

本实验室使用的软件

在本实验中，您将使用MySQL。MySQL 是一个关系数据库管理系统 (RDBMS)，旨在高效存储、操作和检索数据。



为了完成本实验，您将使用作为 IBM Skills Network Labs (SN Labs) Cloud IDE 一部分提供的 MySQL 关系数据库服务。SN Labs 是本课程中使用的虚拟实验室环境。

本实验使用的数据库

本实验使用的数据库是内部数据库。您将使用一个示例 HR 数据库。此 HR 数据库模式由 5 个表组成，分别为EMPLOYEES、JOB_HISTORY、JOBS、DEPARTMENTS和LOCATIONS。每个表都有几行示例数据。下图显示了 HR 数据库的表：

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 Ln, 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

DEPARTMENTS

DEPT_ID	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

JOBS

JOB_ID	JOB_TITLE	MIN_SALARY	MAX_SALARY
100	Sr. Architect	60000	100000
200	Sr. Software Developer	60000	80000
300	Jr. Software Developer	40000	60000

LOCATIONS

LOC_ID	DEP_ID	LOC
L0001	2	
L0002	5	
L0003	7	

目标

完成本实验后，您将能够将 phpMyAdmin 与 MySQL 结合使用来：

- 创建数据库。
- 使用 SQL 脚本创建表
- 将数据加载到表中

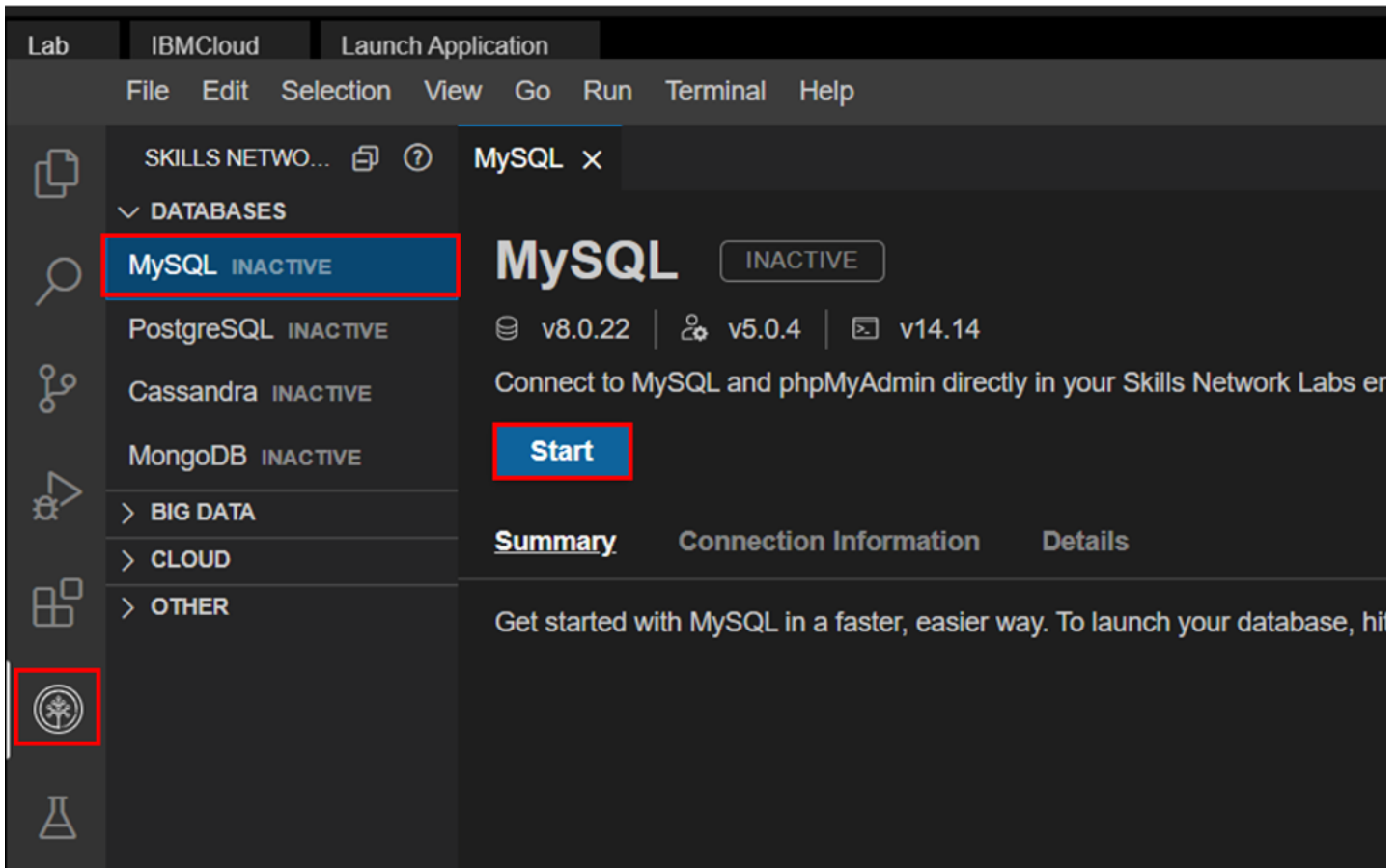
锻炼

在本练习中，通过不同的任务，您将学习如何使用 phpMyAdmin 图形用户界面 (GUI) 工具在 MySQL 数据库服务中创建表和加载数据。

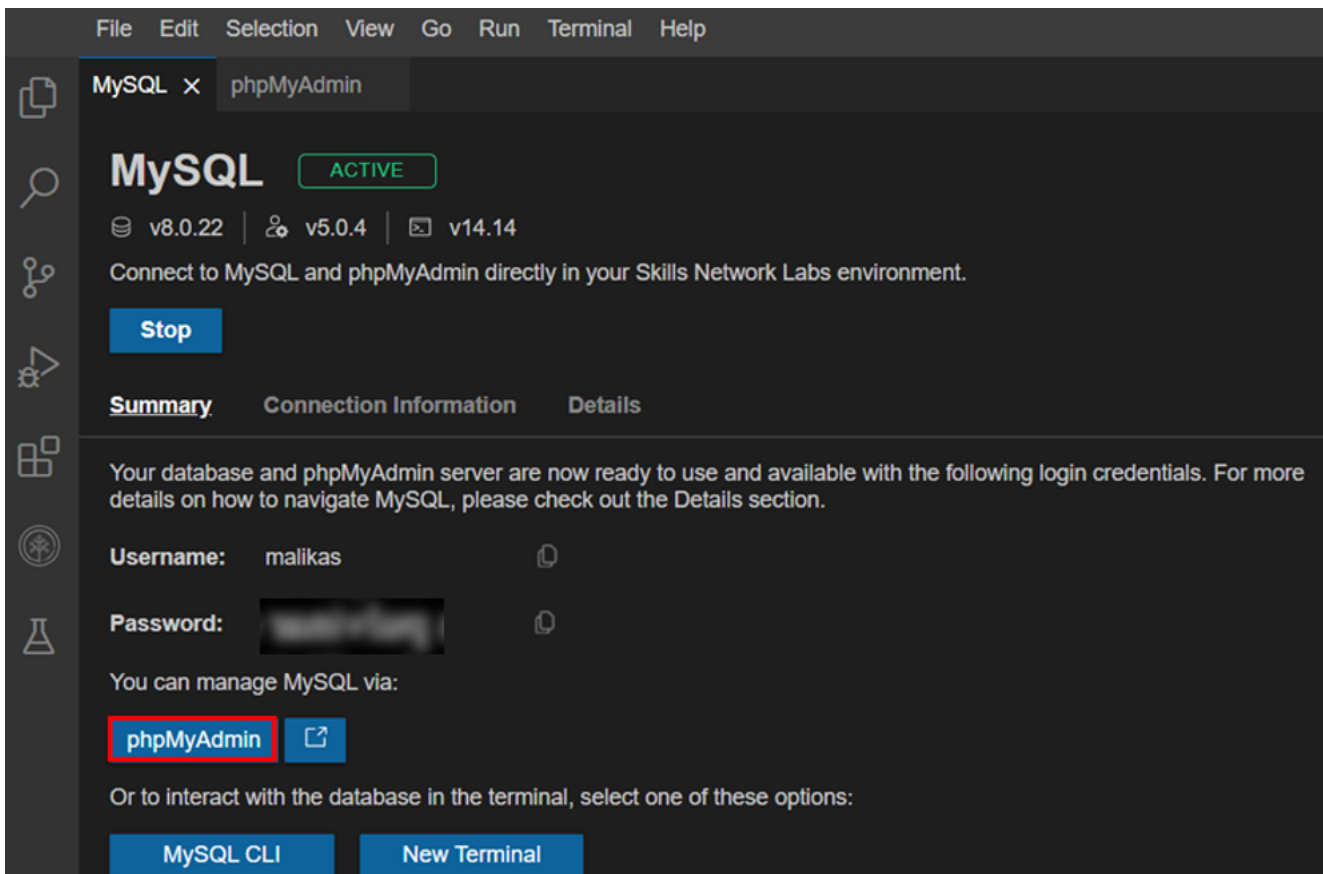
任务A：创建数据库

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

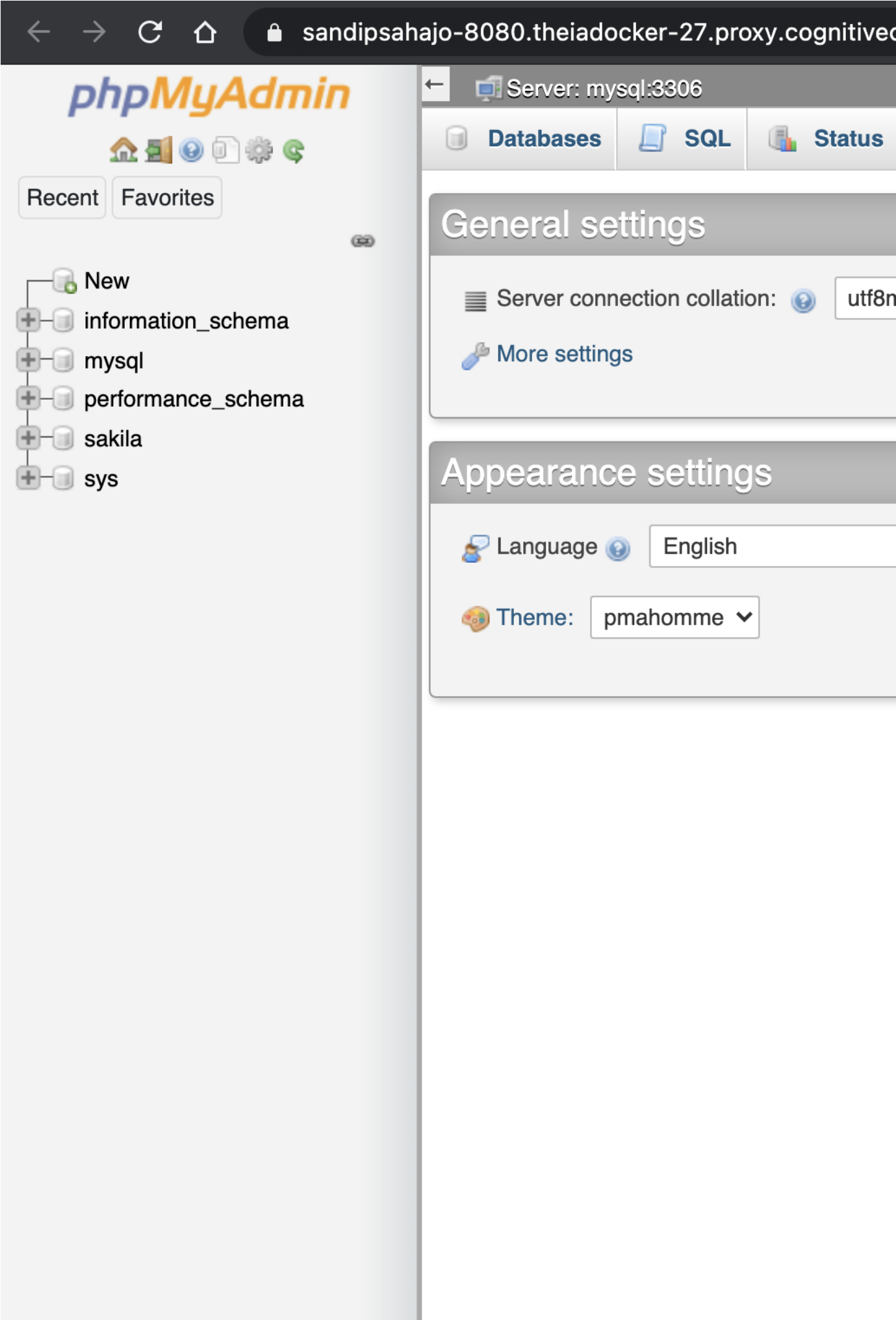
To start the MySQL click **Start**.



