

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](#)

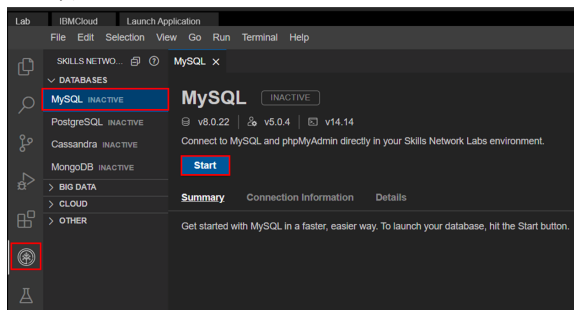
[chicago_crime](#)

[chicago_socioeconomic_data](#)

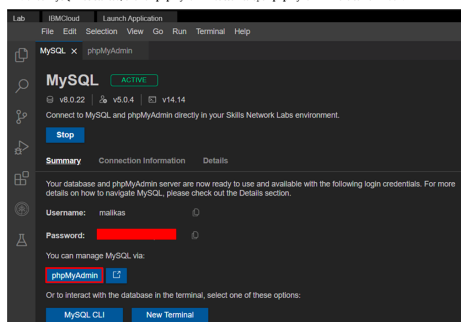
Task A: Create a database

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

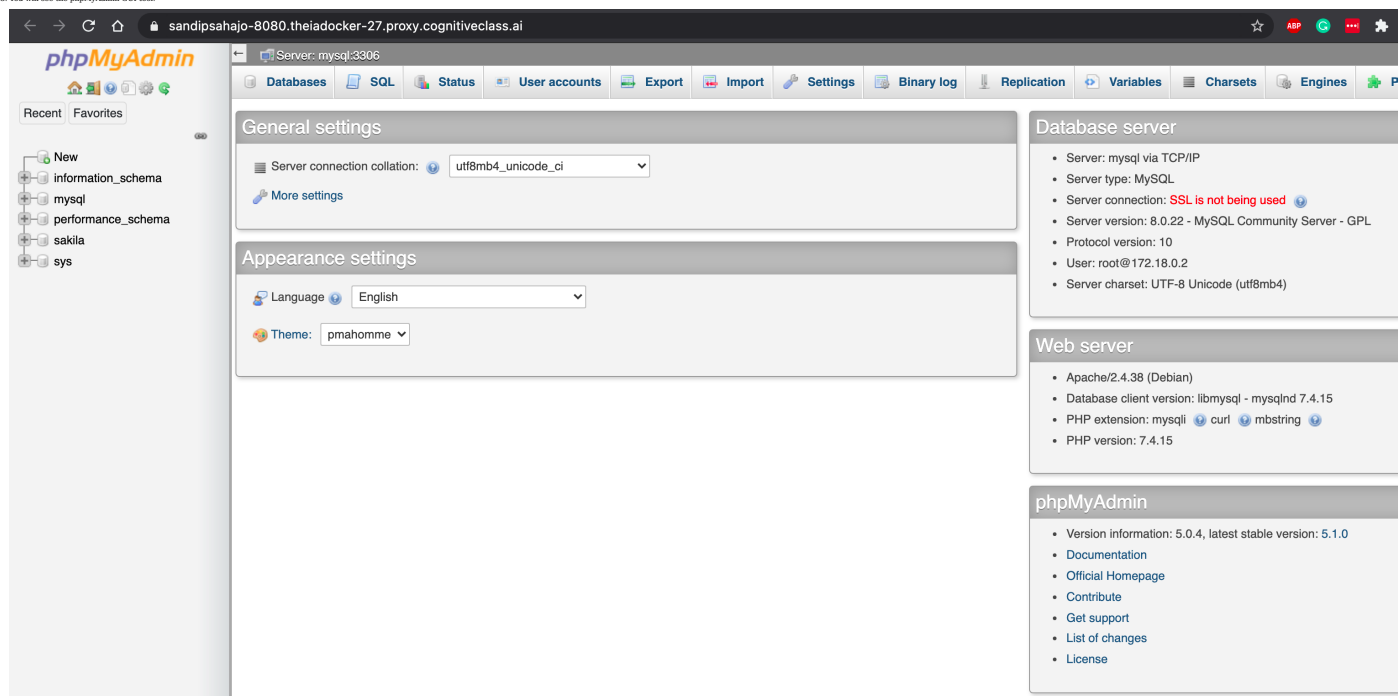
To start the MySQL, click **Start**.



