

Basic Database Operations-I

<https://github.com/KrishnaMentor/CN-01-MWF/tree/main/SQL>

MySQL Workbench/ Command Line

GUI [Graphical User Interface] - Format



Command Based Application

```
MySQL 8.0 Command Line Cli  X  +  ▾
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.42 MySQL Community Server - GPL

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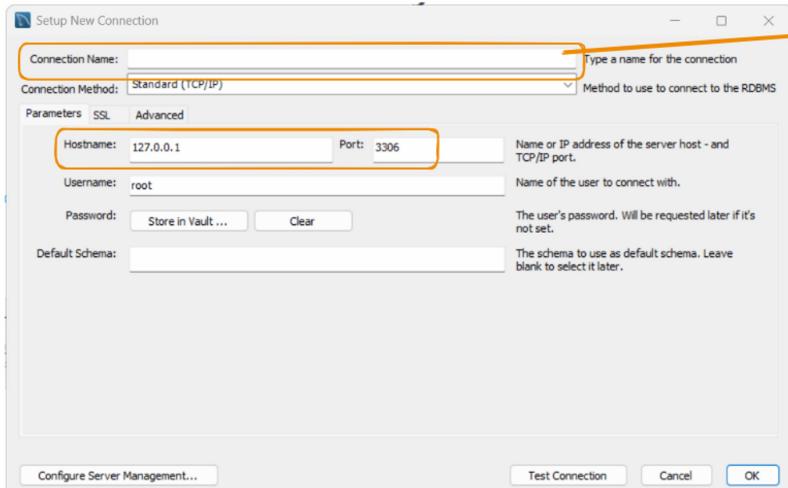
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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

MySQL Connections

Create a new Connection.

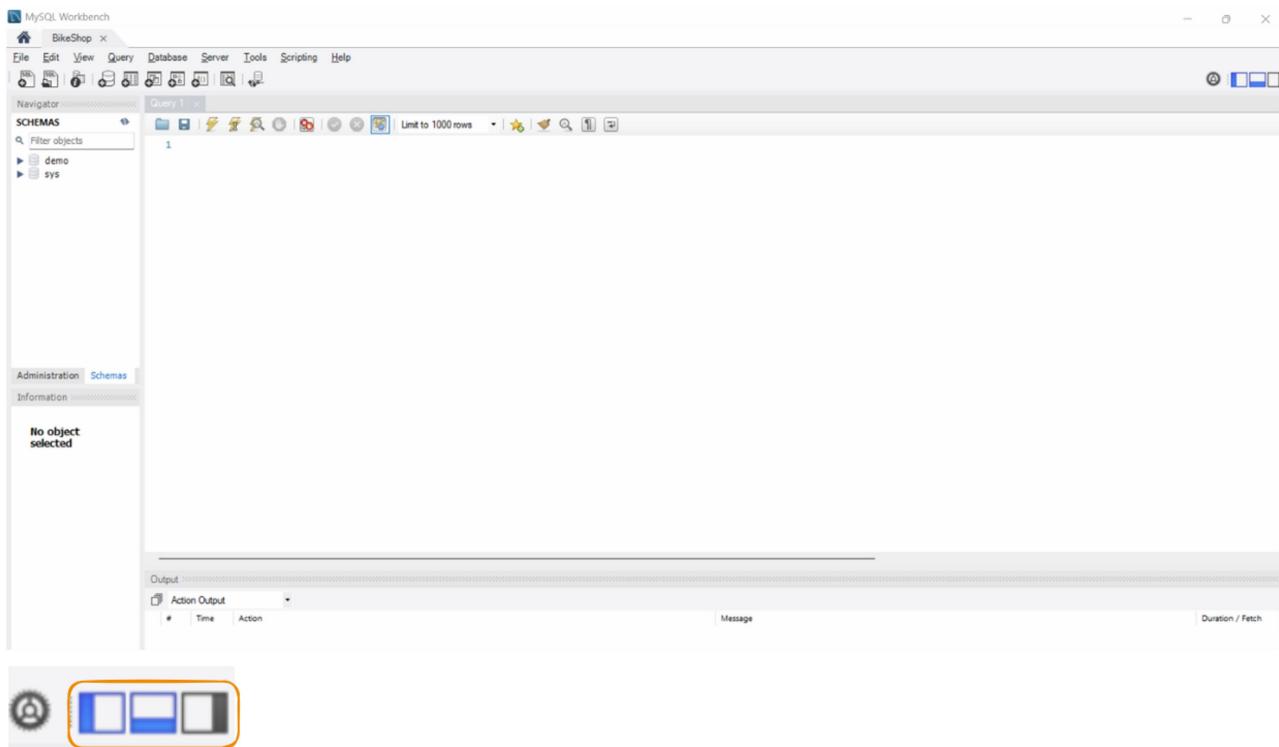
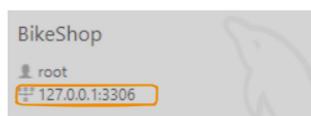


BikeShop

"hello world"

helloworld - Camel Case

hello_world - Snake Case



Navigator

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema

