Data Warehousing with IBM Cloud Db2 Warehouse

Cloud Computing

Nalaya Thiran Project

by

Aashif Ali N	**211521104001**
K.S.Nithish Kumar	211521104099
K.Prabakar	211521104108
N.Maheshwaran	211521104084
P.Praveen Kumar	211521104114

from

Panimalar Institute of Technology

B.E

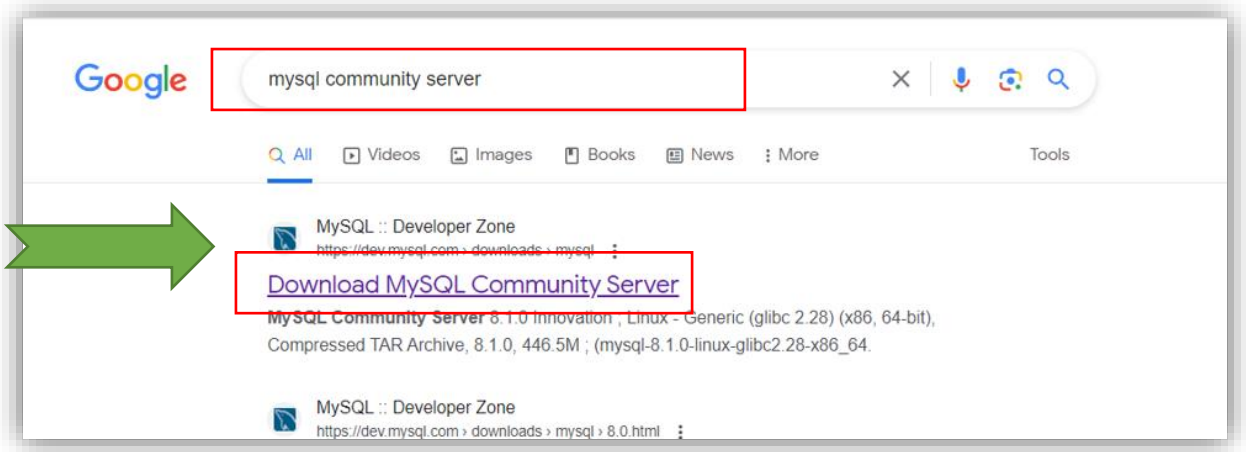
Computer Science Engineering

Phase 4

The IBM DB2 lite version, as of phase 2, only allows us to import data, perform ETL procedures, and query datasets.With these constraints, we are unable to perform additional operations such as adding users and granting database rights so that they can explore and analyze our data for business insights.

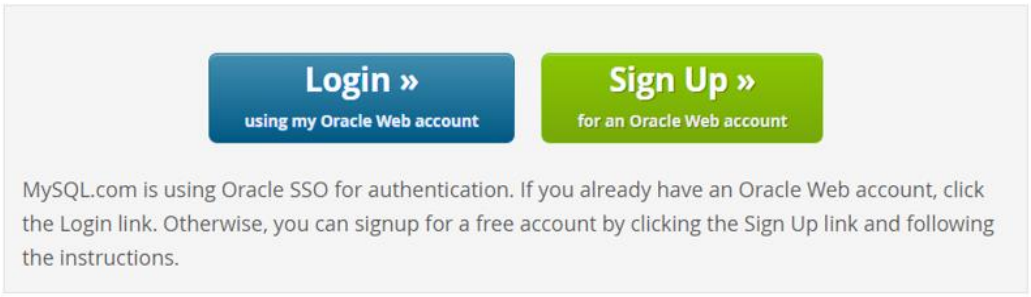
So we downloaded and installed MySQL Community Server to create a server and generate a database, as well as DBeaver to run SQL queries on the datasets and create new users for the data architects.

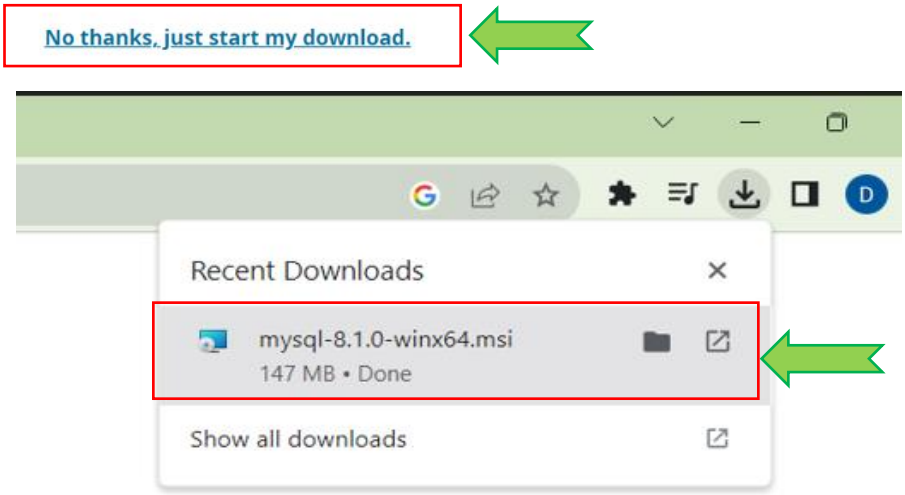
- The first step is search mysql community server in google and choose the correct website.



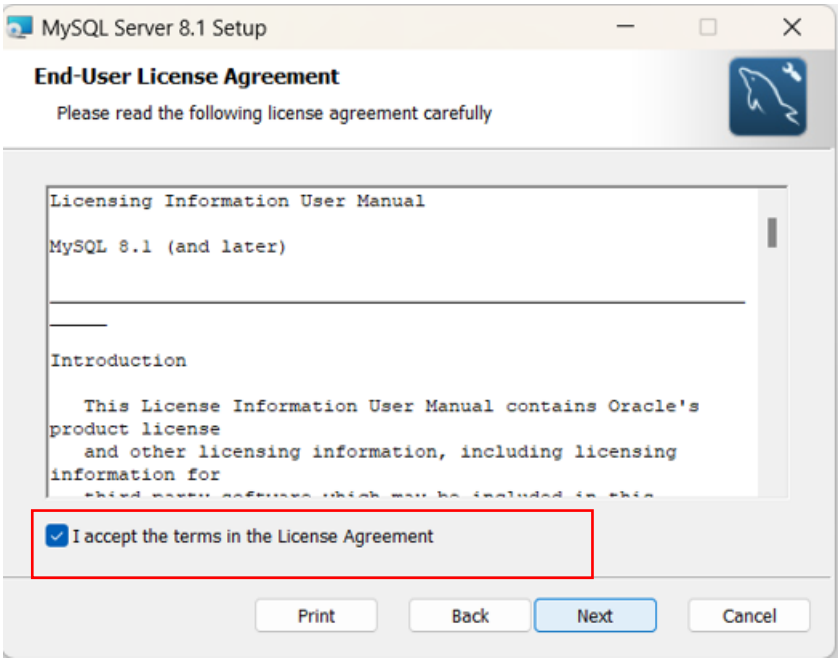
- After entering into the website click the download button of windows MSI Installer.

