

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:

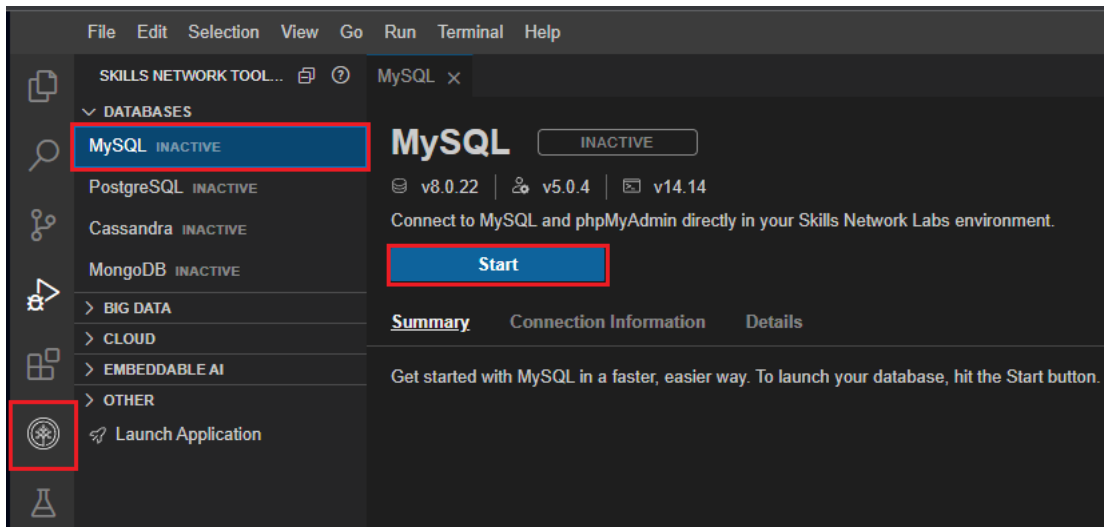
- Create a database.
- Create a new table in a database.
- Add, delete, or modify columns in an existing table.
- Remove all rows from an existing table without deleting the table itself.
- Delete an existing table in a database.

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 **Start**.



2. Once **MySQL** has started, click the **phpMyAdmin** button to open **phpMyAdmin** in the same window.

The screenshot shows a web-based interface for managing MySQL and phpMyAdmin. At the top, there is a menu bar with options: File, Edit, Selection, View, Go, Run, Terminal, and Help. Below the menu, there are tabs for 'MySQL' and 'phpMyAdmin'. The 'MySQL' tab is active, indicated by a green 'ACTIVE' button. The interface displays the MySQL version (v8.0.22), phpMyAdmin version (v5.0.4), and the environment version (v14.14). A message states: 'Connect to MySQL and phpMyAdmin directly in your Skills Network Labs environment.' Below this is a blue 'Stop' button. There are three tabs: 'Summary', 'Connection Information', and 'Details'. The 'Summary' tab is selected. It contains the text: '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.' Below this, the 'Username' is 'malikas' and the 'Password' is masked with a black box. There are copy icons next to both fields. Below the password field, it says 'You can manage MySQL via:' followed by a blue button labeled 'phpMyAdmin' with an external link icon. At the bottom, it says 'Or to interact with the database in the terminal, select one of these options:' followed by two buttons: 'MySQL CLI' and 'New Terminal'.

File Edit Selection View Go Run Terminal Help

MySQL x phpMyAdmin

MySQL

ACTIVE

v8.0.22 | v5.0.4 | v14.14

Connect to MySQL and phpMyAdmin directly in your Skills Network Labs environment.

Stop

Summary Connection Information Details

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.

Username: malikas

Password:

You can manage MySQL via:

phpMyAdmin

Or to interact with the database in the terminal, select one of these options:

MySQL CLI New Terminal

3. You will see the phpMyAdmin GUI tool.

[illegible]

4. In the tree view, click **new** to create a new empty database. Then, enter `Mysql_Learners` as the name of the database, select `utf8_general_ci` from the dropdown, and click **Create**.

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

Databases

SQL

Status

User accounts

Export

Import

Settings

Binary log

Replica

Databases

Create database

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"/>	performance_schema	utf8mb4_0900_ai_ci	✔ Replicated	Check privileges
<input type="checkbox"/>	sys	utf8mb4_0900_ai_ci	✔ Replicated	Check privileges
Total: 4				

☐ 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**

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**.

```
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10
11. 11
12. 12
13. 13

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. );
```

Copied!

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

[Delimiter :] ☐ Show this query here again ☐ Retain query box ☐ Rollback when finished ☒ Enable foreign key checks 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

Recent Favorites

- New
- information_schema
- mysql
- Mysql_learners**
 - New
 - PET
 - PETSALE
- performance_schema
- sys

Server: mysql:3306 » Database: Mysql_learners

Structure SQL Search Query Export Import Operations

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)

✓ 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)

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.

```

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10
11. 11
12. 12
13. 13
14. 14

1. INSERT INTO PETSale VALUES
2.     (1, 'Cat', 450.09, 100.47, '2018-05-29'),
3.     (2, 'Dog', 666.66, 150.76, '2018-06-01'),
4.     (3, 'Parrot', 50.00, 8.9, '2018-06-04'),
5.     (4, 'Hamster', 60.60, 12, '2018-06-11'),
6.     (5, 'Goldfish', 48.48, 3.5, '2018-06-14');
7.
8. INSERT INTO PET VALUES
9.     (1, 'Cat', 3),
10.    (2, 'Dog', 4),
11.    (3, 'Hamster', 2);
12.
13. SELECT * FROM PETSale;
14. SELECT * FROM PET;

```

Copied!

```
1 INSERT INTO PETALE VALUES
2 (1,'Cat',450.09,100.47,'2018-05-29'),
3 (2,'Dog',666.66,150.76,'2018-06-01'),
4 (3,'Parrot',50.00,8.9,'2018-06-04'),
5 (4,'Hamster',60.60,12,'2018-06-11'),
6 (5,'Goldfish',48.48,3.5,'2018-06-14');
7
8 INSERT INTO PET VALUES
9 (1,'Cat',3),
10 (2,'Dog',4),
11 (3,'Hamster',2);
12
13 SELECT * FROM PETALE;
14 SELECT * FROM PET;
```

Showing rows 0 - 4 (5 total, Query took 0.0000 seconds.)