Administration **Schemas**

Navigator

SCHEMAS

Filter objects

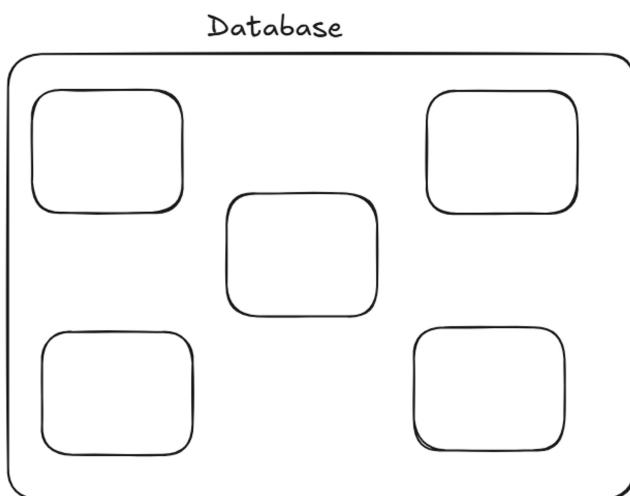
- demo
- sys

Query 1

SCHEMAS

Run a complete sql file

Run the sql file where the cursor is active



Creating a Database

CREATE DATABASE <database name>

SCHEMAS

Filter objects

- bike_shop
- demo
- sys

1 CREATE DATABASE bike_shop;

Output

Action Output

#	Time	Action
1	21:46:21	CREATE DATABASE bike_shop

- 1 21:46:21 CREATE DATABASE bike_shop
 2 21:47:57 CREATE DATABASE bike_shop

Message
 1 row(s) affected

Error Code: 1007. Can't create database 'bike_shop': database exists

SCHEMAS

Filter objects

- bike_shop
- bikeshop
- demo
- sys

How can we see all the databases that exist within a schema in Command line?

Show Databases;

