

Software Used in this Lab

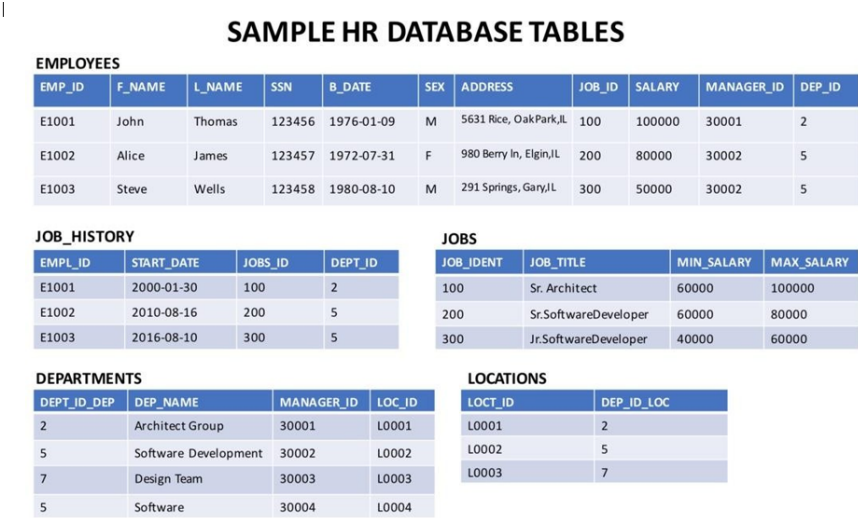
In this lab, you will use [MySQL](#). MySQL is a Relational Database Management System (RDBMS) designed to efficiently store, manipulate, and retrieve data.



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:



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

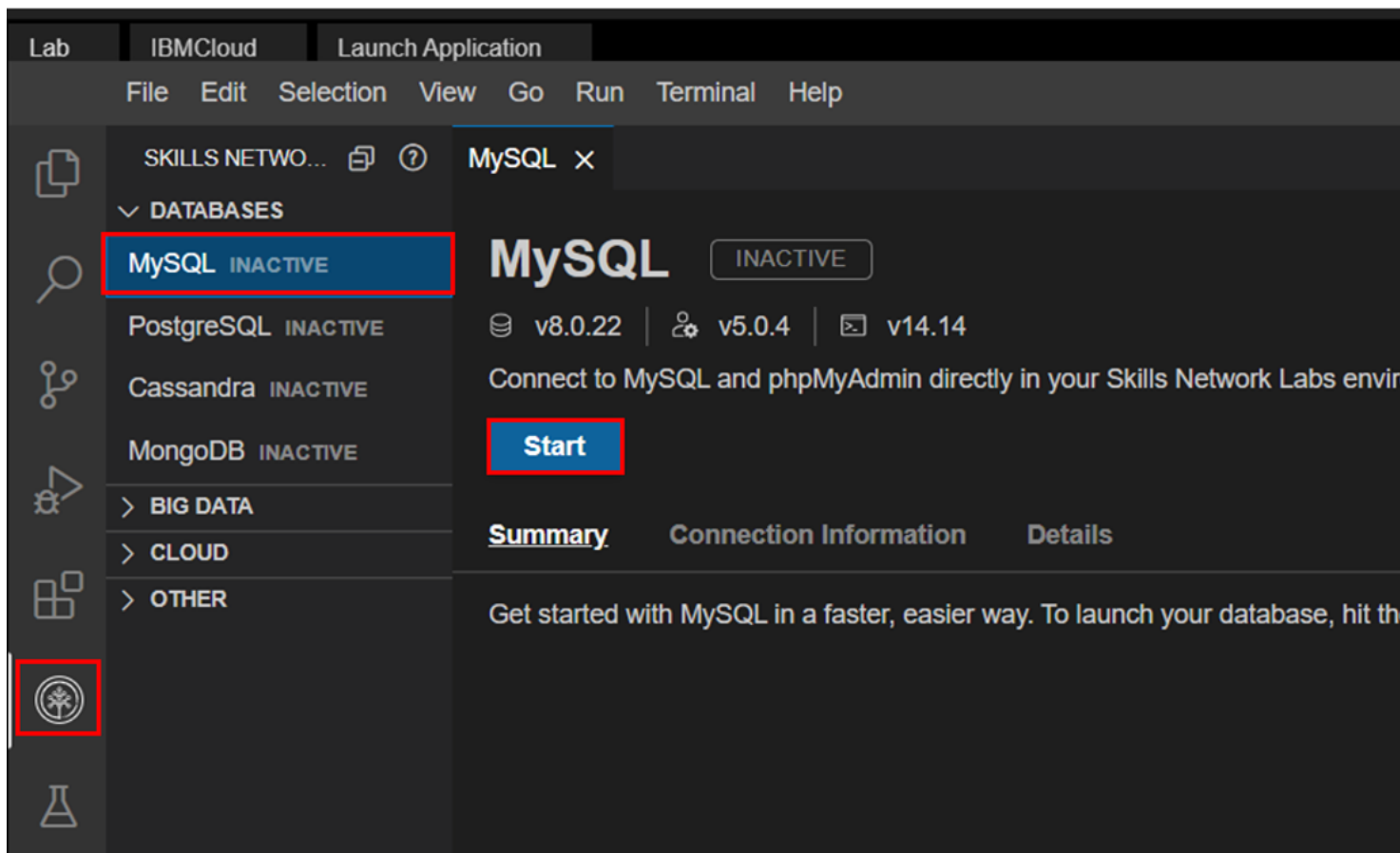
Exercise

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.