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 **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.

DatabasesSQLStatusUser accountsExportImportSettingsBinary log

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.

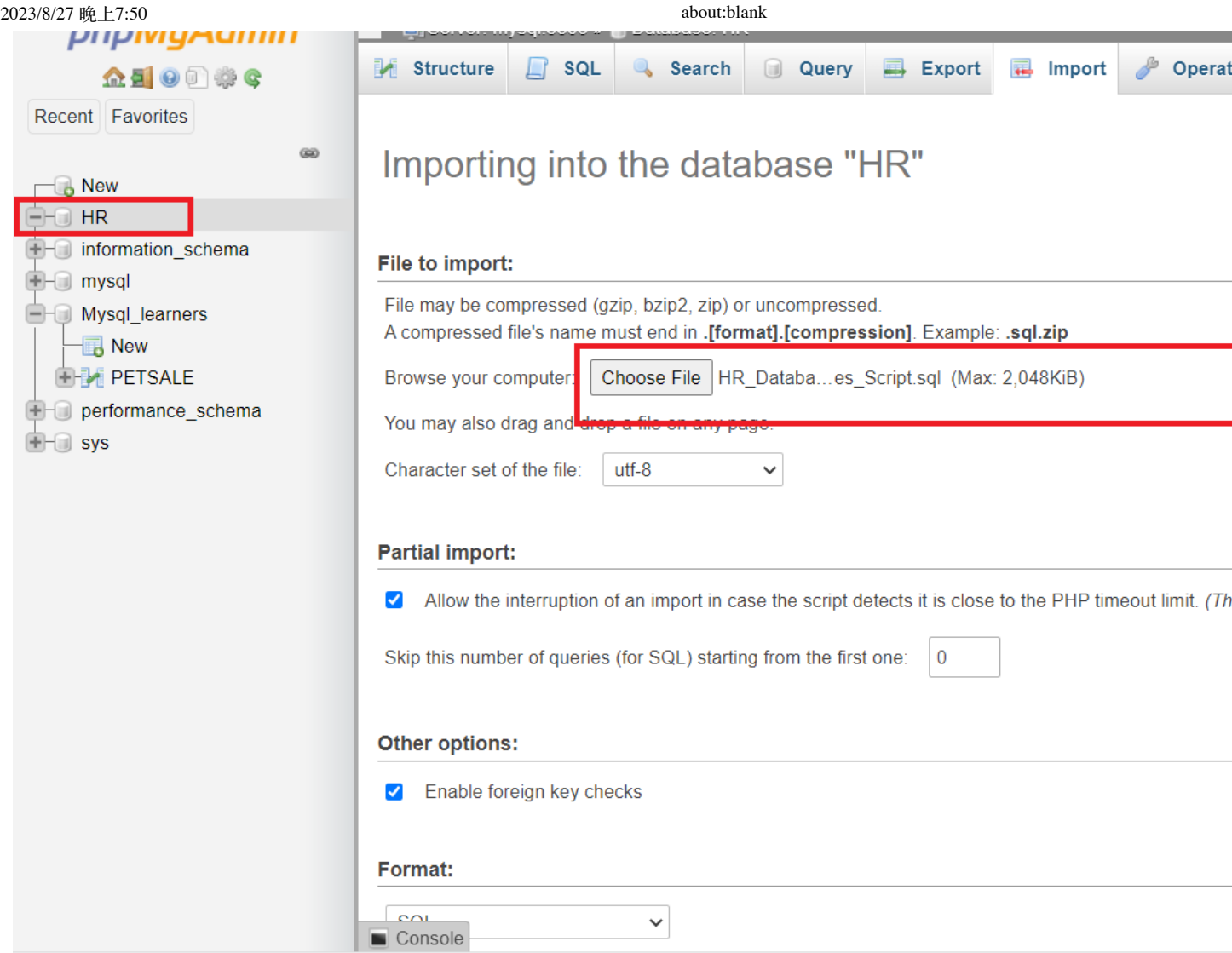
1. Download the script file to your computer:

◦ [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**.