```
mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| bike_shop |
| bikeshop  |
| demo      |
| information_schema |
| mysql     |
| performance_schema |
| shop      |
| sys       |
+-----+
8 rows in set (0.00 sec)
```

```
mysql> CREATE DATABASE CodingNinja;
Query OK, 1 row affected (0.01 sec)
```

```
mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| bike_shop |
| bikeshop  |
| codingninja |
| demo      |
| information_schema |
| mysql     |
| performance_schema |
| shop      |
| sys       |
+-----+
9 rows in set (0.00 sec)
```

SCHEMAS

Filter objects

- bike_shop
- bikeshop
- codingninja**
- demo
- information_schema
- mysql
- performance_schema
- shop
- sys

DROP DATABASE Shop;
 Execute the statement under the keyboard cursor

If we don't need the database can we delete them?

DROP Database <database name>;

The name of the database should have same name as when we use to create it.

```
CREATE
```

```
DATABASE
```

```
Shop;
```

```
DROP DATABASE codingninja;
```

```
DROP database shop;
```

```
DROP DATABASE bikeshop;
```

If we have multiple databases present & we need to switch between multiple databases as 2 different databases have different table. How to switch between them?

If you don't know the location of the database?
Would it be possible for you to add table inside it.

Bike Shop Database

USE bike_shop; > Then only it would be possible to create a table inside it.

```
mysql> CREATE Database shop;
Query OK, 1 row affected (0.01 sec)

mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| bike_shop |
| demo      |
| information_schema |
| mysql     |
| performance_schema |
| shop      |
| sys       |
+-----+
7 rows in set (0.00 sec)
```

```
mysql> USE bike_shop;
Database changed
mysql> SELECT DATABASE();
+-----+
| DATABASE() |
+-----+
| bike_shop   |
+-----+
1 row in set (0.00 sec)
```

Try to Run : Select Database() before using it.

null

"You haven't selected the database yet."

```
mysql> system cls [It cleans the command line]
```

```
mysql> SELECT DATABASE();
+-----+
| DATABASE() |
+-----+
| bike_shop   |
+-----+
1 row in set (0.00 sec)

mysql> USE Shop;
Database changed
mysql> SELECT DATABASE();
+-----+
| DATABASE() |
+-----+
| shop        |
+-----+
1 row in set (0.00 sec)
```

Summary :

- Always start with this code in MySQL:
- 1. SHOW DATABASES;
- 2. CREATE DATABASE <db name>;
- 3. USE <db_name>;
- 4. SELECT DATABASE();

2 Scenario possible?

- We can create the tables manually.