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



3. You will see the phpMyAdmin GUI tool.



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.

DatabasesSQLStatusUser accountsExportImportSettingsBinary logReplicationVariablesCharsetsMore

Create database

MySQL_learnersutf8mb4_0900_ai_ciCreate

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

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: chicao_gu_...schools.sql (Max: 2.048KB)

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 can break transactions.)

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

Screen: mysql:2060 - Database: MySQL_learners

StructureSQLSearchQueryExportImportOperationsPrivilegesRoutinesEventsTriggersDesigner

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:13306 -- Generation Time: Nov 22, 2021 at 12:24 PM -- Server version: 8.0.22 -- PHP Version: 7.4.15 SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO"

[Edit inline][Edit][Create PHP code]

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

START TRANSACTION

[Edit inline][Edit][Create PHP code]

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

SET time_zone = "+00:00"

[Edit inline][Edit][Create PHP code]

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

/*140181 SET @OLD_CHARACTER_SET_CLIENT=@CHARACTER_SET_CLIENT */

[Edit inline][Edit][Create PHP code]

MySQL returned an empty result set (i.e. zero rows) (Query took 0.0005 seconds)

/*140181 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

Recent Favorites

There are no favorite tables

New

information_schema

mysql

MySQL_learners

New

chicago_crime

chicago_public_schools

chicago_socioeconomic_data

performance_schema

sys

Screen: mysql:2060 - Database: MySQL_learners

StructureSQLSearchQueryExportImportOperationsPrivilegesRoutinesEventsTriggersDesigner

PERCENT_OF_HOUSING_CROWDED", "PERCENT_HOUSEHOLDS_BELOW_POVERTY", "PERCENT_AGED_16_UNEMPLOYED", "PERCENT_AGED_25_WITHOUT_HIGH_SCHOOL_DIPLOMA", "PERCENT_AGED_UNDER_18_OR_OVER_64", "PER_CAPITA_INCOME", "HARDSHIP_INDEX" VALUES ('1', 'Rogers Park', '7.7', '23.0', '8.7', '18.2', '27.5', 23939, '39'), ('2', 'Newark Ridge', '7.8', '11.2', '8.8', '26.8', '18.5', 23049, '46'), ('3', 'Uptown', '5.0', '24.0', '9.9', '11.0', '22.2', 25792, '20'), ('4', 'Lincoln Square', '5.4', '18.9', '8.2', '13.4', '25.5', 37524, '17'), ('5', 'North Center', '9.3', '7.5', '5.2', '4.5', '26.2', 57123, '6'), ('6', 'Lake View', '5.1', '11.4', '4.9', '2.6', '17.0', 60058, '5'), ('7', 'Lincoln Park', '0.8', '12.3', '5.1', '3.6', '21.5', 75551, '2'), ('8', 'Near North Side', '1.9', '12.9', '7.0', '2.6', '22.0', 88669, '1'), ('9',

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

COMMIT

[Edit inline][Edit][Create PHP code]

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

/*140181 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */

[Edit inline][Edit][Create PHP code]

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

/*140181 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */

[Edit inline][Edit][Create PHP code]

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

/*140181 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */

[Edit inline][Edit][Create PHP code]

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)

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Changelog

Date	Version	Changed by	Change Description
2023-05-04	0.4	Rahul Jaideep	Updated Markdown file
2023-05-11	0.3	Appalabhattula Hema	Updated hint
2023-04-07	0.2	Malika Singla	Updated screenshot
2022-02-10	0.1	Lakshmi Holla, Malika Singla	Initial Version

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