

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								MEDICAL HISTORY			
PATIENT_ID	FIRST_NAME	LAST_NAME	SSN	BIRTH_DATE	SEX	ADDRESS	DEPT_ID	MEDICAL_HISTORY_ID	PATIENT_ID	DIAGNOSIS_DATE	DIA
P001	John	Doe	123456789	1990-05-15	M	123 Main St	D001	MH001	P001	2022-12-10	
P002	Jane	Smith	987654321	1985-10-20	F	456 Oak Ave	D002	MH002	P001	2023-07-30	
P003	Michael	Johnson	111222333	1975-03-12	M	789 Elm St	D003	MH003	P002	2023-08-01	
P004	Emily	Brown	444555666	1980-09-25	F	321 Pine Rd	D004	MH004	P003	2023-08-01	
P005	William	Miller	777888999	1992-11-18	M	567 Maple Ave	D003	MH005	P004	2023-08-01	
								MH006	P005	2023-08-02	

MEDICAL PROCEDURES					MEDICAL DEPARTMENTS		
PROCEDURE_ID	PROCEDURE_NAME	PROCEDURE_DATE	PATIENT_ID	DEPT_ID	DEPT_ID	DEPT_NAME	MANAGER_ID
PR001	Angioplasty	2023-07-30	P001	D002	D001	Angioplasty	NULL
PR002	Cardiac Catheterization	2023-08-01	P002	D002	D002	Cardiac Catheterization	NULL
PR003	Electrocardiogram	2023-08-02	P003	D003	D003	Electrocardiogram	NULL
PR004	Echocardiogram	2023-08-03	P004	D004	D004	Echocardiogram	NULL
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 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.