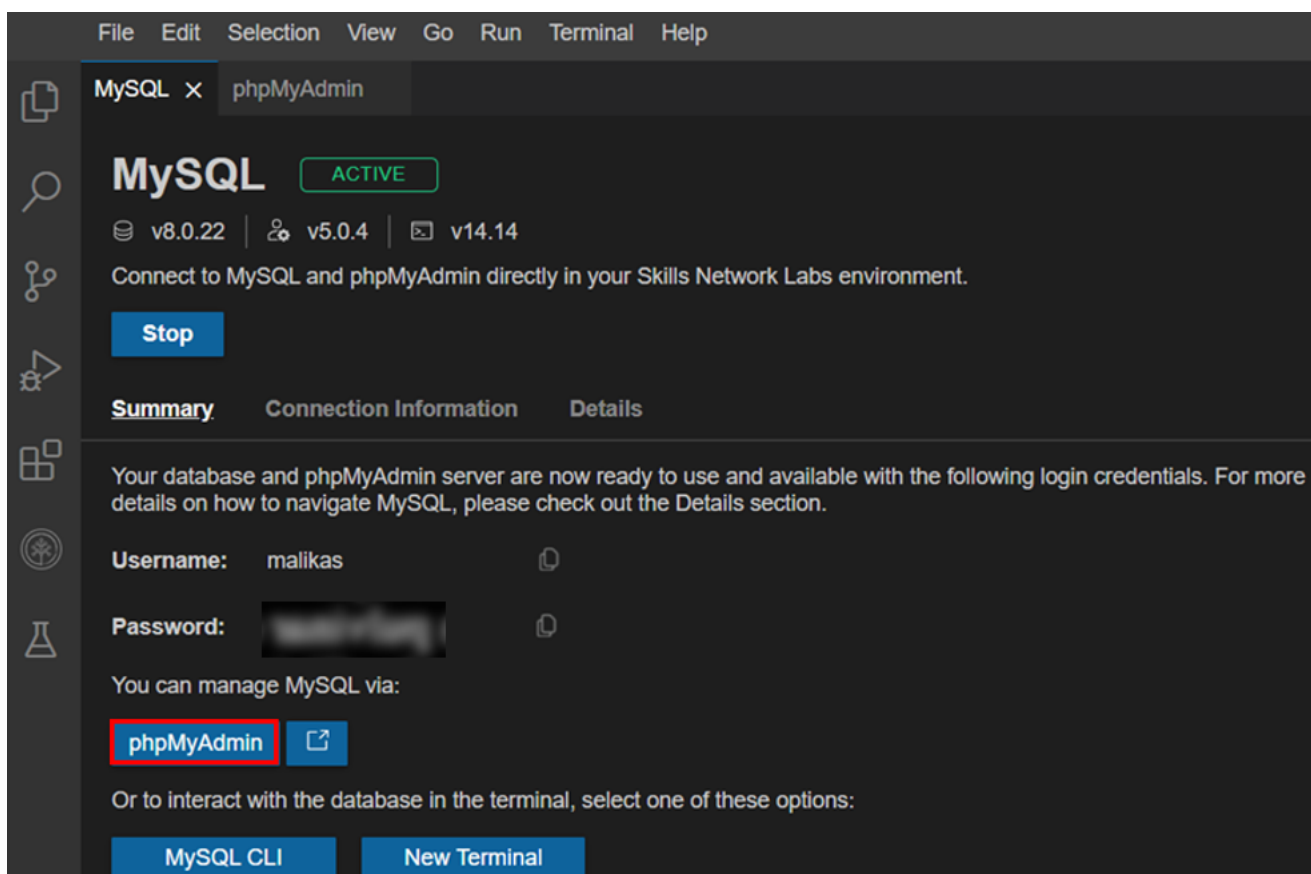
Task A: Create a database

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.



3. You will see the phpMyAdmin GUI tool.

← → ↻ 🏠 🔒 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 **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.

- Download the script file to your computer:
 - [HR_Database_Create_Tables_Script.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**.

Recent Favorites

New

HR

information_schema

mysql

Mysql_learners

New

PETSALE

performance_schema

sys

Structure SQL Search Query Export Import Operations

Importing into the database "HR"

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** HR_Databa...es_Script.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 m

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

Other options:

☒ Enable foreign key checks

Format:

SQL

Console

- The script then gets imported successfully.

The screenshot displays the phpMyAdmin web interface. On the left, a sidebar shows the database structure for 'HR', including tables like DEPARTMENTS, EMPLOYEES, JOBS, JOB_HISTORY, and LOCATIONS. The main panel on the right shows the 'Structure' tab for the 'HR' database. It displays a list of tables and their definitions. The first table is 'EMPLOYEES', defined by the query 'DROP TABLE IF EXISTS EMPLOYEES'. The second table is 'JOB_HISTORY', defined by the query 'DROP TABLE IF EXISTS JOB_HISTORY'. The third table is 'JOBS', defined by the query 'DROP TABLE IF EXISTS JOBS'. The interface also shows a console at the bottom with a message: 'returned an empty result set (i.e. zero rows) (Query took 0.0037 seconds.)'.

Server: mysql:3306 » Database: HR

Structure SQL Search Query Export Import Operations

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).

Table structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Ext
<input type="checkbox"/> 1	EMP_ID	char(9)	utf8mb4_0900_ai_ci		No	None		
<input type="checkbox"/> 2	F_NAME	varchar(15)	utf8mb4_0900_ai_ci		No	None		
<input type="checkbox"/> 3	L_NAME	varchar(15)	utf8mb4_0900_ai_ci		No	None		
<input type="checkbox"/> 4	SSN	char(9)	utf8mb4_0900_ai_ci		Yes	NULL		
<input type="checkbox"/> 5	B_DATE	date			Yes	NULL		
<input type="checkbox"/> 6	SEX	char(1)	utf8mb4_0900_ai_ci		Yes	NULL		
<input type="checkbox"/> 7	ADDRESS	varchar(30)	utf8mb4_0900_ai_ci		Yes	NULL		
<input type="checkbox"/> 8	JOB_ID	char(9)	utf8mb4_0900_ai_ci		Yes	NULL		
<input type="checkbox"/> 9	SALARY	decimal(10,2)			Yes	NULL		
<input type="checkbox"/> 10	MANAGER_ID	char(9)	utf8mb4_0900_ai_ci		Yes	NULL		
<input type="checkbox"/> 11	DEP_ID	char(9)	utf8mb4_0900_ai_ci		No	None		

☐ Check all With selected: [Browse](#) [Change](#) [Drop](#) [Primary](#) [U](#)

[Print](#) [Move columns](#) [Normalize](#)

[Add](#) column(s) [Go](#)

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Drop	PRIMARY	BTREE	Yes	No	EMP ID	0	A	No	

