



Helvetica N...



Step 1 of 7


Skills
Network

Hands-on Lab: Create Tables using SQL Scripts and Load Data into Tables 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.

Database Used in this Lab

The database used in this lab is an internal database. You will be working on a sample HR database. This HR database schema consists of 5 tables called **EMPLOYEES**, **JOB_HISTORY**, **JOBS**, **DEPARTMENTS** and **LOCATIONS**. Each table has a few rows of sample data. The following diagram shows the tables for the HR database:

SAMPLE HR DATABASE TABLES

EMPLOYEES

EMP_ID	F_NAME	L_NAME	SSN	B_DATE	SEX	ADDRESS	JOB_ID	SALARY	MANAGER_ID	DEP_ID
E1001	John	Thomas	123456	1976-01-09	M	5631 Rice, OakPark,IL	100	100000	30001	2
E1002	Alice	James	123457	1972-07-31	F	980 Berry In, Elgin,IL	200	80000	30002	5
E1003	Steve	Wells	123458	1980-08-10	M	291 Springs, Gary,IL	300	50000	30002	5

JOB_HISTORY

EMPL_ID	START_DATE	JOBS_ID	DEPT_ID
E1001	2000-01-30	100	2
E1002	2010-08-16	200	5
E1003	2016-08-10	300	5

JOBS

JOB_IDENT	JOB_TITLE	MIN_SALARY	MAX_SALARY
100	Sr. Architect	60000	100000
200	Sr.SoftwareDeveloper	60000	80000
300	Jr.SoftwareDeveloper	40000	60000

DEPARTMENTS

DEPT_ID_DEP	DEP_NAME	MANAGER_ID	LOC_ID
2	Architect Group	30001	L0001
5	Software Development	30002	L0002
7	Design Team	30003	L0003
5	Software	30004	L0004

LOCATIONS

LOCT_ID	DEP_ID_LOC
L0001	2
L0002	5
L0003	7

Objectives

After completing this lab, you will be able to use phpMyAdmin with MySQL to:

