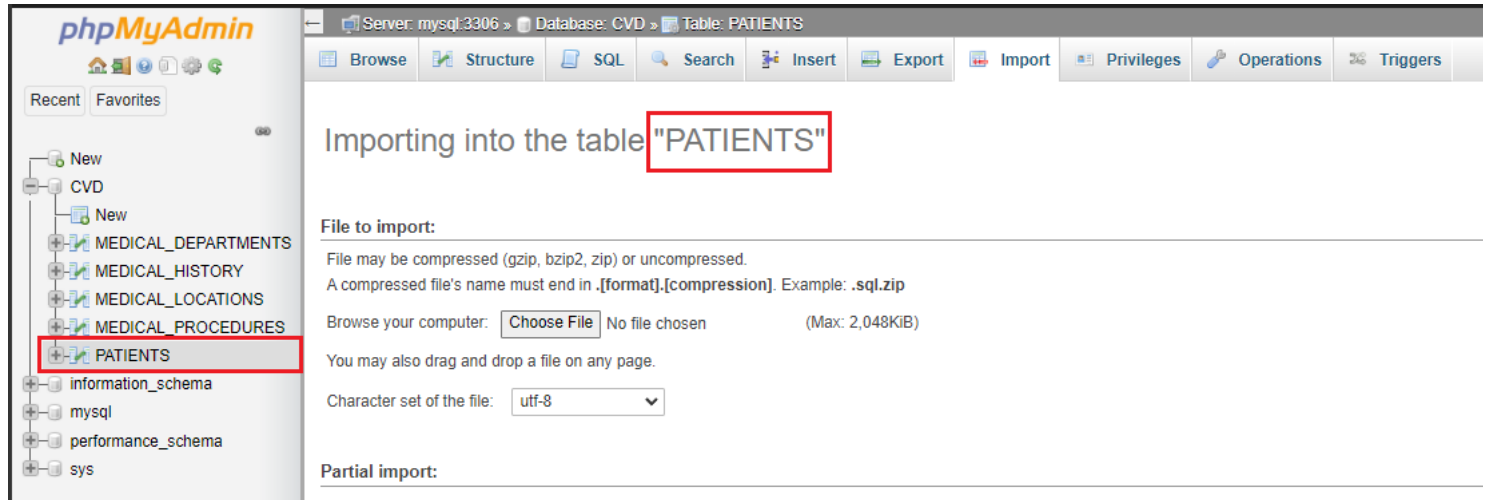
- Download the 5 CSV files below to your local machine.

- [Patients.csv](#)
- [MedicalHistory.csv](#)
- [MedicalProcedures.csv](#)
- [MedicalDepartments.csv](#)
- [MedicalLocations.csv](#)

The steps to load a CSV to a table are as follows.

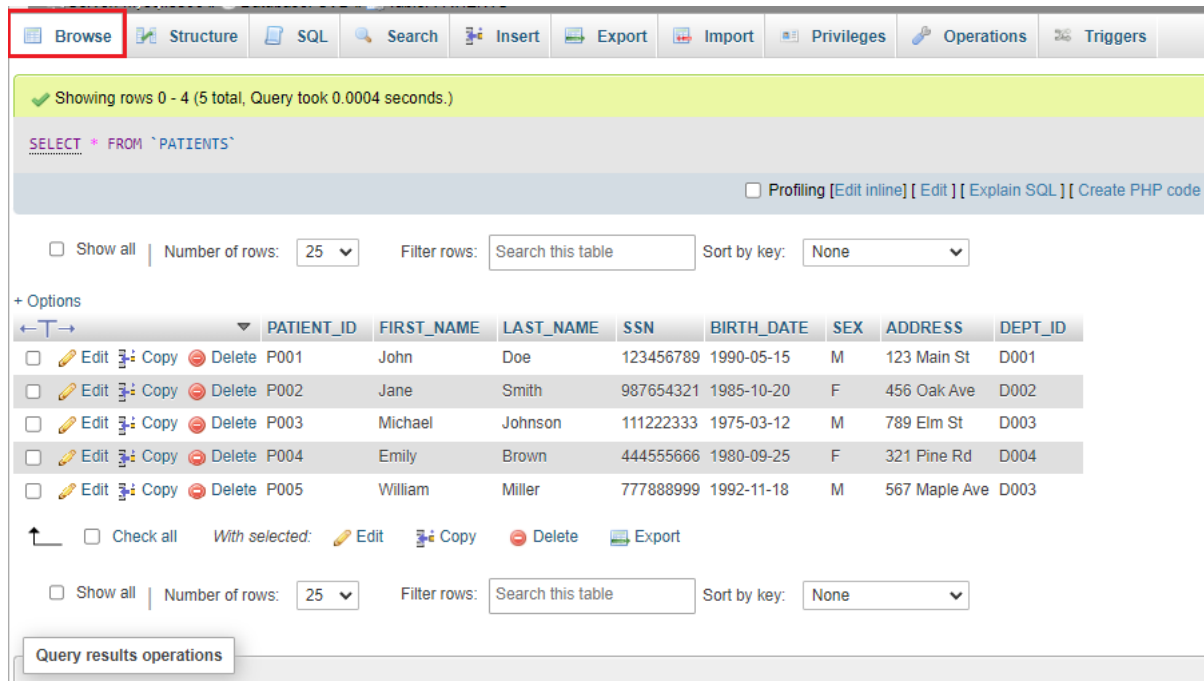
- Select the table.
- Click the Import tab.
- Browse to the location of the CSV file and click 'Go' to load the CSV file.

The images below share how to load the CSV data to the PATIENTS table.



Once the table is loaded, you will get a message that the records are inserted successfully.

Further, you can click on browse and view the table's data.



Practice exercise

Repeat the same process for all of the other tables.

Conclusion

Congratulations on completing this lab.

In this lab, you learned how to :

- Use phpMyAdmin GUI to operate on MySQL servers
- Create a new database in phpMyAdmin.
- Create the tables for the dataset using SQL scripts
- Load data from a CSV file directly to a table in MySQL.

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Changelog

Date	Version	Changed by	Change Description
2023-10-09	1.3	Steve Hord	QA pass with edits
2023-10-06	1.2	Misty Taylor	ID Check
2023-09-09	1.1	Abhishek Gagneja	Modified the instructions
2023-08-02	1.0	Dmytro Yesyp	Initial version created

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