

Hands-on Lab: CREATE, ALTER, TRUNCATE, DROP

Estimated time needed: 20 minutes

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

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 use 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 use phpMyAdmin with MySQL to:

- Create a database.
- Create a new table in a database.
- Add, delete, or modify columns in an existing table.
- Remove all rows from an existing table without deleting the table itself.
- Delete an existing table in a database.

Task 1: Create a database

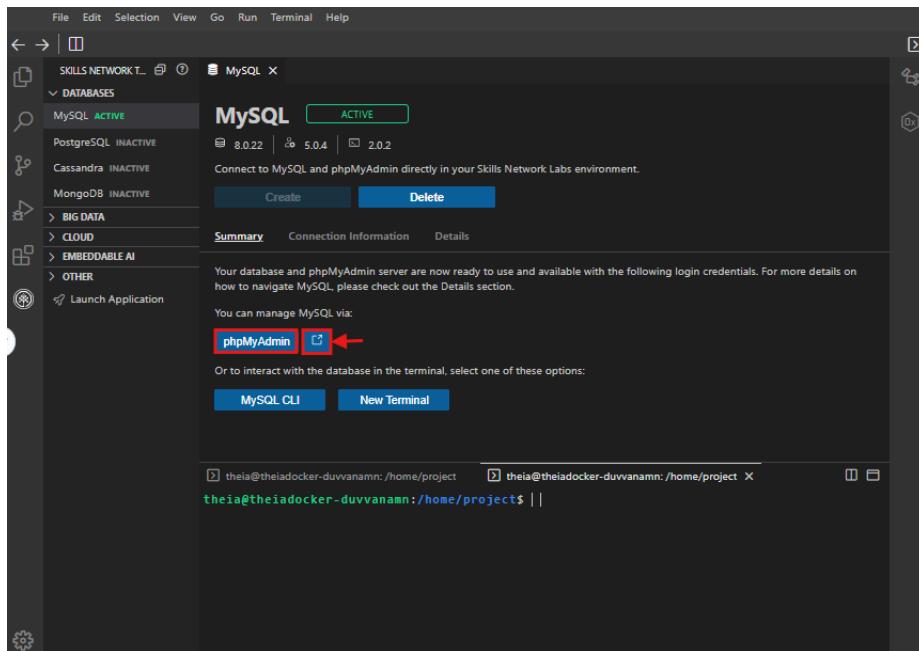
Follow the steps below to create a new database in the phpMyAdmin GUI of MySQL.

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

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

A screenshot of the Skills Network Toolbox interface. On the left, there's a sidebar with icons for BIG DATA, CLOUD, EMBEDDABLE AI, and OTHER. A red box highlights the MySQL entry under DATABASES. The main area shows a MySQL entry with status 'INACTIVE'. It has version numbers 8.0.22, 5.0.4, and 2.0.2. Below the MySQL entry is a note: 'Connect to MySQL and phpMyAdmin directly in your Skills Network Labs environment.' A large red box highlights the 'Create' button. At the bottom of the screen, there are two terminal windows showing a Linux command-line interface with the user 'theia' at 'theiadocker-duvvanamn'.

2. Once MySQL has started, click the **phpMyAdmin** button to open phpMyAdmin in the same window. Alternatively, click the **toggle button** next to the phpMyAdmin button to open phpMyAdmin in a new browser tab.



3. You will see the phpMyAdmin GUI tool.

← → C ⌂

sandipsahajo-8080.theiadocker-27.proxy.cognitiveclass.ai

phpMyAdmin

Server: mysql:3306

Databases SQL Status User accounts

General settings

Server connection collation: utf8mb4_unicode_ci

More settings

Appearance settings

Language English

Theme: pmahomme

New

information_schema

mysql

performance_schema

sakila

sys

4. In the tree view, click **New** to create a new empty database. Then, enter `Mysql_Learners` as the name of the database, leave the default `utf8` encoding, and click **Create**.

UTF-8 is the most commonly used character encoding for content or data.

Databases

Create database [?](#)

Mysql_Learners utf8_general_ci Create

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

[Up](#) [Check all](#) With selected: [Drop](#)

Task 2a : CREATE statement

Now, you will use the CREATE statement to create two new tables.
Follow the instructions to complete this task.