```
- CREATE TABLE <Table Name>(
    column_name data_type constraint,
    column_name data_type constraint
);
```

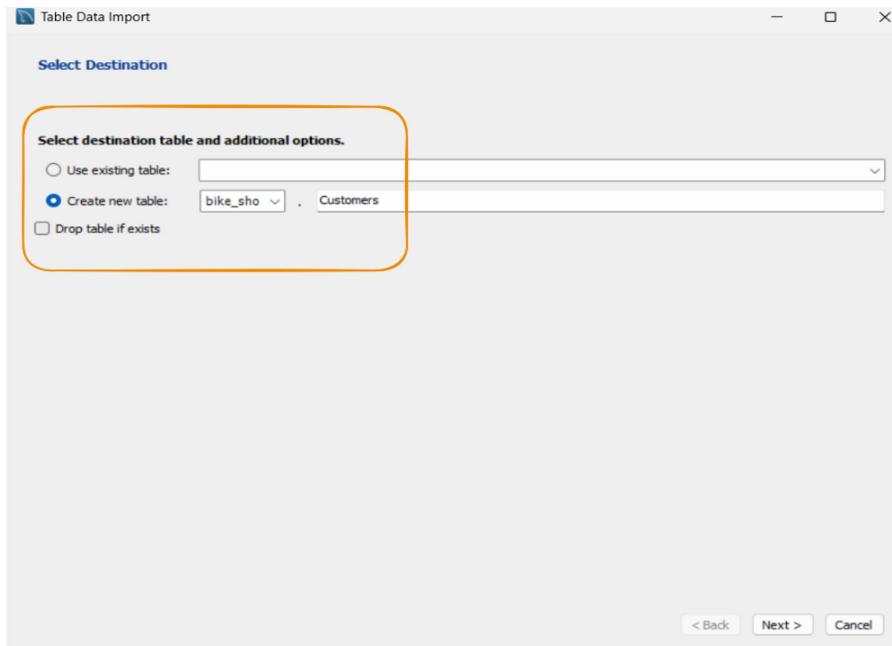
- Importing the tables using import option. [Workbench]

The screenshot shows the MySQL Workbench interface. On the left, the database tree displays a schema named 'bike_'. A context menu is open over this schema, with the 'Table Data Import Wizard' option highlighted by a yellow box.

Below the schema tree is a file browser window titled 'w folder'. It lists several files and folders:

Name	Date modified	Type	Size
Master Sales FY	21-04-2025 16:18	File folder	
Product Details	21-04-2025 16:17	File folder	
Calendar	23-04-2025 22:34	Microsoft Excel Comma Separated Values...	16 KB
Customers	23-04-2025 22:34	Microsoft Excel Comma Separated Values...	236 KB
ProductCategories	23-04-2025 22:34	Microsoft Excel Comma Separated Values...	1 KB
Products	23-04-2025 22:35	Microsoft Excel Comma Separated Values...	57 KB
ProductSubcategories	23-04-2025 22:34	Microsoft Excel Comma Separated Values...	1 KB
Returns	23-04-2025 22:35	Microsoft Excel Comma Separated Values...	34 KB
Sales2015	23-04-2025 22:36	Microsoft Excel Comma Separated Values...	119 KB
Sales2016	23-04-2025 22:36	Microsoft Excel Comma Separated Values...	1,059 KB
Sales2017	23-04-2025 22:36	Microsoft Excel Comma Separated Values...	1,291 KB
Territories	23-04-2025 22:35	Microsoft Excel Comma Separated Values...	1 KB

At the bottom of the image is a 'Table Data Import' dialog box. It has a 'Select File to Import' section with a 'File Path' field containing 'C:\Users\krish\Documents\SQL Dataset\Product Details\Customers.csv' and a 'Browse...' button. The 'Next >' button at the bottom right of the dialog is also highlighted with a yellow box.



Configure Import Settings

Detected file format: csv

Encoding: utf-8

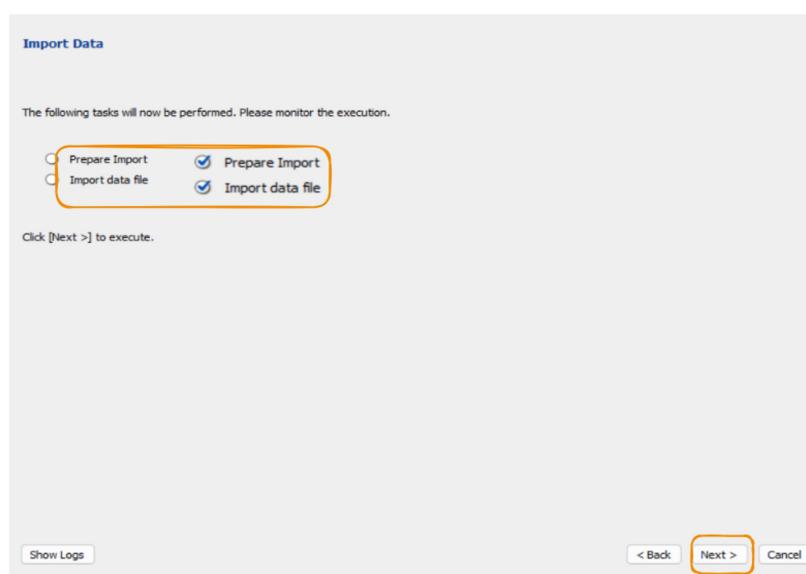
Columns:

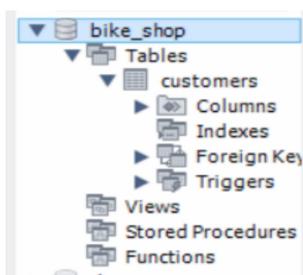
Source Column	Field Type
CustomerKey	int
Prefix	text
FirstName	text
LastName	text
BirthDate	text
MyUnknownColumn	text

CustomerKey Prefix FirstName LastName BirthDate MyUnknown... MaritalStatus Gender EmailAddress AnnualI
11000 MR. JON YANG 04/08/1966 M M jon24@ear... \$90,00C
11001 MR. EUGENE HUANG 14/05/1965 S M eugene10... \$60,00C
11002 MR. RUBEN TORRES 08/12/1965 M M ruben35@l... \$60,00C
11003 MS. CHRISTY ZHU 15/02/1968 S F christy12@l...

< Back Next > Cancel

This screenshot shows the 'Configure Import Settings' step. It displays the detected CSV file format and encoding. Below, a table lists the columns with their corresponding field types. A preview of the data is shown in a grid format. A large orange rectangle highlights the preview data area. The 'Next >' button is also highlighted.