- Avoid logging in and click the no thanks button and start the download.

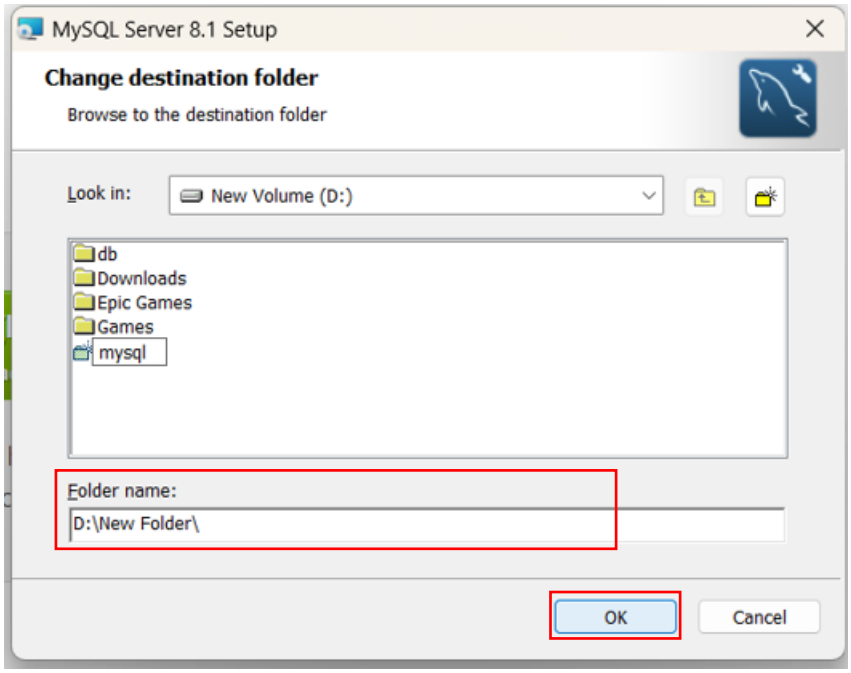


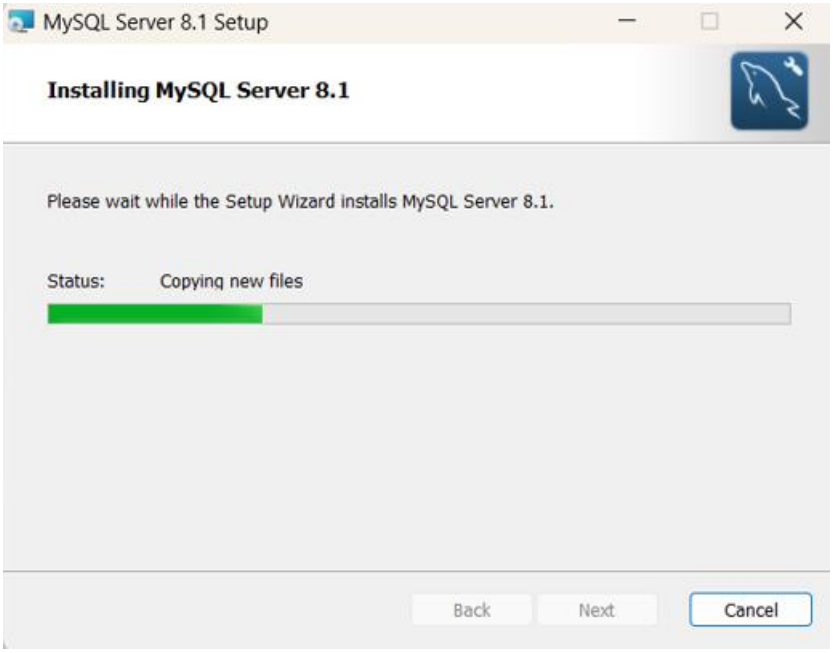


- Accept the agreement and click next.

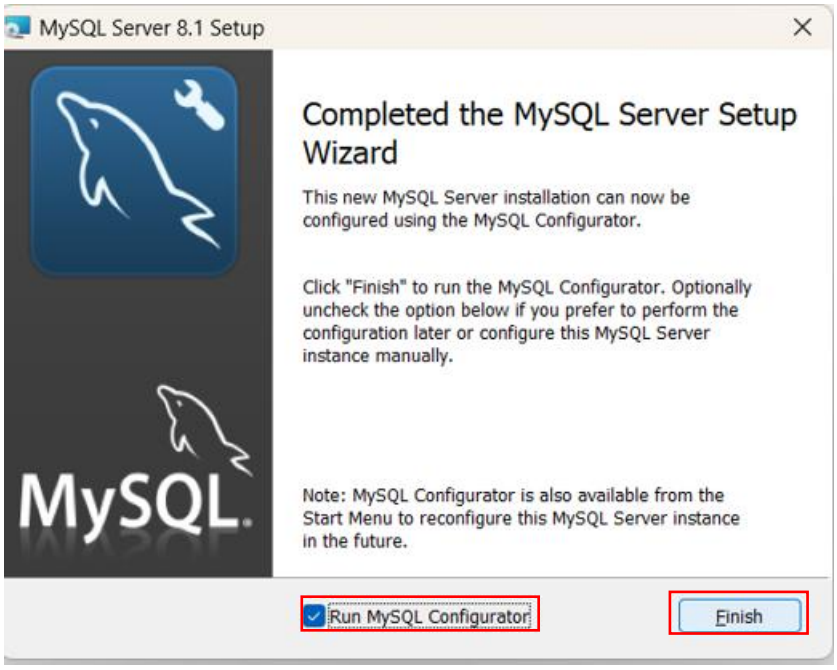


- Edit the path.