1. You need to create two tables, PETSALE and PET. To create the two tables, copy the code below and paste it into the text area of the SQL tab. Click Go.

```
CREATE TABLE PETSALE (
    ID INTEGER NOT NULL,
    PET CHAR(20),
    SALEPRICE DECIMAL(6,2),
    PROFIT DECIMAL(6,2),
    SALEDATE DATE
);
CREATE TABLE PET (
    ID INTEGER NOT NULL,
    ANIMAL VARCHAR(20),
    QUANTITY INTEGER
);
```

Structure SQL Search Query Export Import Operations Privileges Routines Events Triggers Designer

Run SQL query/queries on database Mysql_learners: [?](#)

```
1 CREATE TABLE PETSALE (
2     ID INTEGER NOT NULL,
3     PET CHAR(20),
4     SALEPRICE DECIMAL(6,2),
5     PROFIT DECIMAL(6,2),
6     SALEDATE DATE
7 );
8
9 CREATE TABLE PET (
10    ID INTEGER NOT NULL,
11    ANIMAL VARCHAR(20),
12    QUANTITY INTEGER
13 );
```

[Clear](#) [Format](#) [Get auto-saved query](#)

Bind parameters [?](#) Show this query here again Retain query box Rollback when finished Enable foreign key checks

(Delimiter: [:](#)) [Go](#)

Hide query box

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0562 seconds.)

CREATE TABLE PETSALE (ID INTEGER NOT NULL, PET CHAR(20), SALEPRICE DECIMAL(6,2), PROFIT DECIMAL(6,2), SALEDATE DATE)

phpMyAdmin

Server: mysql:3306 » Database: Mysql_Learners

Structure SQL Search Query Export Import Operations Privileges Routines

Show query box

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0196 seconds.)

CREATE TABLE PETSALE (ID INTEGER NOT NULL, PET CHAR(20), SALEPRICE DECIMAL(6,2), PROFIT DECIMAL(6,2), SALEDATE DATE)

[Edit inline] [Edit]

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0189 seconds.)

CREATE TABLE PET (ID INTEGER NOT NULL, ANIMAL VARCHAR(20), QUANTITY INTEGER)

Recent Favorites

New information_schema mysql Mysql_Learners New PET PETSALE performance_schema sys

Task 2b: INSERT statement

Now, insert some records into the two newly created tables. You can also add SELECT statements to print the contents of the tables once they are loaded with data.

Copy the code below and paste it into the text area of the SQL tab. Then, click Go.

```
INSERT INTO PETSALE VALUES
(1,'Cat',450.09,100.47,'2018-05-29'),
(2,'Dog',666.66,150.76,'2018-06-01'),
(3,'Parrot',50.00,8.9,'2018-06-04'),
(4,'Hamster',60.60,12,'2018-06-11'),
(5,'Goldfish',48.48,3.5,'2018-06-14');
```

```

INSERT INTO PET VALUES
(1,'Cat',3),
(2,'Dog',4),
(3,'Hamster',2);
SELECT * FROM PETSAL;
SELECT * FROM PET;

```

Showing rows 0 - 4 (5 total). Query took 0.0008 seconds.

SELECT * FROM PETSAL

ID	PET	SALEPRICE	PROFIT	SALEDATE
1	Cat	450.09	100.47	2018-05-29
2	Dog	666.66	150.76	2018-06-01
3	Parrot	50.00	8.90	2018-06-04
4	Hamster	60.60	12.00	2018-06-11
5	Goldfish	48.48	3.50	2018-06-14

Showing rows 0 - 2 (3 total). Query took 0.0003 seconds.

SELECT * FROM PET

ID	ANIMAL	QUANTITY
1	Cat	3
2	Dog	4
3	Hamster	2

Task 3: ALTER statement

In this exercise, you will use the ALTER statement to add, delete, or modify columns in the existing tables.

1. Adding a column

Add a new column named QUANTITY to the PETSAL table and display the altered table. For this, copy the code below and paste it into the text area of the SQL page. Click Go..

```

ALTER TABLE PETSAL
ADD COLUMN QUANTITY INTEGER;
SELECT * FROM PETSAL;

```

MySQL returned an empty result set (i.e. zero rows) (Query took 0.0481 seconds)

ALTER TABLE PETSAL ADD COLUMN QUANTITY INTEGER

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

Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Showing rows 0 - 4 (5 total). Query took 0.0005 seconds.