- Create a database.
- Create tables using SQL scripts
- Load data into tables

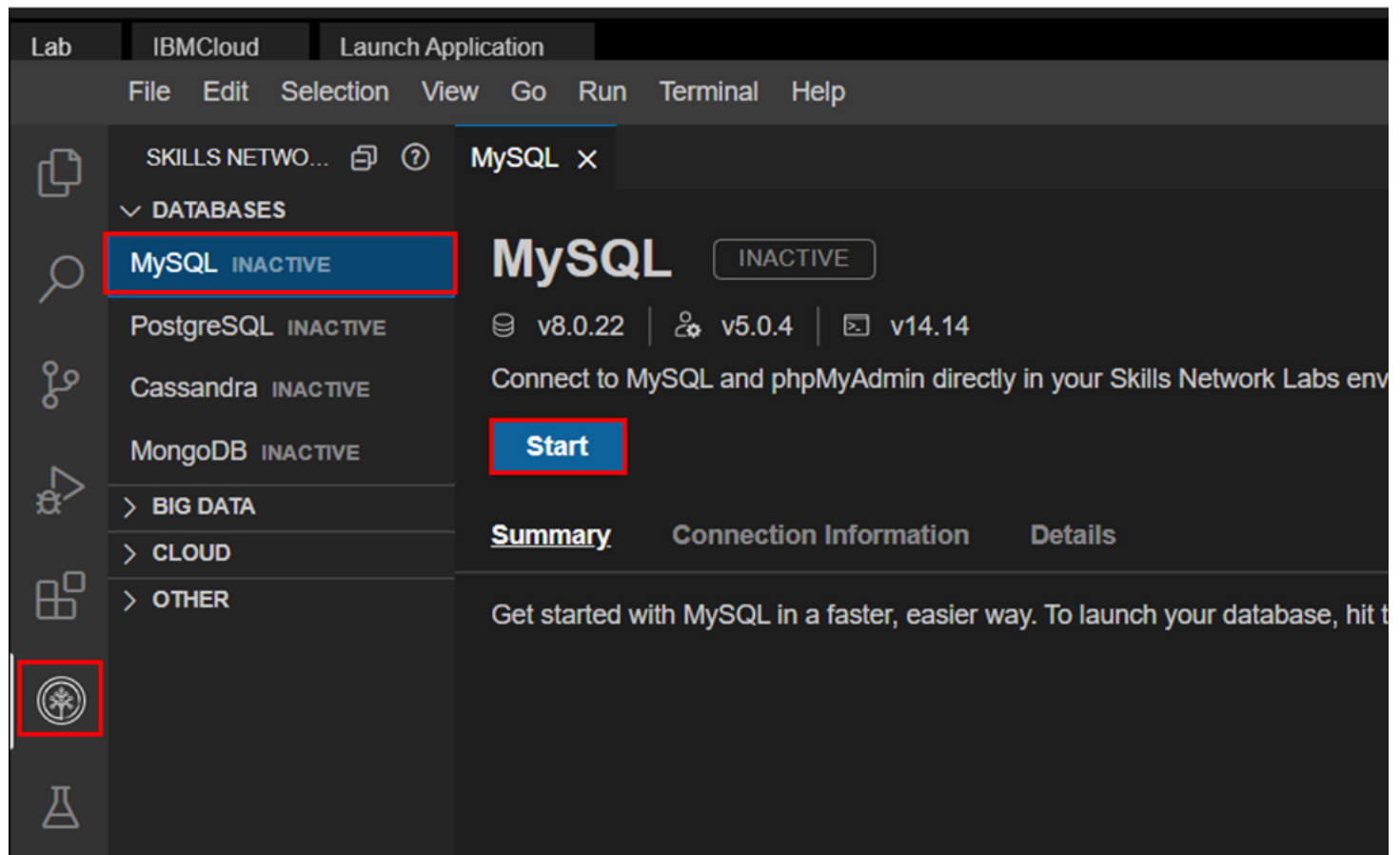
Exercise

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

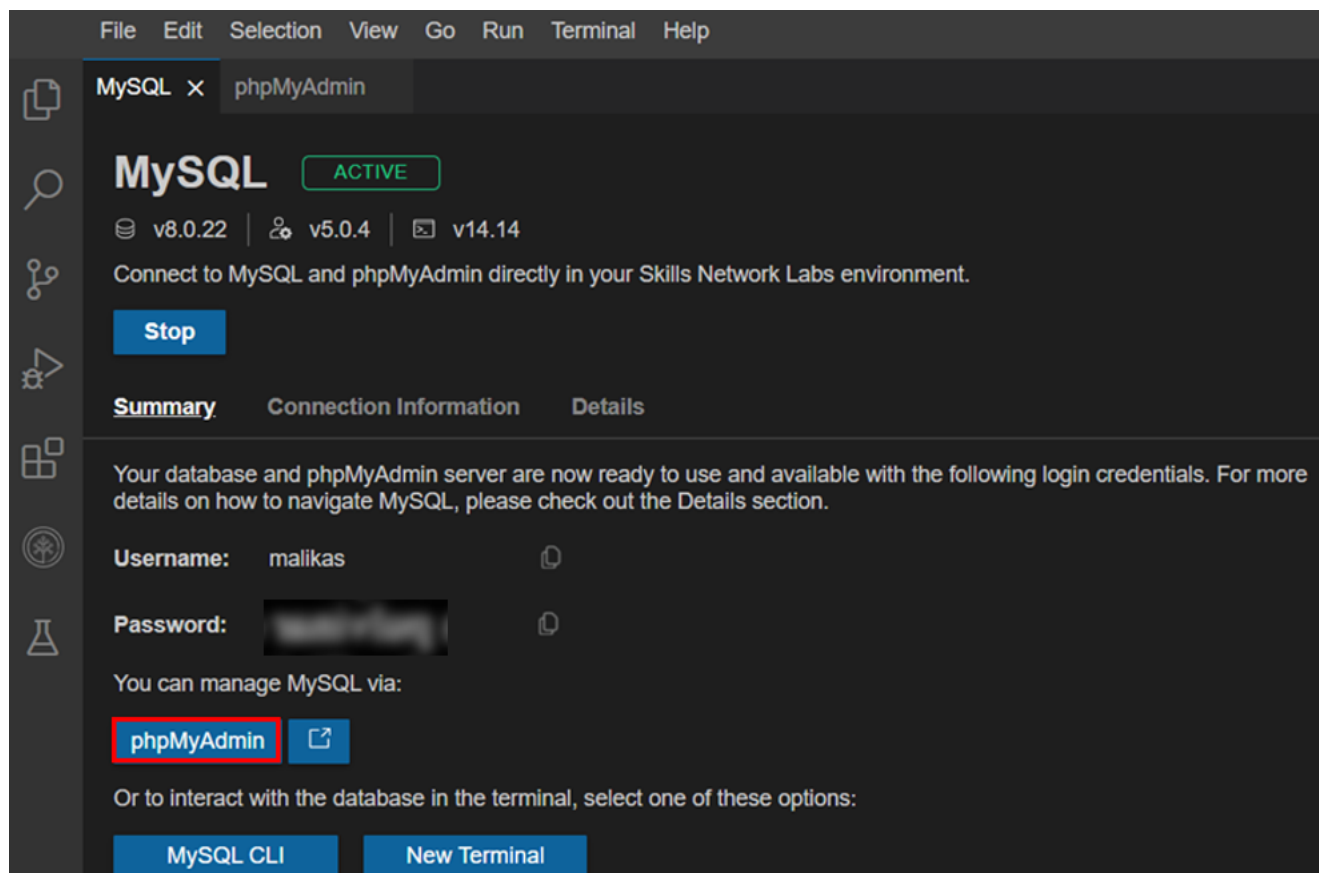
Task A: Create a database

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.



The screenshot shows a web interface for MySQL and phpMyAdmin. At the top, there is a menu bar with 'File', 'Edit', 'Selection', 'View', 'Go', 'Run', 'Terminal', and 'Help'. Below the menu, the title bar shows 'MySQL x phpMyAdmin'. The main content area has a dark theme. It features a 'MySQL' header with an 'ACTIVE' status indicator. Below this, it shows version information: 'v8.0.22 | v5.0.4 | v14.14'. A message states: 'Connect to MySQL and phpMyAdmin directly in your Skills Network Labs environment.' There is a blue 'Stop' button. Below this, there are tabs for 'Summary', 'Connection Information', and 'Details'. The 'Summary' tab is active, displaying a message: '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.' It lists the 'Username: malikas' and 'Password: [REDACTED]'. Below this, it says 'You can manage MySQL via:' and shows a button for 'phpMyAdmin' with a link icon. At the bottom, it says 'Or to interact with the database in the terminal, select one of these options:' and provides two buttons: 'MySQL CLI' and 'New Terminal'.

3. You will see the phpMyAdmin GUI tool.

The screenshot displays the phpMyAdmin web interface. The browser's address bar shows the URL: `sandipsahajo-8080.theiadocker-27.proxy.cognitivecl`. The interface is divided into a left sidebar and a main content area.

Left Sidebar:

- Logo: **phpMyAdmin**
- Navigation icons: Home, Recent, Favorites, Servers, Settings, and a green circular icon.
