

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:

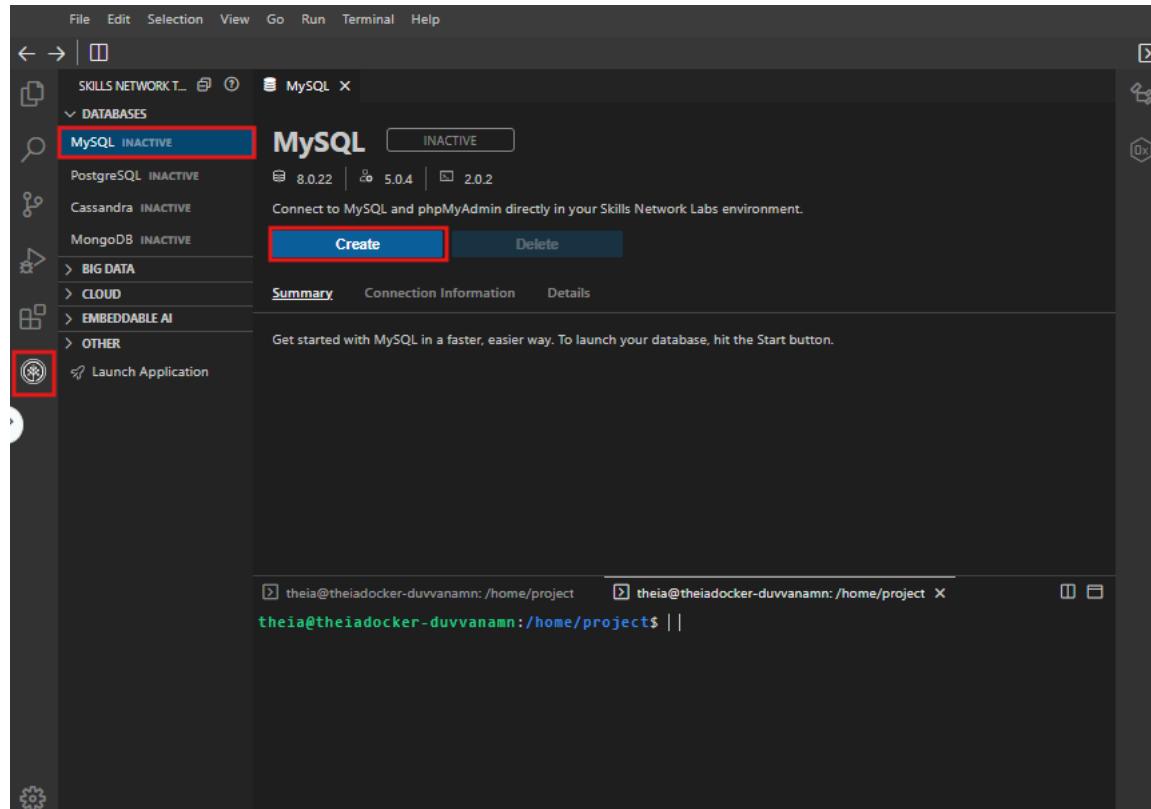
- Create a database.
- Create a new table in a database.
- Add, delete, or modify columns in an existing table.
- Remove all rows from an existing table without deleting the table itself.
- Delete an existing table in a database.

Task 1: Create a database

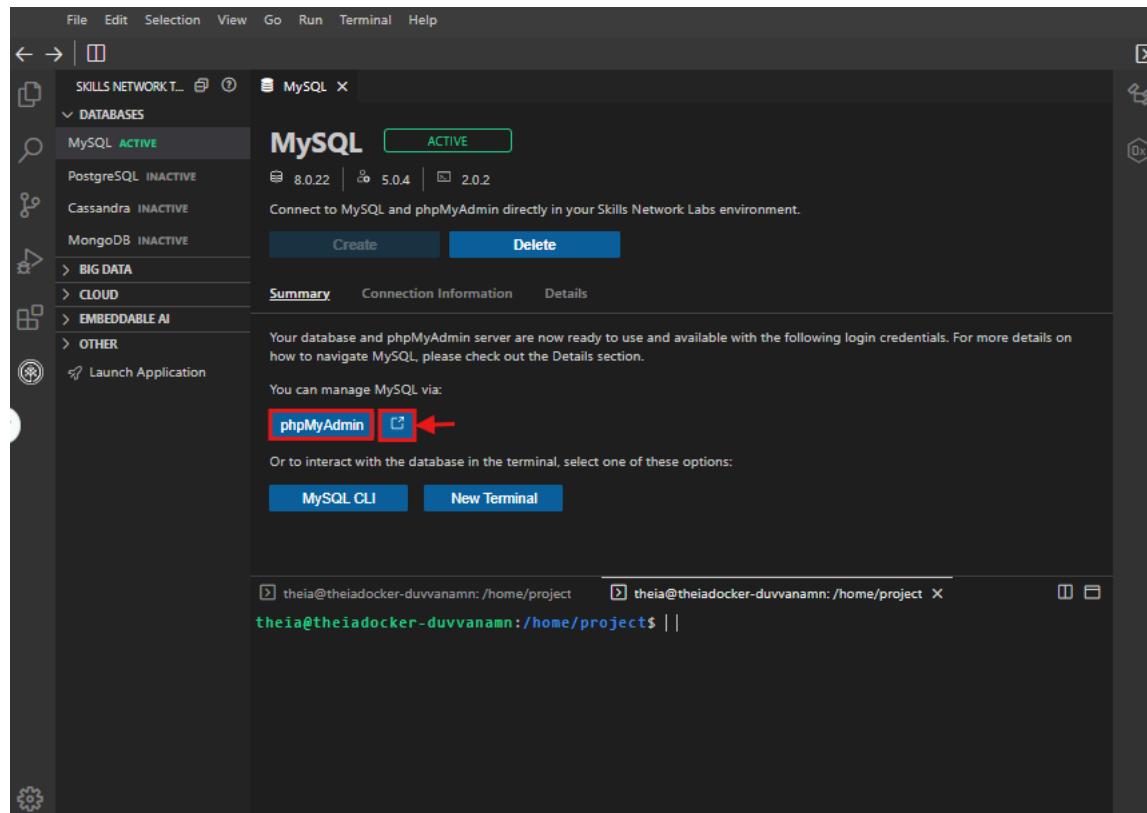
Follow the steps below to create a new database in the phpMyAdmin GUI of MySQL.