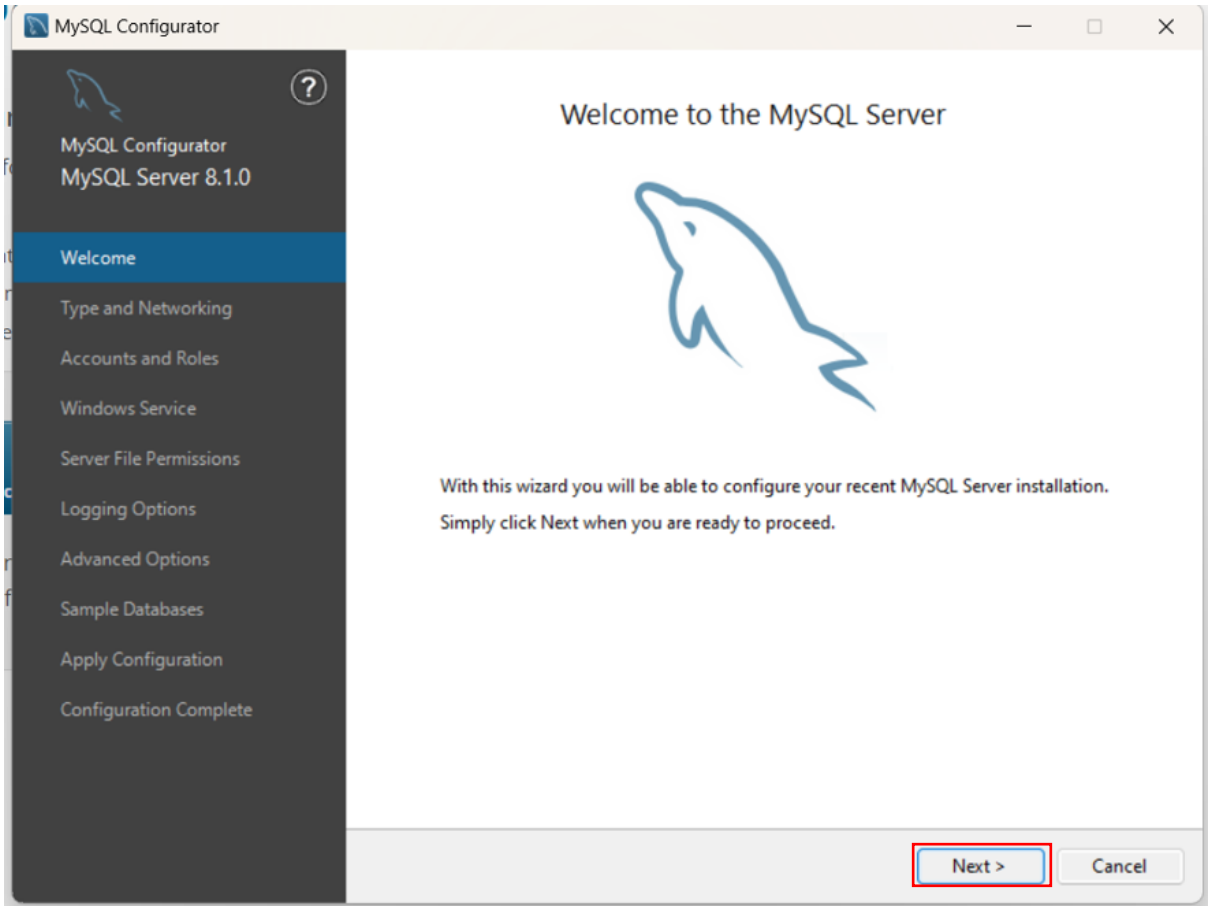




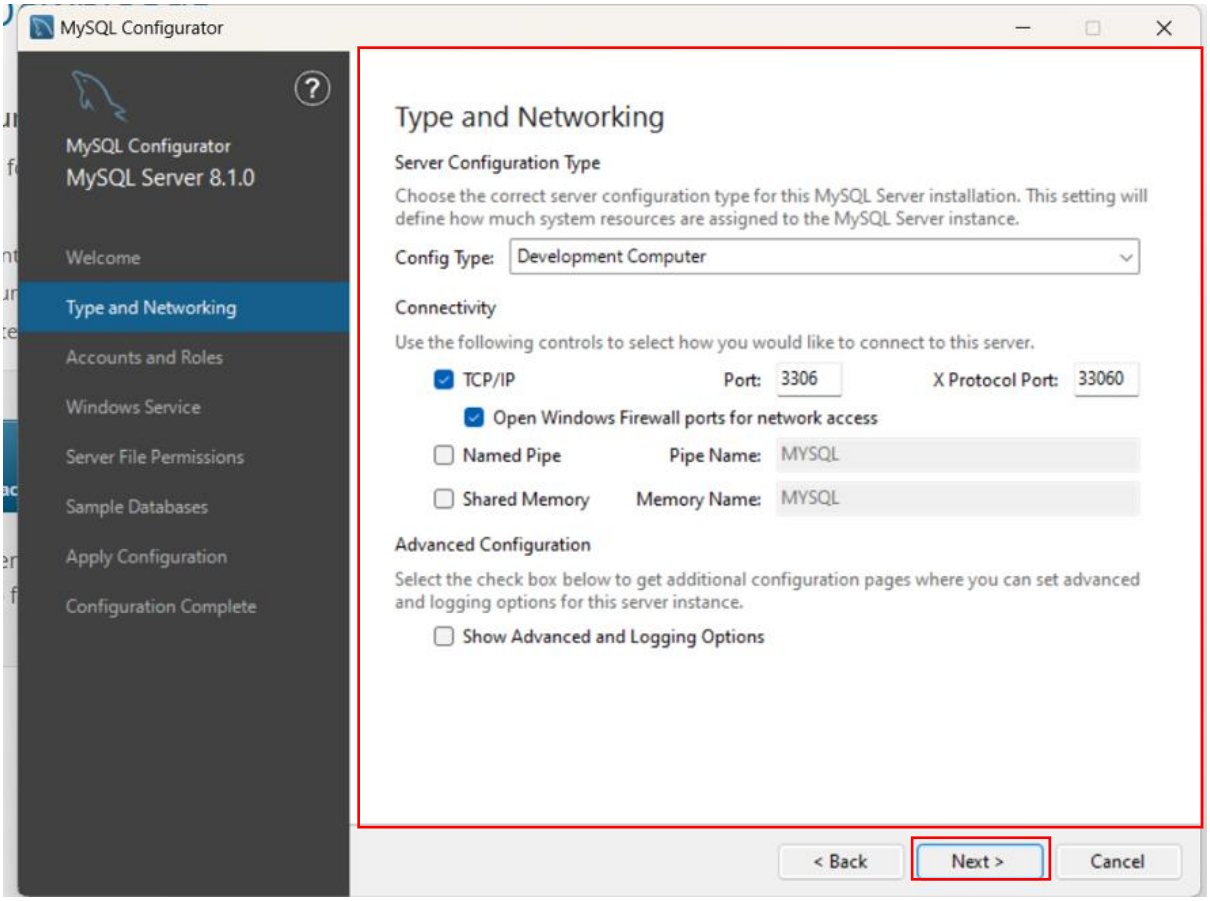
- Finish and run mysql.



