

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**.

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 has '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 with 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 'MySQL X' status is now 'ACTIVE' in green. The 'Start' button is now a 'Stop' button. The MySQL entry now includes a 'phpMyAdmin' button, which is also highlighted with a red box. The rest of the interface remains the same, including the sidebar icons and the note at the bottom.

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

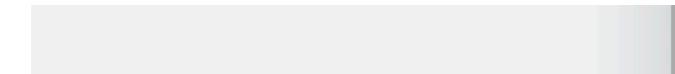
Server connection collation: utf8mb4

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.

The screenshot shows the MySQL Databases interface. At the top, there is a navigation bar with tabs: Databases (selected), SQL, Status, User accounts, Export, Import, Settings, Binary log, and R. Below the navigation bar, the title "Databases" is displayed. A "Create database" button is visible. In the main area, there is a search bar with "Mysql_learners" and a dropdown menu set to "utf8mb4_0900_ai_ci". A "Create" button is next to the dropdown. A table lists existing databases:

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

Below the table, there are buttons for "Check all" and "Drop". A note at the bottom says: "⚠ Note: Enabling the database statistics here might cause heavy traffic between the web server and the MySQL server." It also includes a link to "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: 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.*)

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

Other options:

Enable foreign key checks

Format:

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: 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 2 dump files to create and load the tables.

You will see a screen as below

```

`PERCENT_OF_HOUSING_CROWDED`, `PERCENT_HOUSEHOLDS_BELOW_POVERTY`, `PERCENTAGED_16_UNI  

`PERCENTAGED_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  

'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'), (  


```

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 */
```

Exercise

Problem 1

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

- ▶ Hint 1
- ▼ Hint 2
- Use an inner join.
- ▶ Hint 3

Problem 2

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

- ▶ Hint 1
- ▶ Hint 2
- ▶ Hint 3

Problem 3

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

- ▶ Hint 1
- ▶ Hint 2
- ▶ Hint 3

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

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