- Buttons: **Recent** and **Favorites**.
- Database list:
 - New (with a green plus icon)
 - information_schema (with a plus icon)
 - mysql (with a plus icon)
 - performance_schema (with a plus icon)
 - sakila (with a plus icon)
 - sys (with a plus icon)

Main Content Area:

The top of the main area shows the server connection: **Server: mysql:3306**. Below this are three tabs: **Databases** (selected), **SQL**, and **Status**.

General settings

- Server connection collation: **utf8mb4** (with a help icon).
- [More settings](#) (with a key icon).

Appearance settings

- Language: **English** (with a help icon).
- Theme: **pmahomme** (with a dropdown arrow).

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

Create database ?

HR utf8mb4_0900_ai_ci Create

Database	Collation	Master replication	Action
<input type="checkbox"/> information_schema	utf8_general_ci	✓ Replicated	Check privileges
<input type="checkbox"/> mysql	utf8mb4_0900_ai_ci	✓ Replicated	Check privileges
<input type="checkbox"/> Mysql_learners	utf8mb4_0900_ai_ci	✓ Replicated	Check privileges
<input type="checkbox"/> performance_schema	utf8mb4_0900_ai_ci	✓ Replicated	Check privileges
<input type="checkbox"/> sys	utf8mb4_0900_ai_ci	✓ Replicated	Check privileges

Total: 5

↑ ☐ 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](#)

Console

Exercise 1: Create tables using SQL scripts

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.

1. Download the script file to your computer:

- [HRDatabaseCreateTablesScript.sql](#)

- Select the HR database. Later click on the Import tab.
- Click on **choose file**. Browse for the file and upload it .
- Later scroll down and click on **Go**.