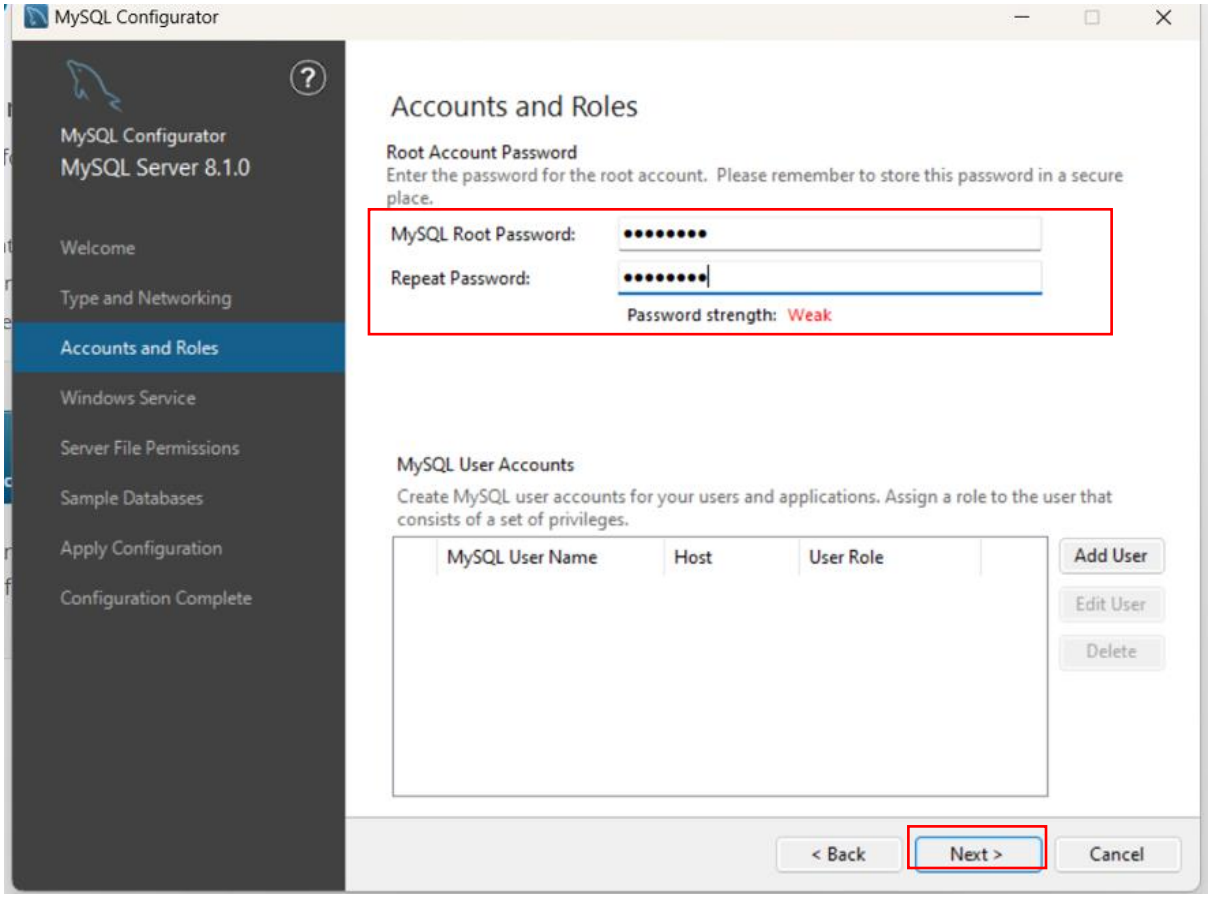
➢ The second step is to run the MySQL configurtor.



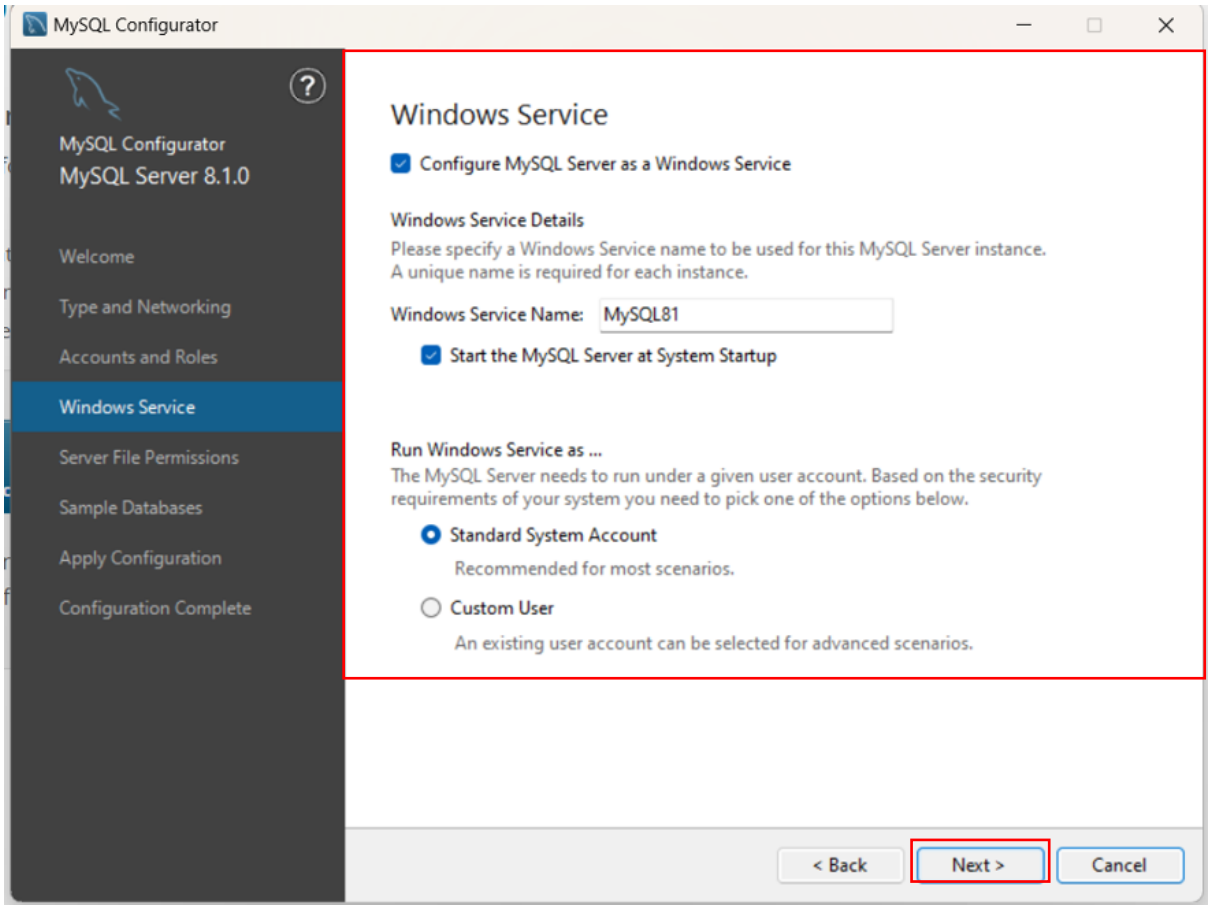
- Fill the correct details and click next.



