

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	LOC
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.

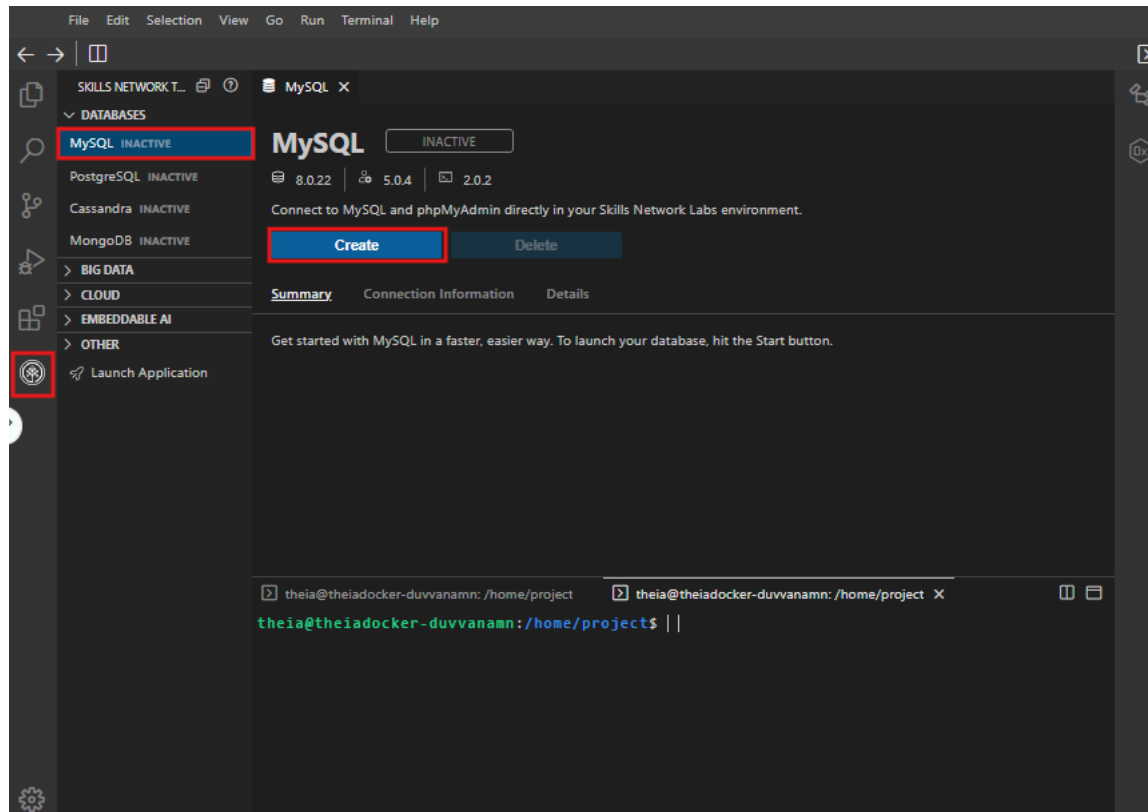
Task 1 : Create the database

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