```
mysql> USE bike_shop;
Database changed
mysql> SELECT DATABASE();
+-----+
| DATABASE() |
+-----+
| bike_shop   |
+-----+
1 row in set (0.00 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_bike_shop |
+-----+
| customers           |
+-----+
1 row in set (0.00 sec)
```

```
mysql> DESCRIBE Customers;
+-----+-----+-----+-----+-----+-----+-----+
| Field    | Type   | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| CustomerKey | int    | YES  |      | NULL    |       |
| Prefix     | text   | YES  |      | NULL    |       |
| FirstName  | text   | YES  |      | NULL    |       |
| LastName   | text   | YES  |      | NULL    |       |
| BirthDate  | text   | YES  |      | NULL    |       |
| MyUnknownColumn | text  | YES  |      | NULL    |       |
| MaritalStatus | text   | YES  |      | NULL    |       |
| Gender     | text   | YES  |      | NULL    |       |
| EmailAddress | text  | YES  |      | NULL    |       |
| AnnualIncome | text  | YES  |      | NULL    |       |
| TotalChildren | int   | YES  |      | NULL    |       |
| EducationLevel | text  | YES  |      | NULL    |       |
| Occupation  | text   | YES  |      | NULL    |       |
| HomeOwner   | text   | YES  |      | NULL    |       |
| Phone_number | bigint | YES  |      | NULL    |       |
+-----+-----+-----+-----+-----+-----+-----+
15 rows in set (0.01 sec)
```

DDL Command is being used to change the structure of tables.

- Fields - Column Headers or Column Name of Customer Table.
- Type - is the datatype of each individual column.
- Null [Optional] - Yes means, all that column may have null values,
 - No means , that column wouldn't allow null values.
- Key - It shows which column is considered as Primary Key [Pri]
Or Foreign Key [MUL]
- Default - is the parameter that you can define default for each column as a backup option otherwise NULL as the last option.
- EXTRA - to add extra constraint, [Auto_increment] - Primary Key

```

6 • SHOW DATABASES;
7 • USE bike_shop;
8 • SELECT DATABASE();
9 • SHOW TABLES;
10 • DESC Customers;

```

Field	Type	Null	Key	Default	Extra
CustomerKey	int	YES		HULL	
Prefix	text	YES		HULL	
FirstName	text	YES		HULL	
LastName	text	YES		HULL	
BirthDate	text	YES		HULL	
MyUnknownColumn	text	YES		HULL	
MaritalStatus	text	YES		HULL	
Gender	text	YES		HULL	
EmailAddress	text	YES		HULL	
AnnualIncome	text	YES		HULL	
TotalChildren	int	YES		HULL	
EducationLevel	text	YES		HULL	

Field	Type	Null	Key	Default	Extra
CustomerKey	int	YES			NULL
Prefix	text	YES			NULL
FirstName	text	YES			NULL
LastName	text	YES			NULL
BirthDate	text	YES			NULL
MyUnknownColumn	text	YES			NULL
MaritalStatus	text	YES			NULL
Gender	text	YES			NULL
EmailAddress	text	YES			NULL
AnnualIncome	text	YES			NULL
TotalChildren	int	YES			NULL
EducationLevel	text	YES			NULL
Occupation	text	YES			NULL
HomeOwner	text	YES			NULL
Phone_number	bigint	YES			NULL

15 rows in set (0.00 sec)