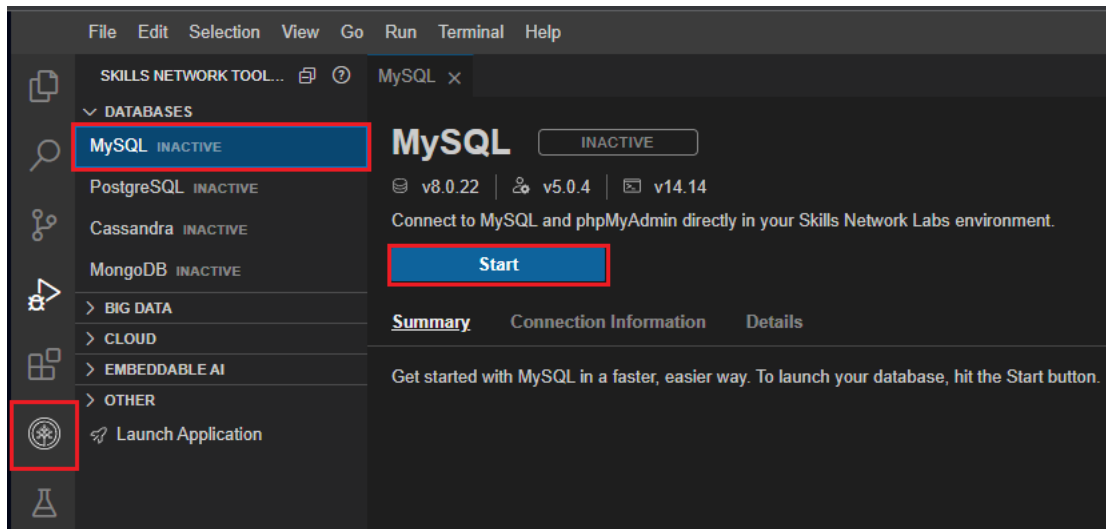
Task 1 : Create the database

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

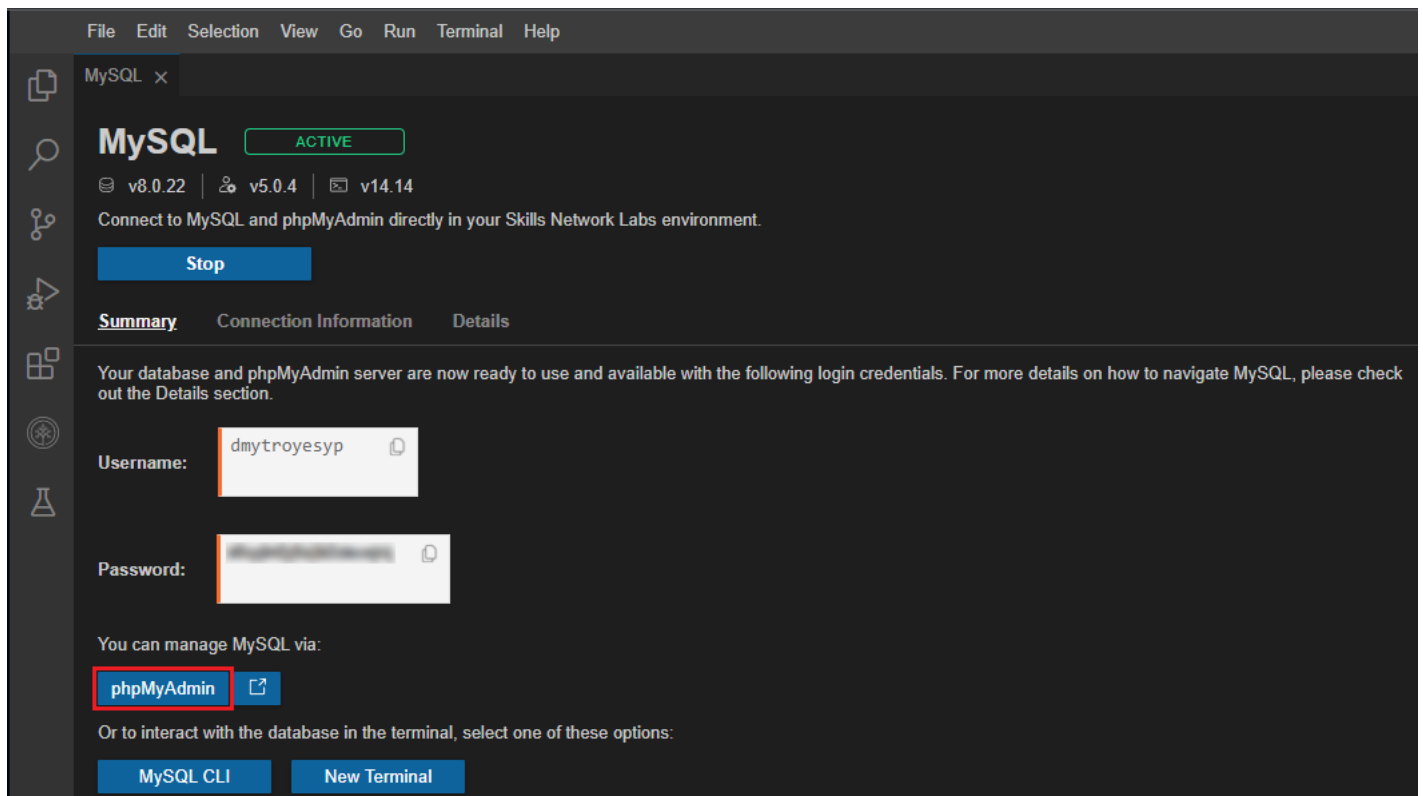