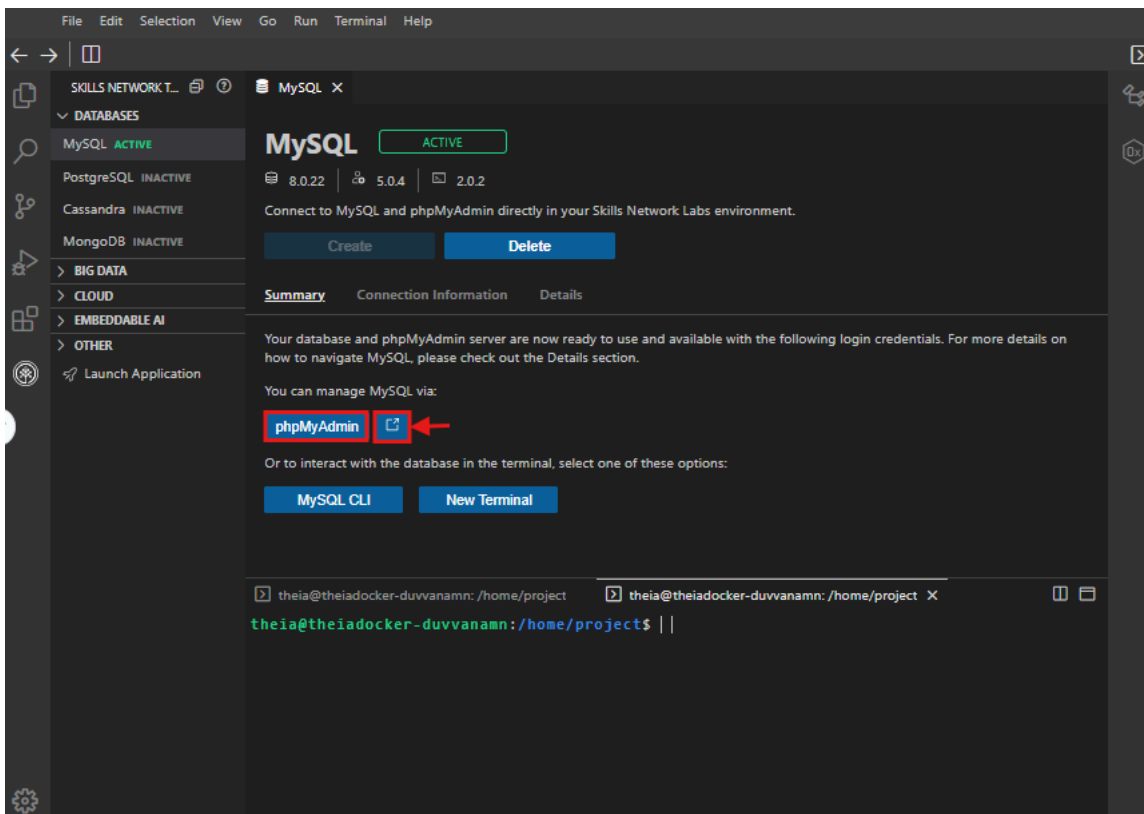
Launch phpMyAdmin

1. Click on **Skills Network Toolbox**. In the **Database** section, click **MySQL**.

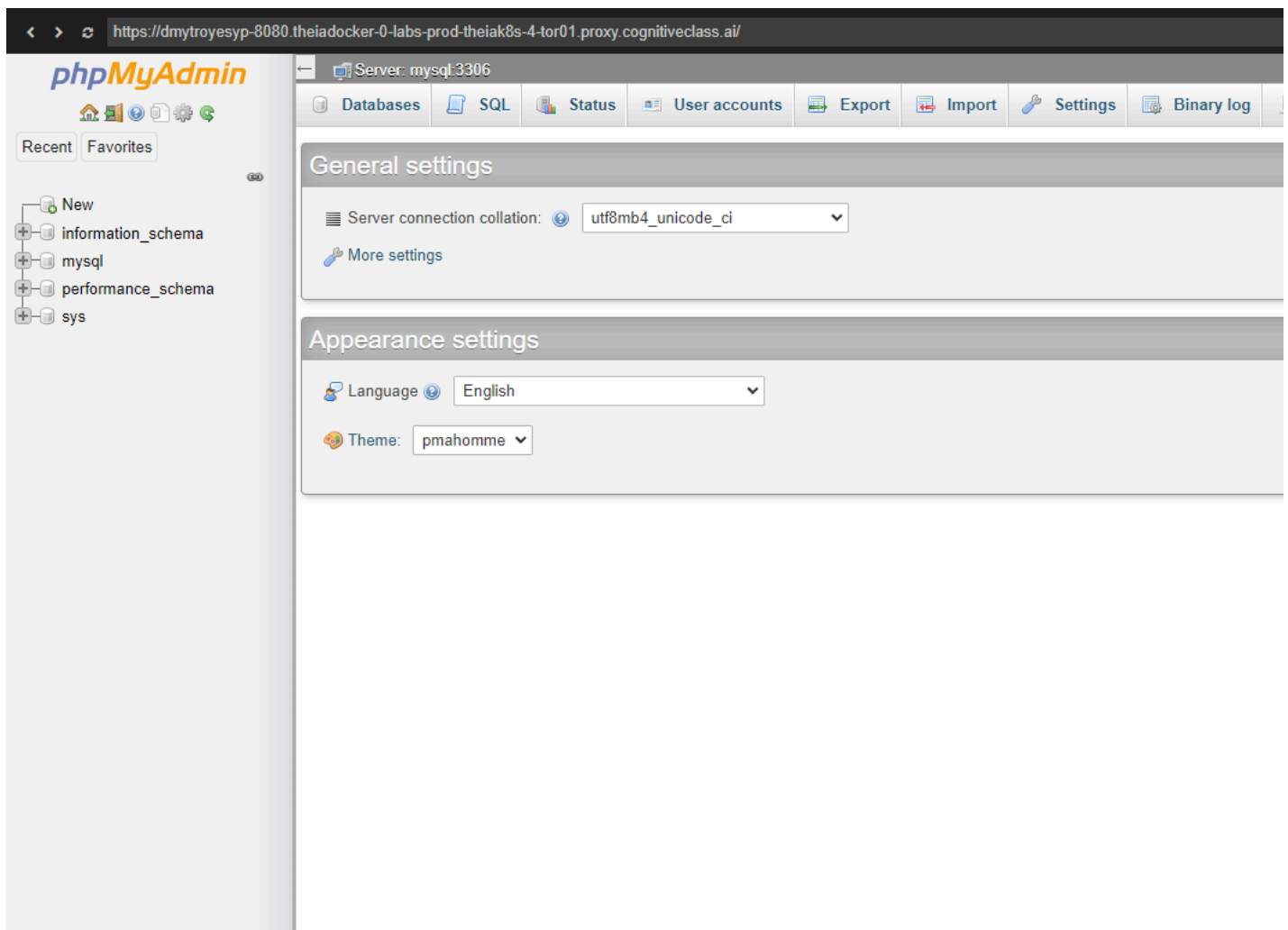
To start the MySQL, click **Create**.