```
12 • SELECT * FROM Customers;
```

CustomerKey	Prefix	FirstName	LastName	BirthDate	MyUnknownColumn	MaritalStatus	Gender	EmailAddress	AnnualIncome	TotalChildren	EducationLevel	Occupation	HomeOwner	Phone_number
11000	MR.	JON	YANG	04/08/1966		M	M	jon24@learnsector.com	\$90,000	2	Bachelors	Professional	Y	6697921661
11001	MR.	EUGENE	HUANG	14/05/1965		S	M	eugene10@learnsector.com	\$60,000	3	Bachelors	Professional	N	8586376955
11002	MR.	RUBEN	TORRES	08/12/1965		M	M	ruben35@learnsector.com	\$60,000	3	Bachelors	Professional	Y	6528852745
11003	MS.	CHRISTY	ZHU	15/02/1968		S	F	christy12@learnsector.com		0	Bachelors	Professional	N	3646568427
11004	MRS.	ELIZABETH	JOHNSON	08/08/1968		S	F	elizabeth5@learnsector.com	\$80,000	5	Bachelors	Professional	Y	7132265883
11005	MR.	JULIO	RUIZ	08/05/1965		S	M	julio1@learnsector.com	\$70,000	0	Bachelors	Professional	Y	1902716743
11007	MR.	MARCO	MEHTA	05/09/1964		M	M	marco14@learnsector.com	\$60,000	3	Bachelors	Professional	Y	4203325209
11008	MRS.	ROBIN	VERHOFF	07/07/1964		S	F	rob4@learnsector.com	\$60,000	4	Bachelors	Professional	Y	2866694333
11009	MR.	SHANNON	CARLSON	04/01/1964		S	M	shannon38@learnsector.com	\$70,000	0	Bachelors	Professional	N	3417265787
11010	MS.	JACQUELYN	SUREZ	02/06/1964		S	F	jacquelyn20@learnsector.com	\$70,000	0	Bachelors	Professional	N	3166486176
11011	MR.	CURTIS	LU	11/04/1963		M	M	curtis9@learnsector.com	\$60,000	4	Bachelors	Professional	Y	8338877898
11012	MRS.	LAUREN	WALKER	18/01/1968		M	F	lauren41@learnsector.com	\$100,000	2	Bachelors	Management	Y	8043834080

```
mysql> SELECT * FROM Customers LIMIT 10;
```

CustomerKey	Prefix	FirstName	LastName	BirthDate	MyUnknownColumn	MaritalStatus	Gender	EmailAddress	AnnualIncome	TotalChildren	EducationLevel	Occupation	HomeOwner	Phone_number
11806	MR.	JON	YANG	04/08/1966		M	M	jon24@learnsector.com	\$98,000	2	Bachelors	Professional	Y	669791661
11801	MR.	EUGENE	HUANG	14/05/1965		S	M	eugene10@learnsector.com	\$68,000	3	Bachelors	Professional	N	8586376955
11802	MR.	RUBEN	TORRES	05/12/1965		M	M	ruben35@learnsector.com	\$68,000	3	Bachelors	Professional	Y	6528852745
11803	MR.	CHRISTY	JONES	12/01/1966		S	F	christy12@learnsector.com	\$80,000	1	Bachelors	Professional	N	304077279
11804	MRS.	ELIZABETH	JOHNSON	08/08/1968		S	F	elizabth8@learnsector.com	\$80,000	5	Bachelors	Professional	Y	717265803
11805	MR.	JULIO	RUIZ	08/05/1965		S	M	julio10@learnsector.com	\$78,000	6	Bachelors	Professional	Y	1982716743
11807	MR.	MARCO	MEHTA	05/09/1964		M	M	marco14@learnsector.com	\$68,000	3	Bachelors	Professional	Y	4203325269
11808	MRS.	ROBIN	VERHOFF	07/07/1964		S	F	rob@learnsector.com	\$68,000	4	Bachelors	Professional	Y	2866694333
11809	MR.	SHANNON	CARLSON	04/01/1964		S	M	shannon38@learnsector.com	\$78,000	8	Bachelors	Professional	N	3417265787
11810	MS.	JACQUELYN	SUAREZ	02/06/1964		S	F	jacquelyn20@learnsector.com	\$78,000	0	Bachelors	Professional	N	3166486176

10 rows in set (0.00 sec)