Console

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 selected. The main area displays the 'Import' tab 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:' dropdown 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.' and a text input field 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 'CSV'. At the bottom, there is a 'Console' tab and a file named '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 toolbar at the top containing buttons for Browse, Structure, SQL, Search, Insert, Export, Import, Privileges, and Operations. The main area shows five sequential query execution results, each with a green checkmark icon and a message: "1 row inserted. (Query took 0.0038 seconds.)". Each result is followed by the SQL statement: `INSERT INTO `EMPLOYEES` VALUES ('E1004', 'Santosh', 'Kumar', '123459', '1985-07-20', 'M', '511 Aurora Av, Aurora,IL', '5`. The bottom of the interface features a "Console" tab.

✓ 1 row inserted. (Query took 0.0038 seconds.)

```
INSERT INTO `EMPLOYEES` VALUES ('E1004', 'Santosh', 'Kumar', '123459', '1985-07-20', 'M', '511 Aurora Av, Aurora,IL', '5
```

✓ 1 row inserted. (Query took 0.0036 seconds.)

```
INSERT INTO `EMPLOYEES` VALUES ('E1005', 'Ahmed', 'Hussain', '123410', '1981-04-01', 'M', '216 Oak Tree, Geneva,IL', '5
```

✓ 1 row inserted. (Query took 0.0038 seconds.)

```
INSERT INTO `EMPLOYEES` VALUES ('E1006', 'Nancy', 'Allen', '123411', '1978-06-02', 'F', '111 Green Pl, Elgin,IL', '600
```

✓ 1 row inserted. (Query took 0.0039 seconds.)

```
INSERT INTO `EMPLOYEES` VALUES ('E1007', 'Mary', 'Thomas', '123412', '1975-05-05', 'F', '100 Rose Pl, Gary,IL', '650',
```

✓ 1 row inserted. (Query took 0.0051 seconds.)

```
INSERT INTO `EMPLOYEES` VALUES ('E1008', 'Bharath', 'Gupta', '123413', '1985-06-05', 'M', '145 Berry Ln, Naperville,IL'
```

Console

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

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about:blank

Browse

Structure

SQL

Search

Insert

Export

Import

Privileges

Operations

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

SELECT * FROM `EMPLOYEES`

Profilin

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

SALAI

Edit

Copy

Delete

E1001

John

Thomas

123456

1976-09-01

M

5631 Rice, OakPark,IL

100

100000.

Edit

Copy

Delete

E1002

Alice

James

123457

1972-07-31

F

980 Berry Ln, Elgin,IL

200

80000.

Edit

Copy

Delete

E1003

Steve

Wells

123458

1980-10-08

M

291 Springs, Gary,IL

300

50000.

Edit

Copy

Delete

E1004

Santosh

Kumar

123459

1985-07-20

M

511 Aurora Av, Aurora,IL

400

60000.

Edit

Copy

Delete

E1005

Ahmed

Hussain

123410

1981-04-01

M

216 Oak Tree, Geneva,IL

500

70000.

Edit

Copy

Delete

E1006

Nancy

Allen

123411

1978-06-02

F

111 Green Pl, Elgin,IL

600

90000.

Edit

Copy

Delete

E1007

Mary

Thomas

123412

1975-05-05

F

100 Rose Pl, Gary,IL

650

65000.

Edit

Copy

Delete

E1008

Bharath

Gupta

123413

1985-06-05

M

145 Berry Ln, Naperville,IL

660

65000.

Edit

Copy

Delete

E1009

Andrea

Jones

123414

1990-09-07

F

120 Fall Creek, Gary,IL

234

70000.

Edit

Copy

Delete

E1010

Ann

Jacob

123415

1982-03-30

F

111 Britany Springs,Elgin,IL

220

70000.

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
2023-05-11	0.8	Eric Hao & Vladislav Boyko	Updated Page Frames
2023-05-10	0.7	Eric Hao & Vladislav Boyko	Updated Page Frames
2023-05-10	0.6	Eric Hao & Vladislav Boyko	Updated Page Frames
2023-05-05	0.5	Benny Li	Updated and Re-Published
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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