2. Once **MySQL** has started, click the **phpMyAdmin** button to open **phpMyAdmin** in the same window. Alternatively, click the **toggle** button next to the phpMyAdmin button to open phpMyAdmin in a new browser tab.



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**.

Leave the default **utf8** encoding. UTF-8 is the most commonly used character encoding for content or data.

DatabasesSQLStatusUser accountsExportImportSettingsBinary logMore

Databases

Create database

CVD

utf8mb4_0900_ai_ci

Create

Database	Collation	Master replication	Action
<input type="checkbox"/> information_schema	utf8_general_ci	✓ Replicated	Check privileges
<input type="checkbox"/> mysql	utf8mb4_0900_ai_ci	✓ Replicated	Check privileges
<input type="checkbox"/> performance_schema	utf8mb4_0900_ai_ci	✓ Replicated	Check privileges
<input type="checkbox"/> sys	utf8mb4_0900_ai_ci	✓ Replicated	Check privileges

Total: 4

↑

☐ Check all

With selected: [Drop](#)

Note: Enabling the database statistics here might cause heavy traffic between the web server and the MySQL server.

[Enable statistics](#)

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**.

The screenshot shows the phpMyAdmin interface. On the left sidebar, the 'CVD' database is selected under the 'New' section. The main content area is titled 'Importing into the database "CVD"'. It includes sections for 'File to import:', 'Partial import:', 'Other options:', 'Format:', and 'Format-specific options:'. The 'File to import:' section shows a 'Choose File' button and a file name 'CVD_Datab...es_Script.sql (Max: 2,048KiB)'. The 'Partial import:' section has a checkbox for 'Allow the interruption of an import...' and a text input for 'Skip this number of queries...' set to '0'. The 'Other options:' section has a checkbox for 'Enable foreign key checks'. The 'Format:' section has a dropdown menu set to 'SQL'. The 'Format-specific options:' section has a dropdown for 'SQL compatibility mode' set to 'NONE' and a checkbox for '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 open, 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.

```

DROP TABLE IF EXISTS PATIENTS;

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0065 seconds.)

Note: #1051 Unknown table 'CVD.PATIENTS'

DROP TABLE IF EXISTS MEDICAL_HISTORY;

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0038 seconds.)

Note: #1051 Unknown table 'CVD.MEDICAL_HISTORY'

DROP TABLE IF EXISTS MEDICAL_PROCEDURES;

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0038 seconds.)

Note: #1051 Unknown table 'CVD.MEDICAL_PROCEDURES'

DROP TABLE IF EXISTS MEDICAL_DEPARTMENTS;

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0044 seconds.)

Note: #1051 Unknown table 'CVD.MEDICAL_DEPARTMENTS'

DROP TABLE IF EXISTS MEDICAL_LOCATIONS;

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0161 seconds.)

```

- 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 'CVD' database selected. The 'Table: PATIENTS' is selected, and the 'Structure' tab is active. The table structure is displayed in a table format.

#	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

Below the table structure, there are options to check all, with selected, and actions like Browse, Change, Drop, Primary, Unique, Index, and Fulltext.

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.

