Hands-on Lab: Joins in MySQL using phpMyAdmin

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.

Objectives

After completing this lab, you will be able to:

1. Determine the correct type of join to use for a given problem.

2. Write and execute joins to query data from multiple tables.

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 3 tables

1.chicago_public_schools
2.chicago_socioeconomic_data
3.chicago_crime

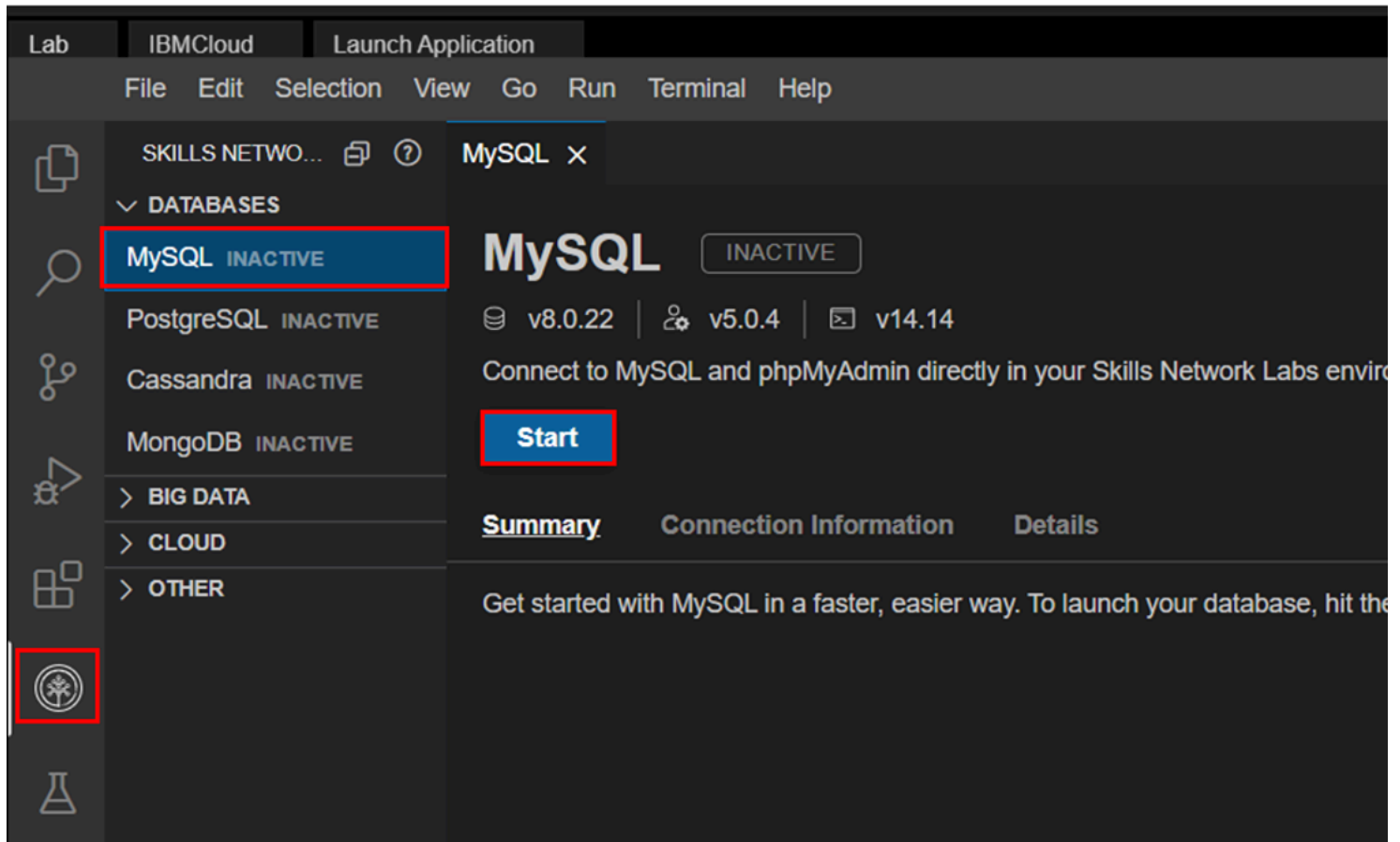Here you will be using 3 dump files for this purpose.

