

# Hands-on Lab: Working with a real world data-set using SQL in MySQL using phpMyAdmin



**Skills**  
Network

**Estimated time needed:** 20 minutes

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

## Software Used in this Lab

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 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

`Mysql_learners` database has been used in this lab.

Here you will be creating and inserting data into the below mentioned 2 tables

- 1.`chicago_public_schools`
- 2.`chicago_socioeconomic_data`

Here we will be using 2 dump files for this purpose.

[chicago\\_public\\_schools](#)

[chicago\\_socioeconomic\\_data](#)

## Task A: Create a database

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

To start the MySQL click Start.

The screenshot shows the Skills Network Labs interface. On the left, there's a sidebar with various icons: a clipboard, magnifying glass, gear, play triangle, square, and a flask. Below these are three large icons: a tree, a gear, and a flask. The main area has tabs at the top: 'Lab' (selected), 'IBMCLOUD', and 'Launch Application'. A navigation bar below includes 'File', 'Edit', 'Selection', 'View', 'Go', 'Run', 'Terminal', and 'Help'. In the center, under 'SKILLS NETWO...', there's a section for 'DATABASES' with 'MySQL INACTIVE' highlighted by a red box. Other databases listed are 'PostgreSQL INACTIVE', 'Cassandra INACTIVE', and 'MongoDB INACTIVE'. Below this is a 'BIG DATA' section with 'CLOUD' and 'OTHER' options. To the right of the MySQL entry, it says 'MySQL X' and 'INACTIVE'. It lists versions: v8.0.22, v5.0.4, and v14.14. A button labeled 'Start' is visible. Below the MySQL entry, there are tabs for 'Summary', 'Connection Information', and 'Details'. A note at the bottom says: 'Get started with MySQL in a faster, easier way. To launch your database, hit the Start button.'

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

This screenshot shows the same interface as above, but the MySQL entry is now active. The status box says 'ACTIVE' instead of 'INACTIVE'. The MySQL entry now includes a 'Stop' button. The 'Summary' tab is selected, displaying a note: 'Your database and phpMyAdmin server are now ready to use and available with the following login credentials. For more details on how to navigate MySQL, please check out the Details section.' Below this, it shows 'Username: malikas' and 'Password: [REDACTED]'. It also says 'You can manage MySQL via:' followed by a 'phpMyAdmin' button with a copy icon, which is also highlighted with a red box. At the bottom, it says 'Or to interact with the database in the terminal, select one of these options:' with buttons for 'MySQL CLI' and 'New Terminal'.

3. You will see the phpMyAdmin GUI tool.

← → ⌂ ⌂ 🔒 sandipsahajo-8080.theiadocker-27.proxy.cognitivecl

# phpMyAdmin

Recent Favorites

- + New
- + information\_schema
- + mysql
- + performance\_schema
- + sakila
- + sys

Server: mysql:3306

Databases SQL Status

## General settings

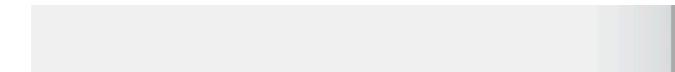
Server connection collation: utf8mb4

More settings

## Appearance settings

Language English

Theme: pmahomme



4. In the tree-view, click **New** to create a new empty database. Then enter **Mysql\_Learners** 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.

Proceed to Task B.

# Importing into the database "Mysql\_learners"

## 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:  chicago\_pu...\_schools.sql (Max: 2,048KiB)

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

Character set of the file:

## 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 is not recommended for most users.*)

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

## Other options:

Enable foreign key checks

## Format:

The screenshot shows the phpMyAdmin interface with the following details:

- Left Panel (Structure):** Shows the database tree with the following structure:
  - New
  - information\_schema
  - mysql
  - Mysql\_learners
    - New
    - chicago\_public\_schools
  - performance\_schema
  - sys
- Top Bar:** Server: mysql:3306 » Database: Mysql\_learners
- Menu Bar:** Structure, SQL, Search, Query, Export, Import, Operations
- Import Log:**
  - Import has been successfully finished, 22 queries executed. (chicago\_public\_schools.sql)
  - MySQL returned an empty result set (i.e. zero rows). (Query took 0.0008 seconds.)
  - phpMyAdmin SQL Dump -- version 5.0.4 -- https://www.phpmyadmin.net/ -- -- Host: mysql Version: 7.4.15 SET SQL\_MODE = "NO\_AUTO\_VALUE\_ON\_ZERO"
  - MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)
  - START TRANSACTION
  - MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)
  - SET time\_zone = "+00:00"
  - MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)
  - /\*!40101 SET @OLD\_CHARACTER\_SET\_CLIENT=@@CHARACTER\_SET\_CLIENT \*/
  - MySQL returned an empty result set (i.e. zero rows). (Query took 0.0005 seconds.)
  - /\*!40101 SET @OLD\_CHARACTER\_SET\_RESULTS=@@CHARACTER\_SET\_RESULTS \*/

The tables are created and the data is loaded successfully. Repeat the same operation with the other dump file to create and load the table.

## Problems

### Problem 1

How many Elementary Schools are in the dataset?

- ▶ Click here for a hint
- ▶ Click here for another hint
- ▶ Click here for the solution.

### Problem 2

What is the highest Safety Score?

- ▶ Click here for a hint
- ▶ Click here for the solution.

### Problem 3

Which schools have highest Safety Score?

- ▶ Click here for the solution.

### Problem 4

What are the top 10 schools with the highest “Average Student Attendance”?

- Click here for the solution.

### Problem 5

Retrieve the list of 5 Schools with the lowest Average Student Attendance sorted in ascending order based on attendance

- Click here for the solution.

### Problem 6

Now remove the '%' sign from the above result set for Average Student Attendance column

- Click here for a hint.
- Click here for the solution.

### Problem 7

Which Schools have Average Student Attendance lower than 70%?

- Click here for a hint.
- Click here for another hint
- Click here for the solution.

### Problem 8

Get the total College Enrollment for each Community Area

- Click here for a hint.
- Click here for another hint.
- Click here for the solution.

### Problem 9

Get the 5 Community Areas with the least total College Enrollment sorted in ascending order

- Click here for a hint.
- Click here for the solution.

### Problem 10

List 5 schools with lowest safety score.

- Click here for the solution.

### Problem 11

Get the hardship index for the community area which has College Enrollment of 4368

- Click here for the solution.

### Problem 12

Get the hardship index for the community area which has the school with the highest enrollment.

- Click here for the solution.

## Author(s)

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