Launch phpMyAdmin

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

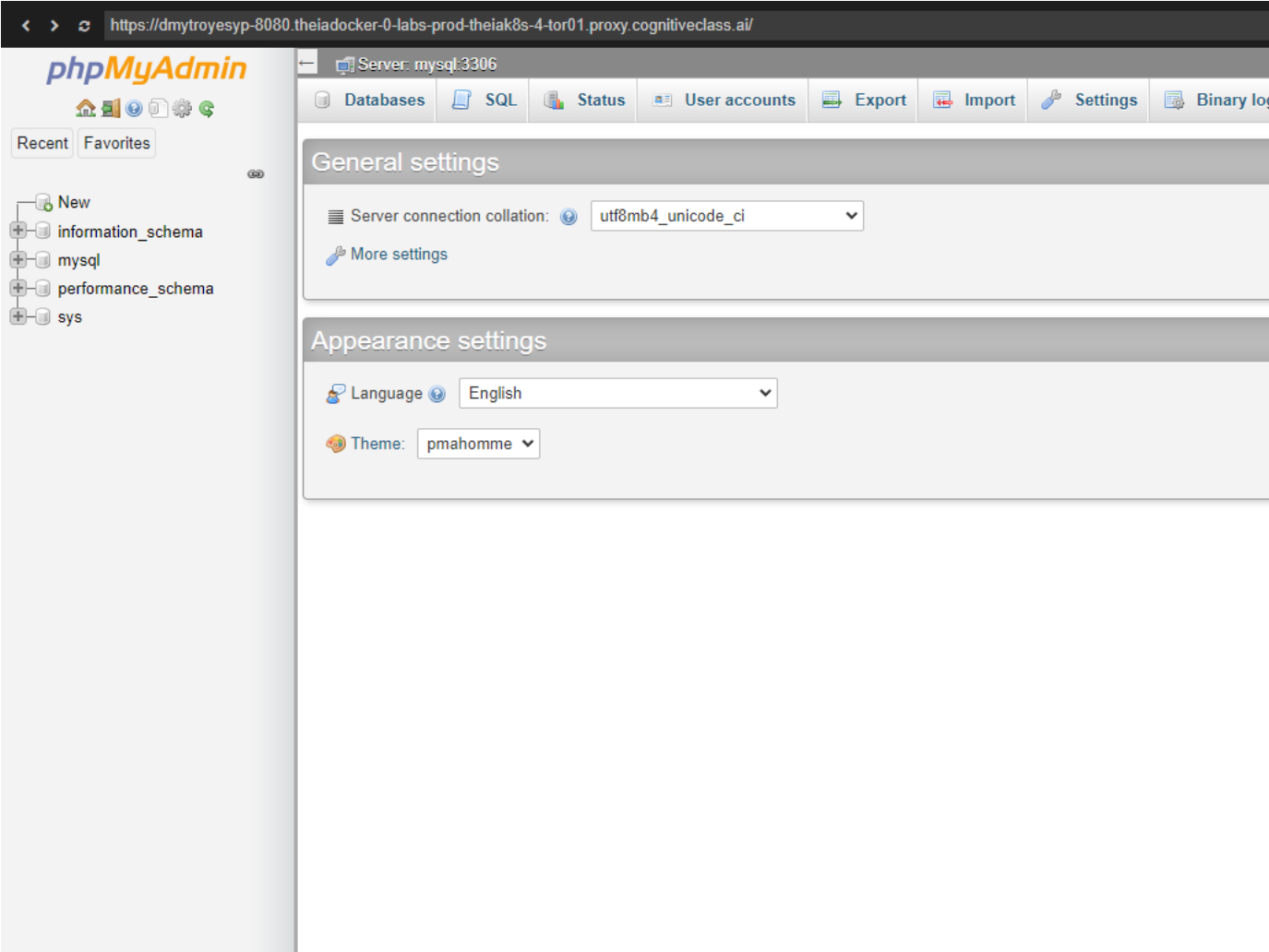
To start the MySQL, click **Start**.