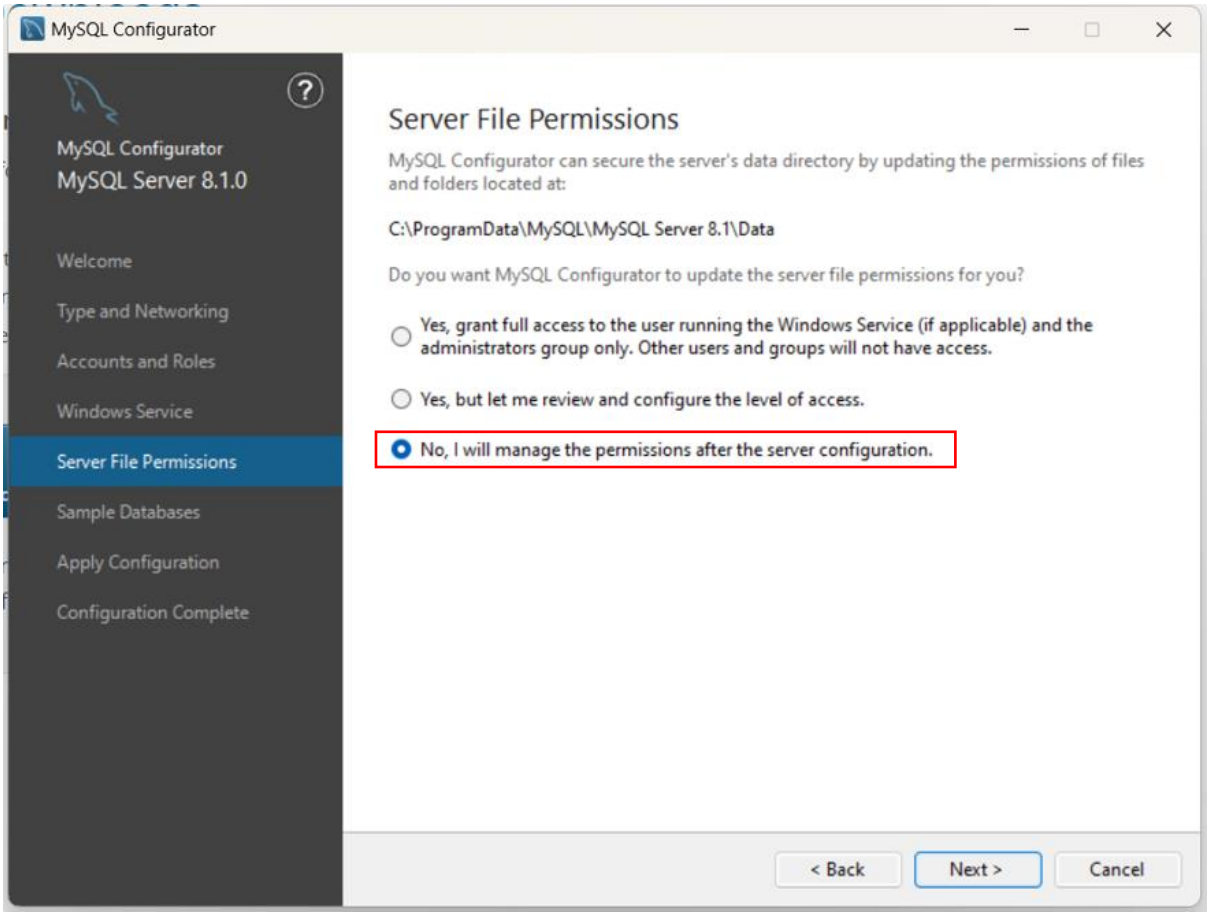
- Create a password for the database and root is the default username for the database.