The screenshot shows the phpMyAdmin web interface. On the left sidebar, the 'HR' database is selected and highlighted with a red box. The main panel displays the 'Import' tab, titled 'Importing into the database "HR"'. Under the 'File to import:' section, a red box highlights the 'Choose File' button and the file name 'HR_Databa...es_Script.sql (Max: 2,048KiB)'. Below this, there is a text input for 'Character set of the file:' set to 'utf-8'. The 'Partial import:' section has a checked checkbox for 'Allow the interruption of an import in case the script detects it is close to the PHP timeout limit. (This)' and a text input for 'Skip this number of queries (for SQL) starting from the first one:' set to '0'. The 'Other options:' section has a checked checkbox for 'Enable foreign key checks'. The 'Format:' section has a dropdown menu set to 'SQL'. At the bottom, there is a 'Console' tab.

- The script then gets imported successfully.

The screenshot displays the phpMyAdmin interface for a MySQL server (mysql:3306) connected to the HR database. The left sidebar shows the database structure with the HR database selected, containing tables: DEPARTMENTS, EMPLOYEES, JOBS, JOB_HISTORY, and LOCATIONS. The main panel shows the 'Structure' tab with a list of tables and their definitions. The 'Import' button is highlighted in the top navigation bar. The console shows the following messages:

- Import has been successfully finished, 10 queries executed. (HR_Database_Create_Tables_Script.sql)
- MySQL returned an empty result set (i.e. zero rows). (Query took 0.0033 seconds.)
- `DROP TABLE IF EXISTS EMPLOYEES`
- Note: #1051 Unknown table 'HR.EMPLOYEES'
- MySQL returned an empty result set (i.e. zero rows). (Query took 0.0024 seconds.)
- `DROP TABLE IF EXISTS JOB_HISTORY`
- Note: #1051 Unknown table 'HR.JOB_HISTORY'
- MySQL returned an empty result set (i.e. zero rows). (Query took 0.0051 seconds.)
- `DROP TABLE IF EXISTS JOBS`
- Note: #1051 Unknown table 'HR.JOBS'
- Console: returned an empty result set (i.e. zero rows). (Query took 0.0037 seconds.)

- Click on any of the tables and you will see its Table Definition (that is, its list of columns, data types, etc).

The screenshot shows the phpMyAdmin interface with the 'EMPLOYEES' table selected in the 'HR' database. The 'Table structure' tab is active, displaying the following table structure:

#	Name	Type	Collation	Attributes	Null	Default	Comment
1	EMP_ID	char(9)	utf8mb4_0900_ai_ci		No	None	
2	F_NAME	varchar(15)	utf8mb4_0900_ai_ci		No	None	
3	L_NAME	varchar(15)	utf8mb4_0900_ai_ci		No	None	
4	SSN	char(9)	utf8mb4_0900_ai_ci		Yes	NULL	
5	B_DATE	date			Yes	NULL	
6	SEX	char(1)	utf8mb4_0900_ai_ci		Yes	NULL	
7	ADDRESS	varchar(30)	utf8mb4_0900_ai_ci		Yes	NULL	
8	JOB_ID	char(9)	utf8mb4_0900_ai_ci		Yes	NULL	
9	SALARY	decimal(10,2)			Yes	NULL	
10	MANAGER_ID	char(9)	utf8mb4_0900_ai_ci		Yes	NULL	
11	DEP_ID	char(9)	utf8mb4_0900_ai_ci		No	None	

Below the table structure, there are options to 'Check all', 'With selected:', 'Browse', 'Change', 'Drop', and 'Primary'. There are also buttons for 'Print', 'Move columns', and 'Normalize'. A form to add columns is visible with '1' column(s) added 'after DEP_ID'. The 'Indexes' tab is also visible, showing a 'PRIMARY' index on 'EMP_ID'.

Exercise 2: Load data into tables

In this exercise, you will learn how data can be loaded into MySQL. You could manually insert each row into the table one by one, but that would take a long time. Instead, MySQL (and almost every other database) allows you to load data from .CSV files.

The steps below explain the process of loading data into the tables you created earlier in exercise 1.

1. Download the 5 .csv files below to your local computer:

- [Departments.csv](#)
- [Employees.csv](#)
- [Jobs.csv](#)
- [Locations.csv](#)
- [JobsHistory.csv](#)

To load each table do the following steps.