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

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



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.

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 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.

The screenshot shows the MySQL Workbench interface with the 'Databases' tab selected. At the top, there is a toolbar with various icons and tabs: Databases, SQL, Status, User accounts, Export, Import, Settings, Binary log, Replication, Variables, and a dropdown menu. Below the toolbar, a 'Create database' button is visible. A search bar contains 'Mysql_Learners' and 'utf8_general_ci'. A 'Create' button is highlighted. The main area displays a table of databases:

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

Below the table are buttons for 'Check all' and '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
);
```

The screenshot shows the MySQL Workbench interface with the 'SQL' tab selected. At the top, there is a toolbar with various icons and tabs: Structure, SQL, Search, Query, Export, Import, Operations, Privileges, Routines, Events, Triggers, Designer, and a dropdown menu. Below the toolbar, a 'Run SQL query/queries on database Mysql_learners:' input field contains the previously copied SQL code. Below the input field are buttons for 'Clear', 'Format', 'Get auto-saved query', and 'Bind parameters'. At the bottom, there are checkboxes for 'Show this query here again', 'Retain query box', 'Rollback when finished', and 'Enable foreign key checks', followed by a 'Go' button. The results pane at the bottom shows a green success message: 'MySQL returned an empty result set (i.e. zero rows). (Query took 0.0562 seconds.)' and the executed SQL command: 'CREATE TABLE PETSALE (ID INTEGER NOT NULL, PET CHAR(20), SALEPRICE DECIMAL(6,2), PROFIT DECIMAL(6,2), SALEDATE DATE)'.

The screenshot shows the phpMyAdmin interface with the following details:

- Server:** mysql:3306 » **Database:** Mysql_Learners
- Structure:** SQL, Search, Query, Export, Import, Operations
- Recent:** Favorites
- Information Schema:** information_schema
- MySQL:** mysql
- Mysql_Learners:** (highlighted with a red box)
 - New
 - PET
 - PETSALe
- Performance Schema:** performance_schema
- System:** 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 PETSALe;
SELECT * FROM PET;
```

The screenshot shows the results of the inserted data in the PETSALe and PET tables:

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	8.9	2018-06-04
4	Hamster	60.60	12	2018-06-11
5	Goldfish	48.48	3.5	2018-06-14

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 PETSALe 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 PETSALe
ADD COLUMN QUANTITY INTEGER;
SELECT * FROM PETSALe;
```

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

`ALTER TABLE PETSALE 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 PETSALE`

[Profiling] [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

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

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

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 **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
DROP COLUMN PROFIT;
SELECT * FROM PETSALE;
```

The screenshot shows the MySQL Workbench interface. The top navigation bar includes tabs for Browse, Structure, SQL, Search, and Insert. Below the tabs, a search bar says "Run SQL query/queries on table Mysql_learners.PETSALE:". The SQL pane contains the following code:

```

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

```

To the right, a results grid displays data from the PETSALE table:

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

Below the grid are buttons for "Show all" and "Number of rows: 25".

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. The top navigation bar includes tabs for Browse, Structure, SQL, Search, Insert, Export, Import, Privileges, and Operations. Below the tabs, a search bar says "Run SQL query/queries on table Mysql_learners.PETSALE:". The SQL pane contains the following code:

```

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

```

Below the SQL pane is a table structure view. The "Table structure" tab is active. The table has five columns: ID, PET, SALEPRICE, SALEDATE, and QUANTITY. The PET column is highlighted with a red box. The table structure details are as follows:

#	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

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.
- Query Editor:** Run SQL query/queries on table Mysql_learners.PETSALe. The query entered is: `ALTER TABLE `PETSALe` CHANGE `PET` `ANIMAL` varchar(20);`.
- Result Panel:** Shows a green success message: "Showing rows 0 - 4 (5 total, Query took 0.0006 seconds.)". Below it, a `select * from `PETSALe`` query is run, displaying the following data:

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

- Table View:** A table view of the same data is shown below the results, with the same columns and data.

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;
```

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

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;
```

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

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

ID	Variety	Quantity
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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