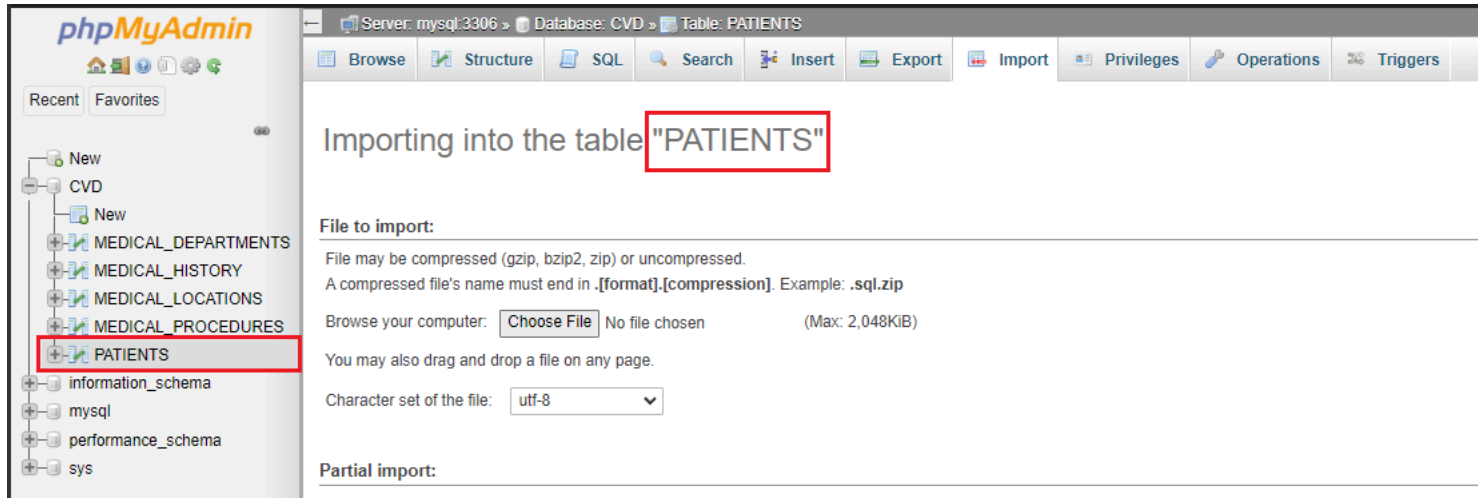
- Download the 5 CSV files below to your local machine.

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

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

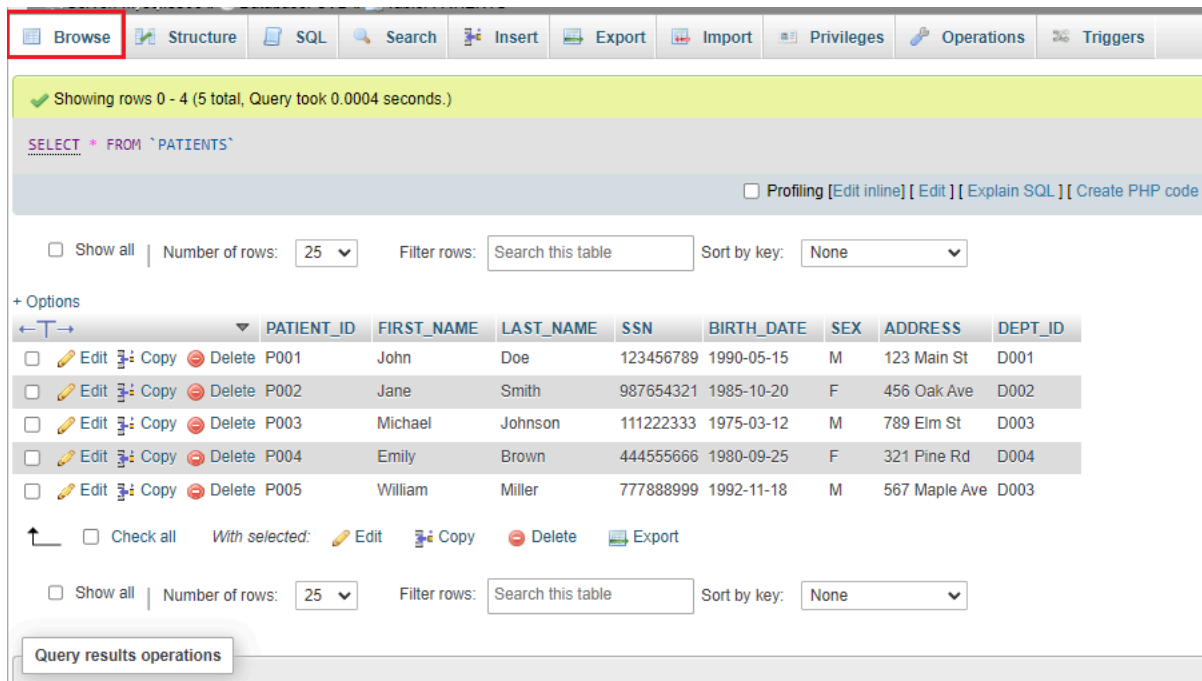
- Select the table.
- Click the Import tab.
- Browse to the location of the CSV file and click 'Go' to load the CSV file.

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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