- Select each table .
- Click on Import tab.
- Select the csv file and click on **Go** to load the csv file.

The screenshot shows the phpMyAdmin interface. On the left, the database structure is visible, with the 'EMPLOYEES' table highlighted under the 'HR' database. The main panel displays the 'Import' wizard for the 'EMPLOYEES' table. The title 'Importing into the table "EMPLOYEES"' is highlighted with a red box. The 'File to import:' section includes a 'Choose File' button and a text input field containing 'Employees.csv'. The 'Character set of the file:' is set to 'utf-8'. The 'Partial import:' section has a checked checkbox for 'Allow the interruption of an import in case the script detects it is close to the PHP timeout limit. (This Skip this number of queries (for SQL) starting from the first one: 0'. The 'Other options:' section has a checked checkbox for 'Enable foreign key checks'. The 'Format:' section has a dropdown menu set to 'CSV'. At the bottom, a 'Console' tab is visible.

phpMyAdmin

Recent Favorites

New HR

DEPARTMENTS

EMPLOYEES

JOBS

JOB_HISTORY

LOCATIONS

information_schema

mysql

Mysql_learners

New

PETSALE

performance_schema

sys

Server: mysql:3306 » Database: HR » Table: EMPLOYEES

Browse Structure SQL Search Insert Export Import

Importing into the table "EMPLOYEES"

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

Other options:

☒ Enable foreign key checks

Format:

Console

HR_Database_Crea....sql

Once the tables are loaded , you will get a message that the records are inserted successfully.

The screenshot displays a MySQL database interface with a top navigation bar containing tabs: Browse, Structure, SQL, Search, Insert, Export, Import, Privileges, and Operations. The main area shows five sequential SQL execution results, each with a green checkmark icon and a message: "1 row inserted. (Query took 0.0038 seconds.)". Each result is followed by an `INSERT INTO`EMPLOYEES` VALUES`(`E1004`, 'Santosh', 'Kumar', '123459', '1985-07-20', 'M', '511 Aurora Av, Aurora,IL',` statement. The statements are truncated in the image. At the bottom left, there is a "Console" button.

Further you can click on browse and view the data of each table.

Browse
Structure
SQL
Search
Insert
Export
Import
Privileges
Operations

Showing rows 0 - 9 (10 total, Query took 0.0007 seconds.)

```
SELECT * FROM `EMPLOYEES`
```

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

			EMP_ID	F_NAME	L_NAME	SSN	B_DATE	SEX	ADDRESS	JOB_ID	SAL	
<input type="checkbox"/>				E1001	John	Thomas	123456	1976-09-01	M	5631 Rice, OakPark,IL	100	10000
<input type="checkbox"/>				E1002	Alice	James	123457	1972-07-31	F	980 Berry Ln, Elgin,IL	200	8000
<input type="checkbox"/>				E1003	Steve	Wells	123458	1980-10-08	M	291 Springs, Gary,IL	300	5000
<input type="checkbox"/>				E1004	Santosh	Kumar	123459	1985-07-20	M	511 Aurora Av, Aurora,IL	400	6000
<input type="checkbox"/>				E1005	Ahmed	Hussain	123410	1981-04-01	M	216 Oak Tree, Geneva,IL	500	7000
<input type="checkbox"/>				E1006	Nancy	Allen	123411	1978-06-02	F	111 Green Pl, Elgin,IL	600	9000
<input type="checkbox"/>				E1007	Mary	Thomas	123412	1975-05-05	F	100 Rose Pl, Gary,IL	650	6500
<input type="checkbox"/>				E1008	Bharath	Gupta	123413	1985-06-05	M	145 Berry Ln, Naperville,IL	660	6500
<input type="checkbox"/>				E1009	Andrea	Jones	123414	1990-09-07	F	120 Fall Creek, Gary,IL	234	7000
<input type="checkbox"/>				E1010	Ann	Jacob	123415	1982-03-30	F	111 Britany Springs,Elgin,IL	220	7000

☐ Check all | With selected: Edit Copy Delete Export

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Console

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
2022-08-03	0.4	Sathya Priya	Updated CSV Links
2022-07-27	0.3	Lakshmi Holla	Updated HTML tag
2022-04-07	0.2	Malika Singla	Updated screenshot
2021-11-01	0.1	Lakshmi Holla, Malika Singla	Initial Version

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