[chicago_public_schools](#)
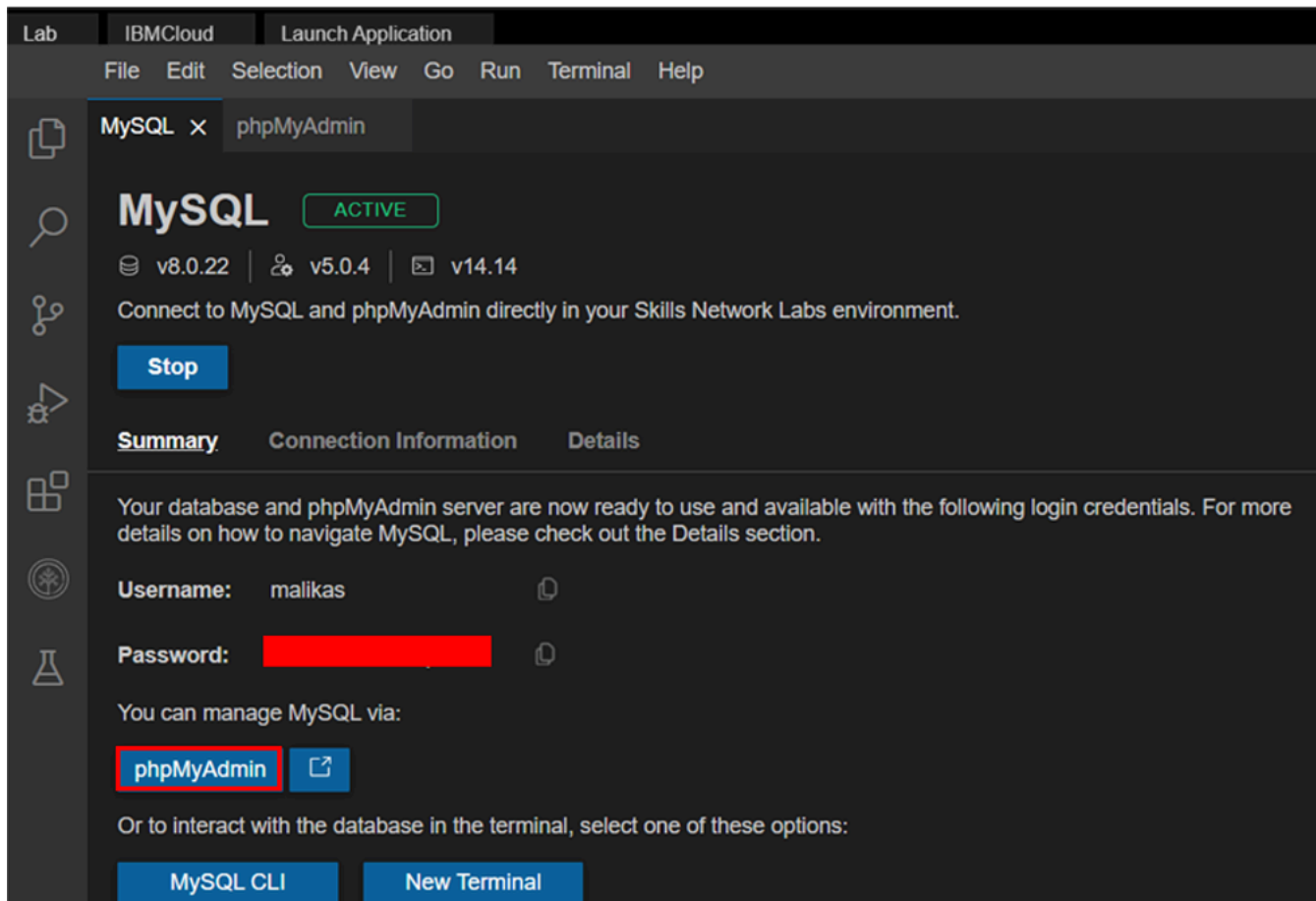
[chicago_crime](#)

[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**.