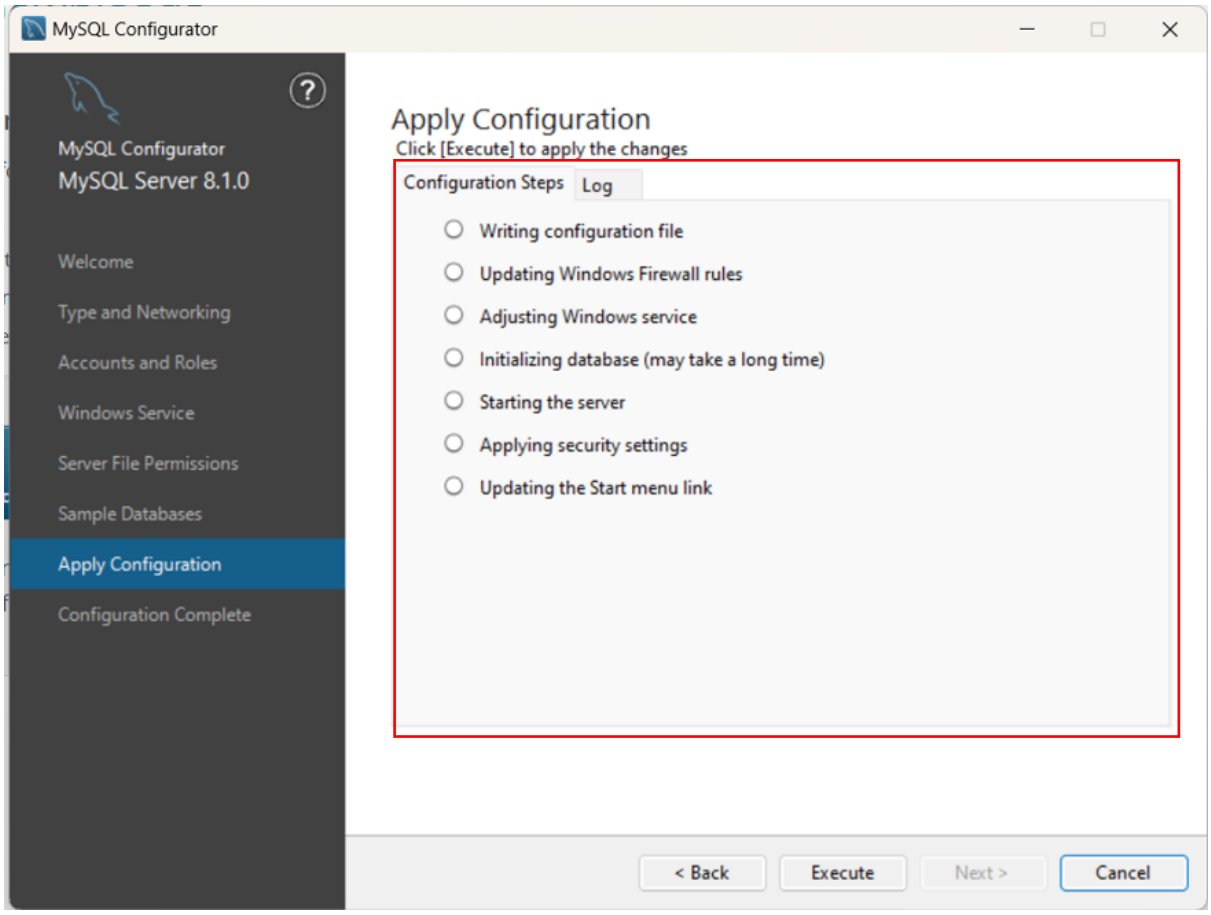
- Choose Standard System Account and click next.



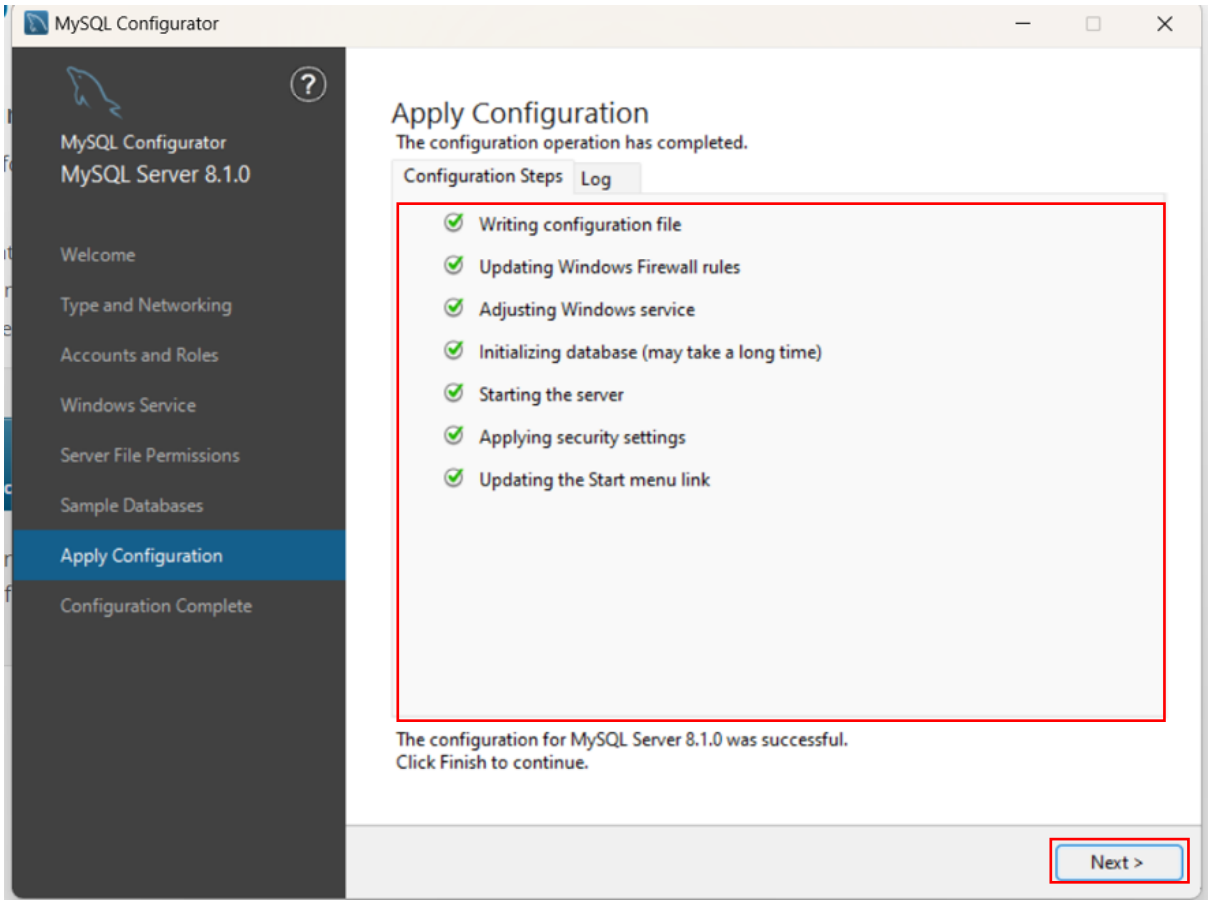
- Choose the last option so that we can manage the permissions of the users and click next.