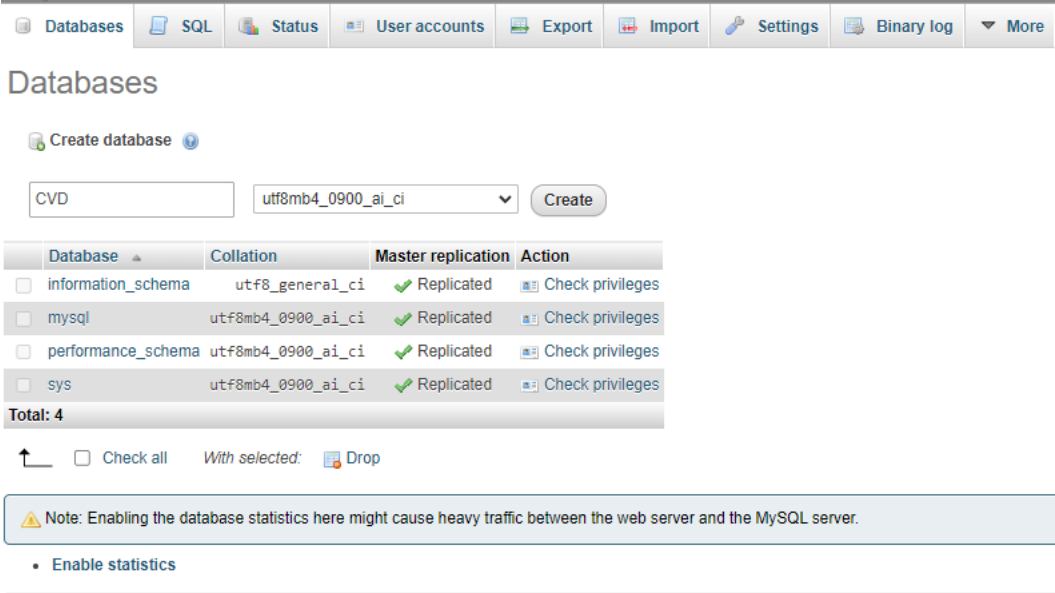
2. Once **MySQL** has started, click the **phpMyAdmin** button to open **phpMyAdmin** in the same window.



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

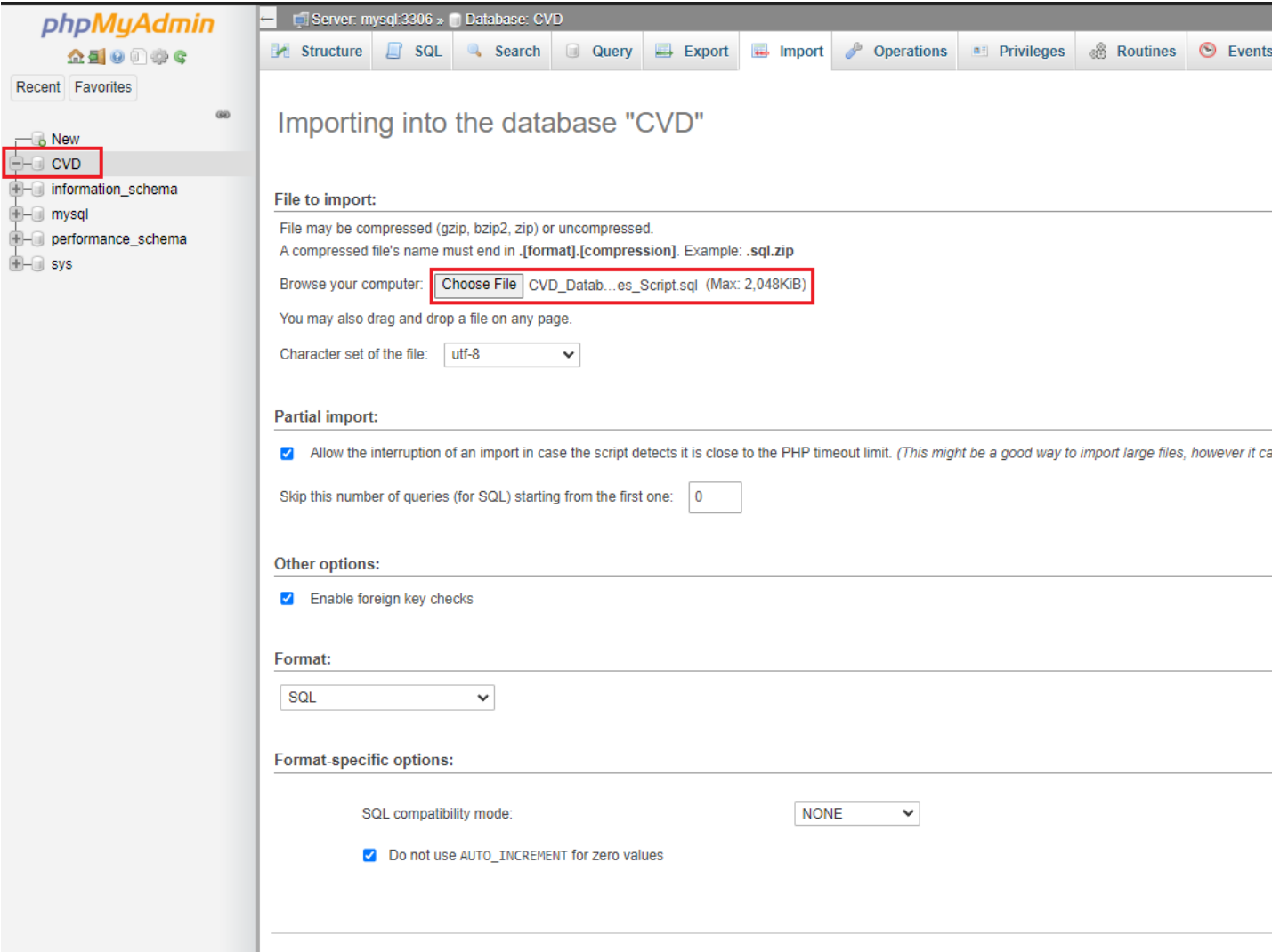
In this exercise, you will learn how to execute a script containing the CREATE TABLE commands for all the tables rather than create each table manually by typing the DDL commands in the SQL editor.