SELECT * FROM PETSAL

Show all | Number of rows: 25 Filter rows: Search this table

ID	PET	SALEPRICE	PROFIT	SALEDATE	QUANTITY
1	Cat	450.09	100.47	2018-05-29	NULL
2	Dog	666.66	150.76	2018-06-01	NULL
3	Parrot	50.00	8.90	2018-06-04	NULL
4	Hamster	60.60	12.00	2018-06-11	NULL
5	Goldfish	48.48	3.50	2018-06-14	NULL

Now update the newly added QUANTITY column of the PETSAL table with some values and show all the table records. Copy the code below and paste it into text area of the SQL page. Click Go.

```

UPDATE PETSAL SET QUANTITY = 9 WHERE ID = 1;
UPDATE PETSAL SET QUANTITY = 3 WHERE ID = 2;
UPDATE PETSAL SET QUANTITY = 2 WHERE ID = 3;
UPDATE PETSAL SET QUANTITY = 6 WHERE ID = 4;
UPDATE PETSAL SET QUANTITY = 24 WHERE ID = 5;
SELECT * FROM PETSAL;

```

Showing rows 0 - 4 (5 total). Query took 0.0005 seconds.

SELECT * FROM PETSAL

ID	PET	SALEPRICE	PROFIT	SALEDATE	QUANTITY
1	Cat	450.09	100.47	2018-05-29	9
2	Dog	666.66	150.76	2018-06-01	3
3	Parrot	50.00	8.90	2018-06-04	2
4	Hamster	60.60	12.00	2018-06-11	6
5	Goldfish	48.48	3.50	2018-06-14	24

2. Deleting a column

Delete the PROFIT column from the PETSAL table and show the altered table. Copy the code below and paste it into the text area of the SQL page. Click Go.

```

ALTER TABLE PETSAL
DROP COLUMN PROFIT;

```

```
SELECT * FROM PETSALE;
```

The screenshot shows the MySQL Workbench interface. At the top, there are tabs: Browse, Structure, SQL, Search, and Insert. Below these, a sub-header says "Run SQL query/queries on table Mysql_learners.PETSALE:" followed by a "Go" button. In the main area, there is a code editor containing the following SQL code:

```
1 ALTER TABLE PETSALE
2     DROP COLUMN PROFIT;
3
4 SELECT * FROM PETSALE;
```

To the right of the code editor is a results grid titled "+ Options". It has columns: ID, PET, SALEPRICE, SALEDATE, and QUANTITY. The data is as follows:

ID	PET	SALEPRICE	SALEDATE	QUANTITY
1	Cat	450.09	2018-05-29	9
2	Dog	666.66	2018-06-01	3
3	Parrot	50.00	2018-06-04	2
4	Hamster	60.60	2018-06-11	6
5	Goldfish	48.48	2018-06-14	24

Below the results grid are buttons: "Show all", "Number of rows: 25", "Filter rows:", and a search bar "Search this table".

3. Modify a column

Change the data type to VARCHAR(20) type of the column PET of the table PETSALE and show the altered table. Copy the code below and paste it into the text area of the SQL page. Click Go.

```
ALTER TABLE PETSALE
MODIFY PET VARCHAR(20);
SELECT * FROM PETSALE;
```

You can click on the table name PETSALE in the tree structure on the left and then click on the Structure tab in the interface. You can then see the table structure shows the modified column data type, as shown in the image below.

The screenshot shows the MySQL Workbench interface with the "Structure" tab selected. On the left, there is a tree view showing the database structure. In the main area, there is a code editor containing the following SQL code:

```
1
2 ALTER TABLE PETSALE CHANGE `PET` `PET` VARCHAR(20);
3
4 SELECT * FROM PETSALE;
```

To the right of the code editor is a results grid titled "+ Options". It has columns: ID, PET, and SALEPRICE. The data is as follows:

ID	PET	SALEPRICE
1	Cat	450.09
2	Dog	666.66
3	Parrot	50.00
4	Hamster	60.60
5	Goldfish	48.48

Below the results grid are buttons: "Show all", "Number of rows: 25", "Filter rows:", and a search bar "Search this table".