SELECT * FROM PETALE

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

+ Options

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

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

+ Options

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 PETALE 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..

1. 1

2. 2

3. 3

4. 4
1. ALTER TABLE PETALE

2. ADD COLUMN QUANTITY INTEGER;

3.

4. SELECT * FROM PETALE;

Copied!

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

ALTER TABLE PETALE 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 PETALE

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

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

Options

D	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 PETALE 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.

1. 1

2. 2

3. 3

4. 4

5. 5

6. 6

7. 7
1. UPDATE PETALE SET QUANTITY = 9 WHERE ID = 1;

2. UPDATE PETALE SET QUANTITY = 3 WHERE ID = 2;

3. UPDATE PETALE SET QUANTITY = 2 WHERE ID = 3;

4. UPDATE PETALE SET QUANTITY = 6 WHERE ID = 4;

5. UPDATE PETALE SET QUANTITY = 24 WHERE ID = 5;

6.

7. SELECT * FROM PETALE;

Copied!

```
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**.

1. 1

2. 2

3. 3

4. 4
1. ALTER TABLE PETSale

2. DROP COLUMN PROFIT;

3.

4. SELECT * FROM PETSale;

Copied!

Browse

Structure

SQL

Search

Insert

Run SQL query/queries on table Mysql_learners.PETSale:

1 ALTER TABLE PETSale

2 DROP COLUMN PROFIT;

3

4 SELECT * FROM PETSale;

+ Options

ID	PET	SALEPRICE	SALEDATE	QUA
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	

☐ Show all | 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**.

1. 1

2. 2

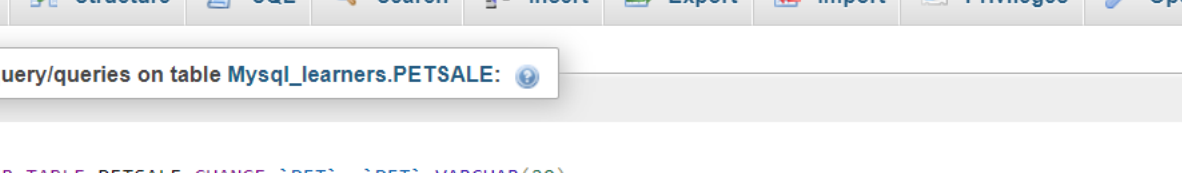
3. 3
1. ALTER TABLE PETSale

2. MODIFY PET VARCHAR(20);

3. SELECT * FROM PETSale;


Copied!


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.


















Run SQL query/queries on table Mysql_learners.PETSALE:

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


Table structure


Relation view

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	ID	int			No	None			 Change  Drop  More
<input type="checkbox"/>	2	PET	varchar(20)	utf8mb4_0900_ai_ci		Yes	NULL			 Change  Drop  More
<input type="checkbox"/>	3	SALEPRICE	decimal(6,2)			Yes	NULL			 Change  Drop  More
<input type="checkbox"/>	4	SALEDATE	date			Yes	NULL			 Change  Drop  More
<input type="checkbox"/>	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.

```
1. 1
2. 2
3. 3

1. ALTER TABLE `PETSale` CHANGE `PET` `ANIMAL` varchar(20);
2.
3. SELECT * FROM PETSale;
```

Copied!

Run SQL query/queries on table Mysql_learners.PETSALE:

```
1 ALTER TABLE `PETSALE` CHANGE `PET` `ANIMAL` varchar(20);
```

Showing rows 0 - 4 (5 total, Query took 0.0006 seconds.)

```
select * from `PETSALE`
```

☐ Show all

Number of rows: 25

Filter rows:

- Options

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

☐ Show all

Number of rows: 25

Filter rows:

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.

```
1. 1
2. 2
3. 3

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

Copied!

Run SQL query/queries on table Mysql_learners.PETSALE:

```

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.

1. 1
 2. 2
 3. 3
- ```

1. DROP TABLE PET;
2.
3. SELECT * FROM PET;

```

Copied!

Run SQL query/queries on table Mysql\_learners.PETSALE:

```

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       |
| 2  | Balls    | 50       |

| ID | Variety      | Quantity |
|----|--------------|----------|
| 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.

### Author(s)

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### Changelog

| Date       | Version | Changed by                   | Change Description                  |
|------------|---------|------------------------------|-------------------------------------|
| 2023-10-10 | 0.7     | Mercedes Schneider           | QA Pass w/Edits                     |
| 2023-10-07 | 0.6     | Misty Taylor                 | ID Check                            |
| 2023-09-09 | 0.5     | Abhishek Gagneja             | Updated instructions                |
| 2022-10-28 | 0.4     | Appalabhaktula Hema          | Updated instructions                |
| 2022-07-27 | 0.3     | Lakshmi Holla                | updated html tag                    |
| 2022-06-04 | 0.2     | Lakshmi Holla, Malika Singla | Updated the MySQL starting commands |
| 2021-11-01 | 0.1     | Lakshmi Holla, Malika Singla | Initial Version                     |

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