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**.



- 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 left sidebar shows the database structure with tables: MEDICAL_DEPARTMENTS, MEDICAL_HISTORY, MEDICAL_LOCATIONS, MEDICAL_PROCEDURES, and PATIENTS. The main panel displays the execution log of a script named 'CVD_Database_Create_Tables_Script.sql'. The log shows several successful queries that drop tables if they exist, followed by error messages indicating that the tables 'CVD.PATIENTS', 'CVD.MEDICAL_HISTORY', 'CVD.MEDICAL_PROCEDURES', 'CVD.MEDICAL_DEPARTMENTS', and 'CVD.MEDICAL_LOCATIONS' are unknown.

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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
[Edit inline] [Edit] [C]

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
[Edit inline] [Edit] [C]

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
[Edit inline] [Edit] [C]

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
[Edit inline] [Edit] [C]

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
[Edit inline] [Edit] [C]

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- 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 left sidebar shows the database structure. The main panel displays the 'Table structure' view for the 'PATIENTS' table. The table has 8 columns: PATIENT_ID, FIRST_NAME, LAST_NAME, SSN, BIRTH_DATE, SEX, ADDRESS, and DEPT_ID. The table structure is as follows:

#	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

At the bottom, there are options to 'Check all', 'With selected', and various 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.

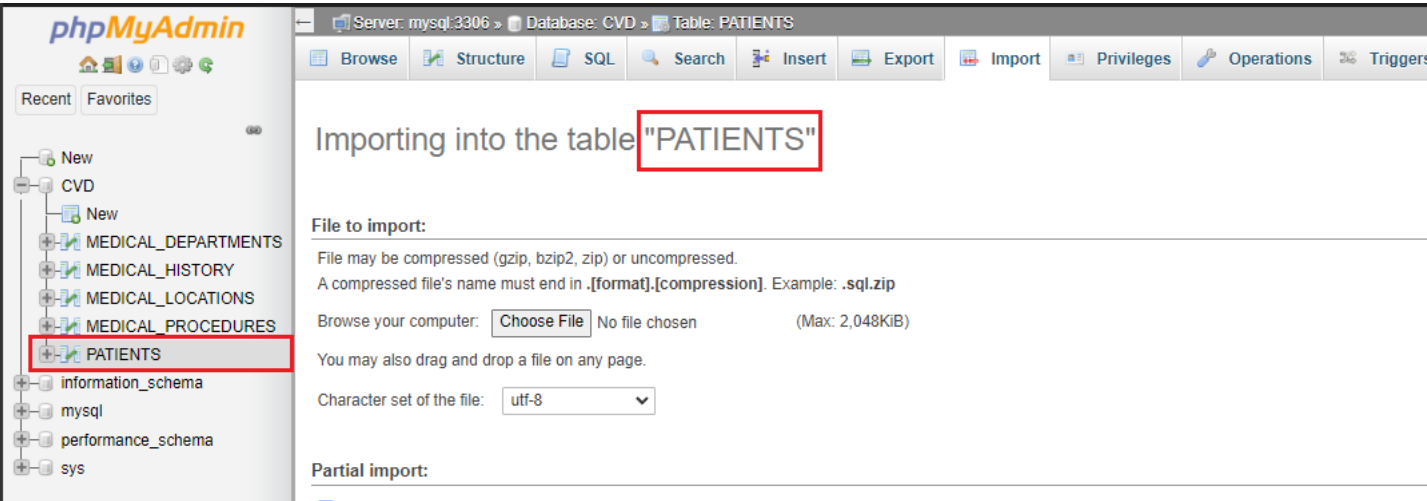
- Download the 5 CSV files below to your local machine.

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

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

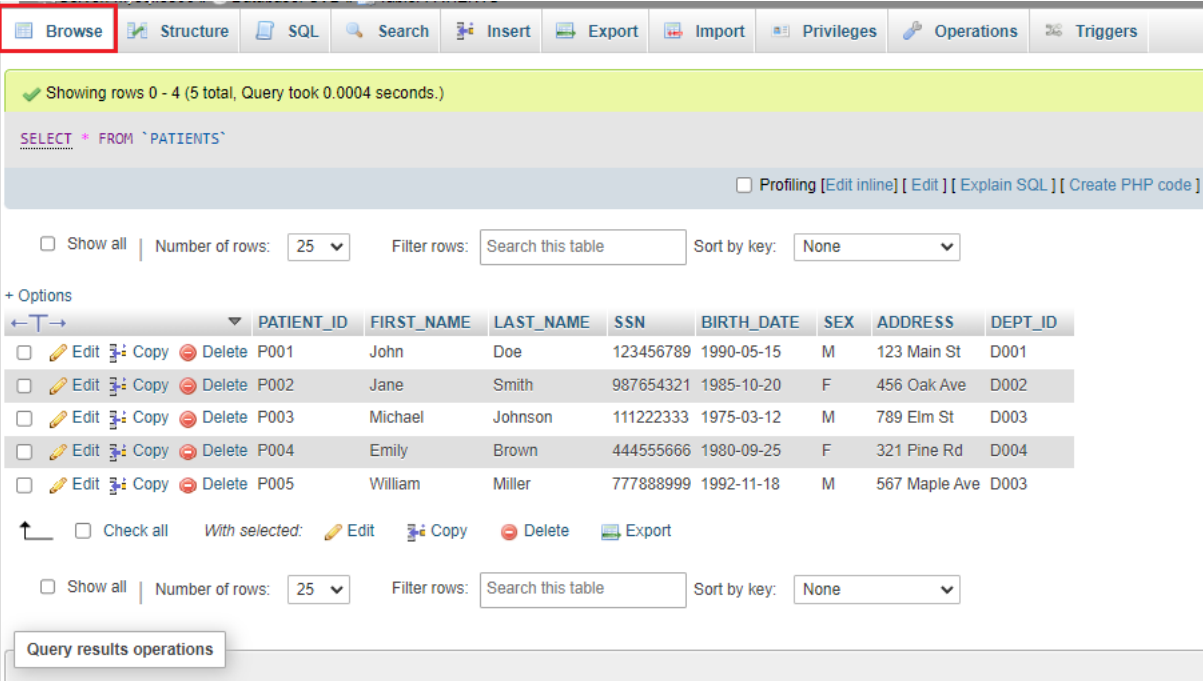
- Select the table.
- Click the Import tab.
- Browse to the location of the CSV file and click 'Go' to load the CSV file.

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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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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