At the bottom of the interface, there is a "Table structure" tab and a "Relation view" tab. Below these, there is a detailed table structure view:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	ID	int			No	None			Change Drop More
2	PET	varchar(20)	utf8mb4_0900_ai_ci		Yes	NULL			Change Drop More
3	SALEPRICE	decimal(6,2)			Yes	NULL			Change Drop More
4	SALEDATE	date			Yes	NULL			Change Drop More
5	QUANTITY	int			Yes	NULL			Change Drop More

In the "Table structure" tab, the "PET" column is highlighted with a red box.

4. Rename a Column

Rename the column PET to ANIMAL of the PETSALE table and show the altered table. Copy the code below and paste it into the text area of the SQL page. Click Go.

```
ALTER TABLE `PETSALE` CHANGE `PET` `ANIMAL` varchar(20);
SELECT * FROM PETSALE;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Toolbar:** Browse, Structure, SQL, Search, Insert, Export, Import, Privileges, Operations.
- Text Area:** Run SQL query/queries on table Mysql_learners.PETSALE: `ALTER TABLE `PETSALE` CHANGE `PET` `ANIMAL` varchar(20);`
- Message Bar:** Showing rows 0 - 4 (5 total, Query took 0.0006 seconds.)
- SQL Area:** `select * from `PETSALE`;`
- Table View:** Shows the PETSALE table with 5 rows:

ID	ANIMAL	SALEPRICE	SALEDATE	QUANTITY
1	Cat	450.09	2018-05-29	9
2	Dog	666.66	2018-06-01	3
3	Parrot	50.00	2018-06-04	2
4	Hamster	60.60	2018-06-11	6
5	Goldfish	48.48	2018-06-14	24
- Filter Options:** Show all, Number of rows: 25, Filter rows: Search this table.

Task 4: TRUNCATE statement

In this exercise, you will use the TRUNCATE statement to remove all rows from an existing table without deleting it.

Let's remove all rows from the PET table and show the empty table. Copy the code below and paste it into the text area of the SQL page. Click Go.

```
TRUNCATE TABLE PET ;
SELECT * FROM PET;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Toolbar:** Browse, Structure, SQL, Search, Insert, Export, Import, Privileges, Operations.
- Text Area:** Run SQL query/queries on table Mysql_learners.PETSALE: `TRUNCATE TABLE PET ;`
- Message Bar:** MySQL returned an empty result set.
- SQL Area:** `SELECT * FROM PET;`
- Table View:** Shows the PET table with 0 rows:

ID	ANIMAL	QUANTITY
----	--------	----------
- Operations Panel:** Query results operations, Create view.

Task 5: DROP statement

Finally, you will use the DROP statement to delete an existing table. Let's delete the PET table and verify if the table still exists or not (the SELECT statement should give an error if a table doesn't exist). Copy the code below and paste it into the text area of the SQL page. Click Go.

```
DROP TABLE PET;
SELECT * FROM PET;
```

The screenshot shows the phpMyAdmin interface with the following details:

- Toolbar:** Browse, Structure, SQL, Search, Insert, Export, Import, Privileges, Operations.
- Query Editor:** Run SQL query/queries on table Mysql_learners.PETSALE: `1 DROP TABLE PET;
2 SELECT * FROM PET;`
- Error Panel:**
 - Error:** SQL query: [Copy](#)
 - MySQL said:** #1146 - Table 'Mysql_learners.PET' doesn't exist

Practice problems

Try the following problems for an enhanced practice of the concepts learned in this lab.

1. Create a new table in the database named `Toys` with attributes as `ID` (integer), `Variety` (variable length string), and `Quantity` (integer). Make sure the `ID` is not Null.

► [Click here for the solution](#)

2. Add the below-mentioned entries to the table using the `INSERT` statement.

ID	Variety	Quantity
1	Chew toy	20
2	Balls	50
3	Bowls	30
4	Foldable bed	40

► [Click here for the solution](#)

3. ALTER the length of 'Variety' in the table to 30 characters.

► [Click here for the solution](#)

4. TRUNCATE the table 'Toys'

► [Click here for the solution](#)

5. DROP the table 'Toys'

► [Click here for the solution](#)

Conclusion

Congratulations on successfully completing this lab.

By now, you have learned how to:

- Create a database in phpMyAdmin GUI on MySQL.
- Use the CREATE statement to create new tables in the database.
- Use the INSERT statement to add records to the tables.
- Use the ALTER statement to add, delete, rename, or modify the columns of an existing table.
- Use the TRUNCATE statement to delete the contents of an existing table (but not the table).
- Use the DROP statement to delete an entire table.

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