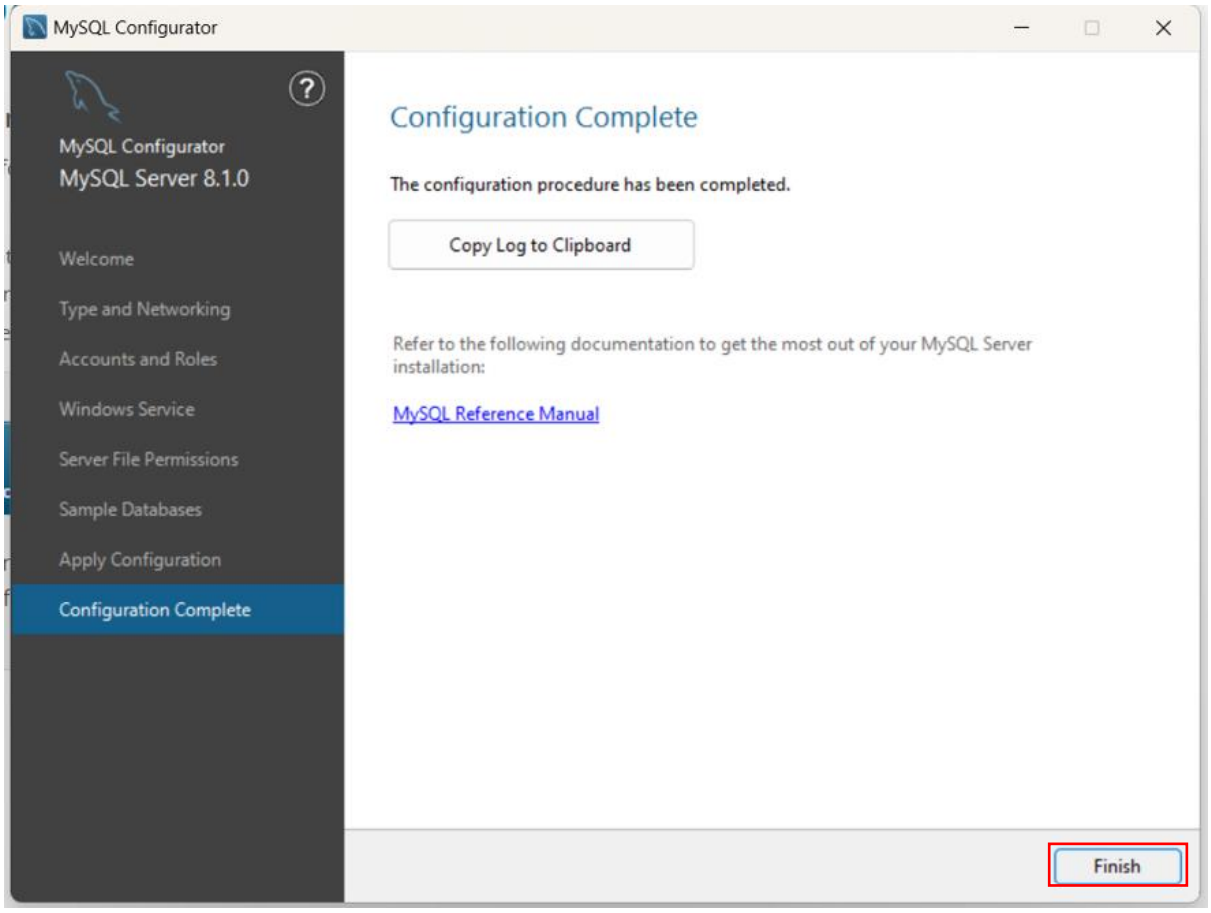
- Now apply configuration.



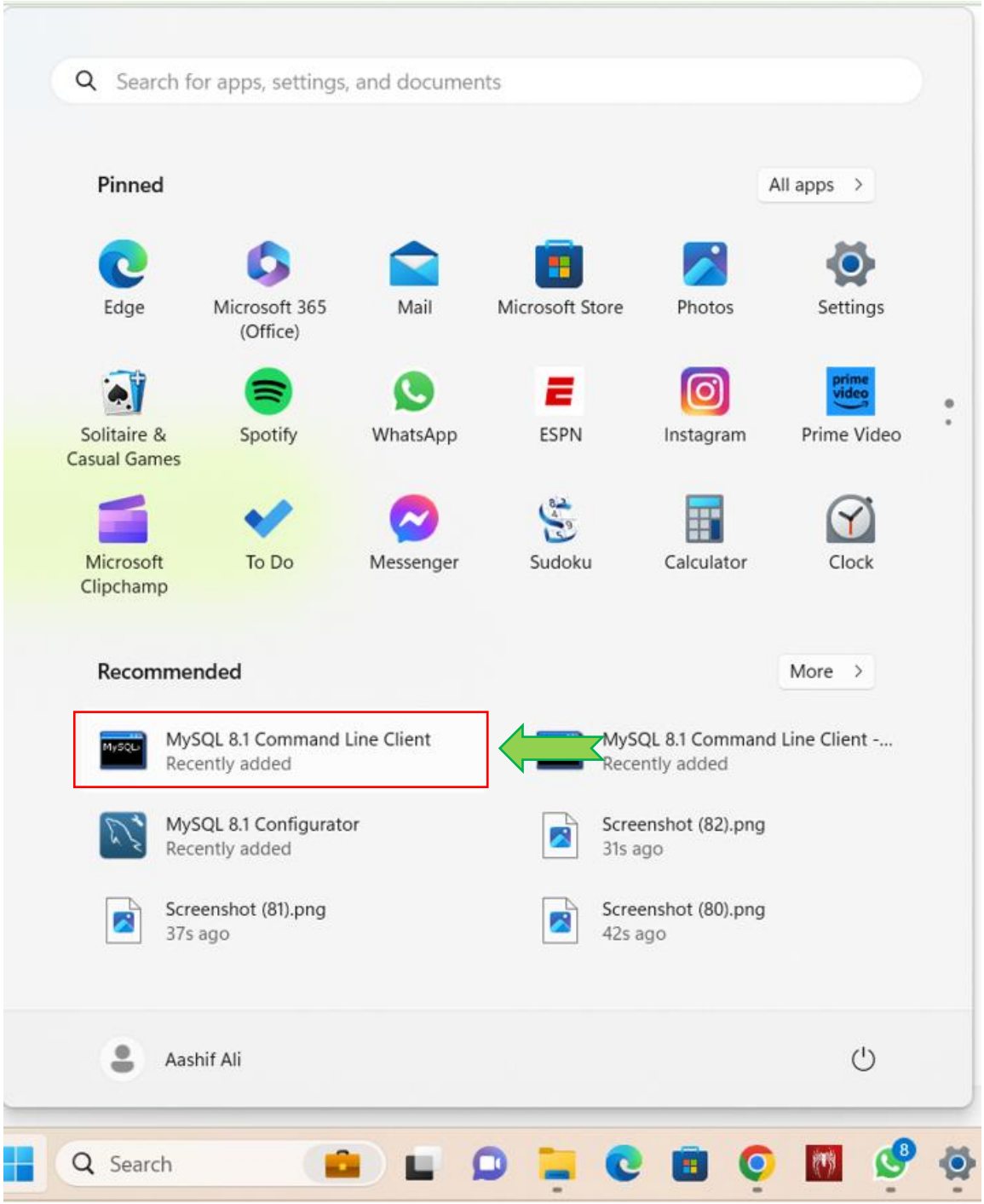
- After the configuration is finished click next.