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

3. You will see the phpMyAdmin GUI tool.

← → C ⌂ 🔒 sandipsahajo-8080.theiadocker-27.proxy.cognitivecla

phpMyAdmin

🏠 📇 ❓ 📄 ⚙️ 🔄

Recent Favorites

🔗

──🗃️ New
➕─🗃️ information_schema
➕─🗃️ mysql
➕─🗃️ performance_schema
➕─🗃️ sakila
➕─🗃️ sys

🖥️ Server: mysql:3306

🗃️ **Databases**   📜 **SQL**   📊 **Status**

General settings
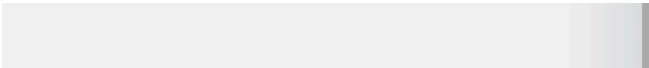
≣ Server connection collation: ❓   utf8mb4

🔧 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.

| Databases | SQL | Status | User accounts | Export | Import | Settings | Binary log | R |

Databases

Create database

| Mysql_learners | utf8mb4_0900_ai_ci | | Create |

	Database ▲	Collation	Master replication	Action
☐	information_schema	utf8_general_ci	✔ Replicated	▣ Check privileges
☐	mysql	utf8mb4_0900_ai_ci	✔ Replicated	▣ Check privileges
☐	performance_schema	utf8mb4_0900_ai_ci	✔ Replicated	▣ Check privileges
☐	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**

Load the dump files one by one into the database **Mysql_learners** by clicking the **Import** tab and choose the file.
Click on **Go** button.

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: [Choose File] chicago_pu..._schools.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, howe*

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

Other options:

☑ Enable foreign key checks

Format:

[▌Console   ⌄]

phpMyAdmin

Recent   Favorites

- New
- information_schema
- mysql
- Mysql_learners
  - New
  - chicago_public_schools
- performance_schema
- sys

Server: mysql:3306 » Database: Mysql_learners

Structure | SQL | Search | Query | Export | Import | Operations

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: mysq
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 2 dump files to create and load the tables.

You will see a screen as below

```
                                ┌─ Structure   ☐ SQL   ◀ Search   ☐ Query   ☐ Export   ☐ Import   ✎ Operation
  🏠 ▣ ❶ ☐ ⚙ ⟳
                                  `PERCENT_OF_HOUSING_CROWDED`, `PERCENT_HOUSEHOLDS_BELOW_POVERTY`, `PERCENT_AGED_16__UNE
  Recent  Favorites               `PERCENT_AGED_UNDER_18_OR_OVER_64`, `PER_CAPITA_INCOME`, `HARDSHIP_INDEX`) VALUES ('1'
 ┌────────────────────────┐       Ridge', '7.8', '17.2', '8.8', '20.8', '38.5', 23040, '46'), ('3', 'Uptown', '3.8', '24.
 │ There are no favorite tables.  '8.2', '13.4', '25.5', 37524, '17'), ('5', 'North Center', '0.3', '7.5', '5.2', '4.5',
 └────────────────────────┘       60058, '5'), ('7', 'Lincoln Park', '0.8', '12.3', '5.1', '3.6', '21.5', 71551, '2'), (
      └─ 🗋 New
  ⊞─ 🗋 information_schema
  ⊞─ 🗋 mysql
  ⊟─ 🗋 Mysql_learners
         └─ 🗋 New
         ⊞─ 📈 chicago_crime
         ⊞─ 📈 chicago_public_schools
         ⊞─ 📈 chicago_socioeconomic_data
  ⊞─ 🗋 performance_schema
  ⊞─ 🗋 sys
```

✅ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0002 seconds.)

COMMIT

✅ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */

✅ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0002 seconds.)

/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */

✅ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */

■ Console

Exercise

Problem 1

List the case number, type of crime and community area for all crimes in community area number 18.

▼ Hint 1
Use tables chicago_public_schools and chicago_socioeconomic_data.
▼ Hint 2
Use an inner join.
▼ Hint 3
The column PRIMARY_TYPE contains the crime type.

Problem 2

List all crimes that took place at a school. Include case number, crime type and community name.

▼ Hint 1
Use tables chicago_crime and chicago_socioeconomic_data.
▼ Hint 2
Use a left join or a right join.
▼ Hint 3
The column LOCATION_DESCRIPTION will help you find the crime location.

Problem 3

For the communities of Oakland, Armour Square, Edgewater and CHICAGO list the associated community_area_numbers and the case_numbers.

▼ Hint 1

Use tables chicago_crime and chicago_socioeconomic_data.
▼ Hint 2
Use the union operator with LEFT and RIGHT outer joins.
▼ Hint 3
Use COMMUNITY_AREA_NUMBER from chicago_socioeconomic_data.

Congratulations! You have completed this lab, and you are ready for the next topic.

Author(s)

[Lakshmi Holla](#)

[Malika Singla](#)