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- The script then gets imported successfully.

phpMyAdmin

Recent

Favorites

New

HR

New

DEPARTMENTS

EMPLOYEES

JOBS

JOB_HISTORY

LOCATIONS

information_schema

mysql

Mysql_learners

New

PETSALE

performance_schema

sys

Server: mysql:3306 » Database: HR

Structure

SQL

Search

Query

Export

Import

Operat

Import has been successfully finished, 10 queries executed. (HR_Database_Create_Tables_Scripts

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).

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phpMyAdmin

Recent

Favorites

New

HR

New

DEPARTMENTS

EMPLOYEES

JOBS

JOB_HISTORY

LOCATIONS

information_schema

mysql

Mysql_learners

New

PETSALE

performance_schema

sys

Browse

Structure

SQL

Search

Insert

Export

Import

Table structure

Relation view

	#	Name	Type	Collation	Attributes	Null	Default	Comments
<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

Print

Move columns

Normalize

Add

1

column(s)

after DEP_ID

Go

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Compr
<div>Drop</div>	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.

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phpMyAdmin

Recent

Favorites

New

HR

New

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:

Choose File

 Employees.csv (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. (The default is 300 seconds)

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

0

Other options:

☒ Enable foreign key checks

Format:

CSV

Console

HR_Database_Crea....sql

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

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Server: MySQL5502Database: HR2Table: EMPLOYEES

Browse

Structure

SQL

Search

Insert

Export

Import

Privileges

Operations

✔ 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', '6512345678')

✔ 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', '6512345678')

✔ 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', '6512345678')

✔ 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', '6512345678')

✔ 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', '6512345678')

Console

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

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Browse

Structure

SQL

Search

Insert

Export

Import

Privileges

Operations

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

SELECT * FROM `EMPLOYEES`

Pro

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

SA

Edit

Copy

Delete

E1001

John

Thomas

123456

1976-09-01

M

5631 Rice, OakPark,IL

100

100

Edit

Copy

Delete

E1002

Alice

James

123457

1972-07-31

F

980 Berry Ln, Elgin,IL

200

80

Edit

Copy

Delete

E1003

Steve

Wells

123458

1980-10-08

M

291 Springs, Gary,IL

300

50

Edit

Copy

Delete

E1004

Santosh

Kumar

123459

1985-07-20

M

511 Aurora Av, Aurora,IL

400

60

Edit

Copy

Delete

E1005

Ahmed

Hussain

123410

1981-04-01

M

216 Oak Tree, Geneva,IL

500

70

Edit

Copy

Delete

E1006

Nancy

Allen

123411

1978-06-02

F

111 Green Pl, Elgin,IL

600

90

Edit

Copy

Delete

E1007

Mary

Thomas

123412

1975-05-05

F

100 Rose Pl, Gary,IL

650

65

Edit

Copy

Delete

E1008

Bharath

Gupta

123413

1985-06-05

M

145 Berry Ln, Naperville,IL

660

65

Edit

Copy

Delete

E1009

Andrea

Jones

123414

1990-09-07

F

120 Fall Creek, Gary,IL

234

70

Edit

Copy

Delete

E1010

Ann

Jacob

123415

1982-03-30

F

111 Britany Springs,Elgin,IL

220

70

Check all

With selected:

Edit

Copy

Delete

Export

Show all

Number of rows:

25

Filter rows:

Search this table

Sort by key:

None

Console

恭喜！您已完成本实验，并准备好学习下一个主题。

作者

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变更日志

日期	版本	更改者	变更说明
2023-05-11	0.8	埃里克·郝 & 弗拉迪斯拉夫·博伊科	更新的页框
2023-05-10	0.7	埃里克·郝 & 弗拉迪斯拉夫·博伊科	更新的页框
2023-05-10	0.6	埃里克·郝 & 弗拉迪斯拉夫·博伊科	更新的页框
2023-05-05	0.5	李斌杰	更新并重新发布
2022-08-03	0.4	沙迪亚·普里亚	更新的 CSV 链接
2022-07-27	0.3	拉克希米·霍拉	更新了 HTML 标签
2022-04-07	0.2	玛莉卡·辛格拉	更新截图
2021-11-01	0.1	拉克希米·霍拉、玛莉卡·辛格拉	初始版本

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