- Now click the finish and ok buttons.

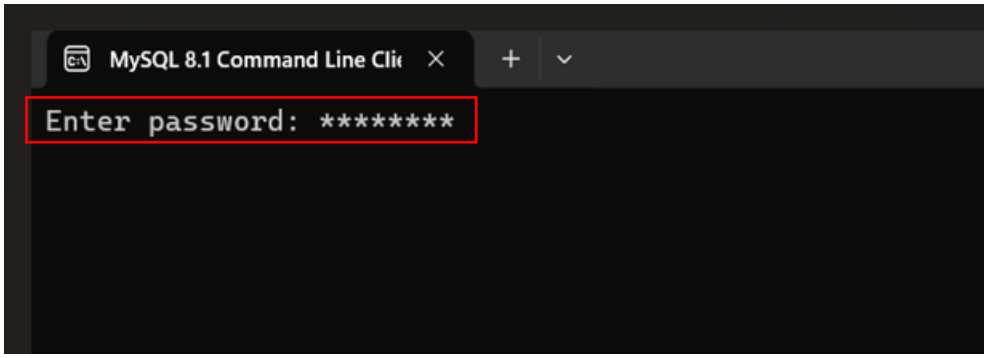


➢ The thirdstep is to work with the MySQL Command Line Client.

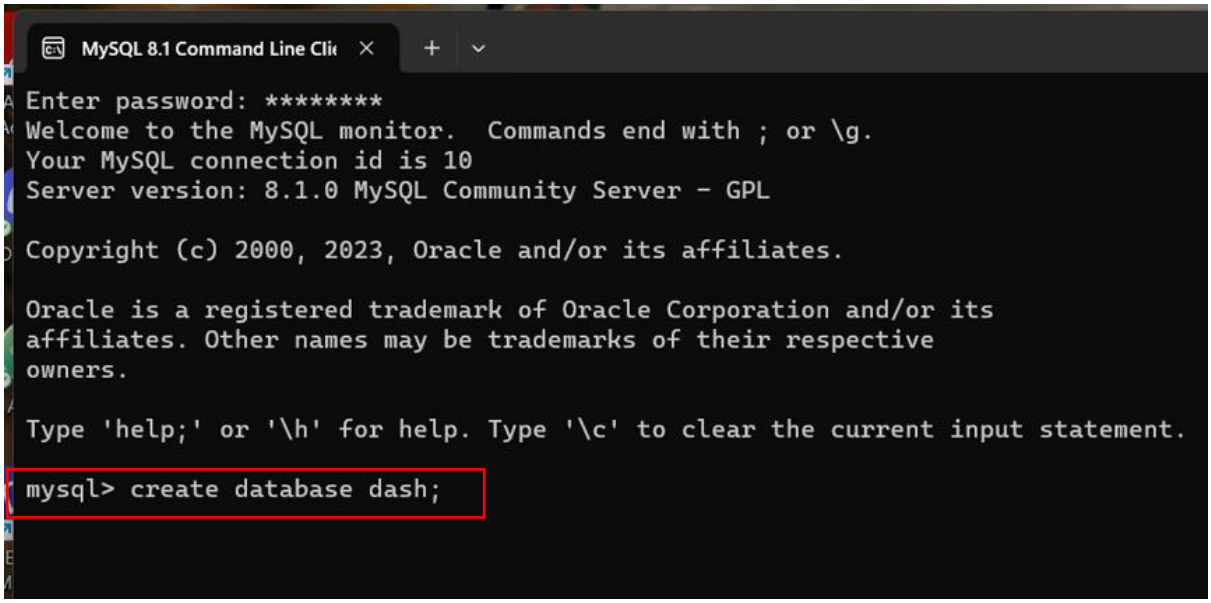


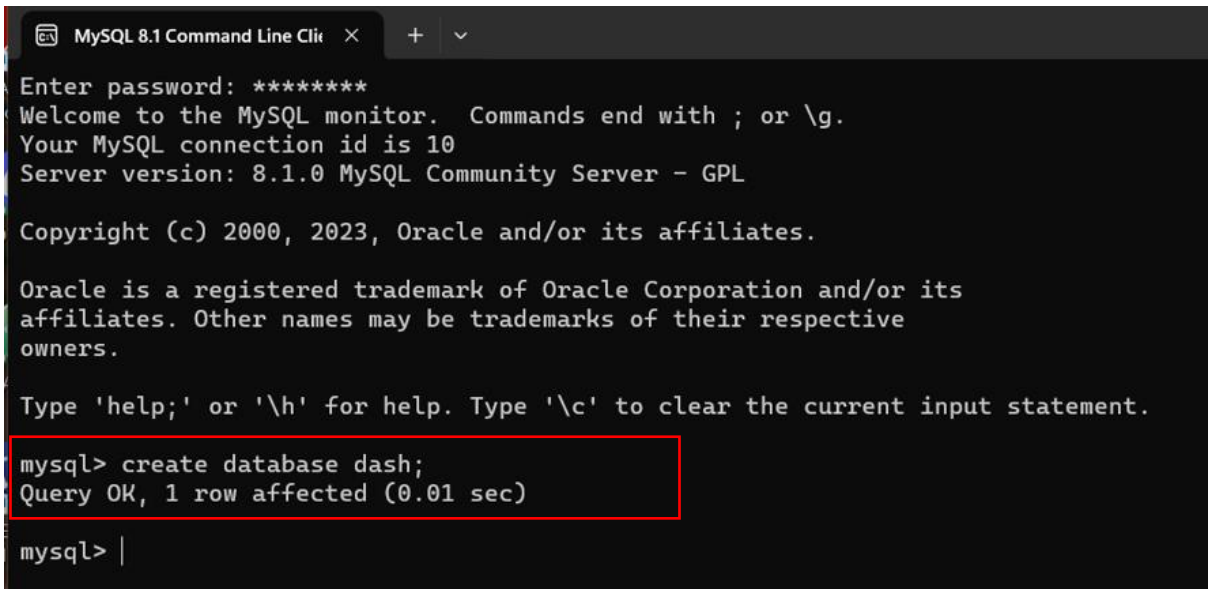
- Open the MySQL 8.1 Command Line Client.

- Enter the password

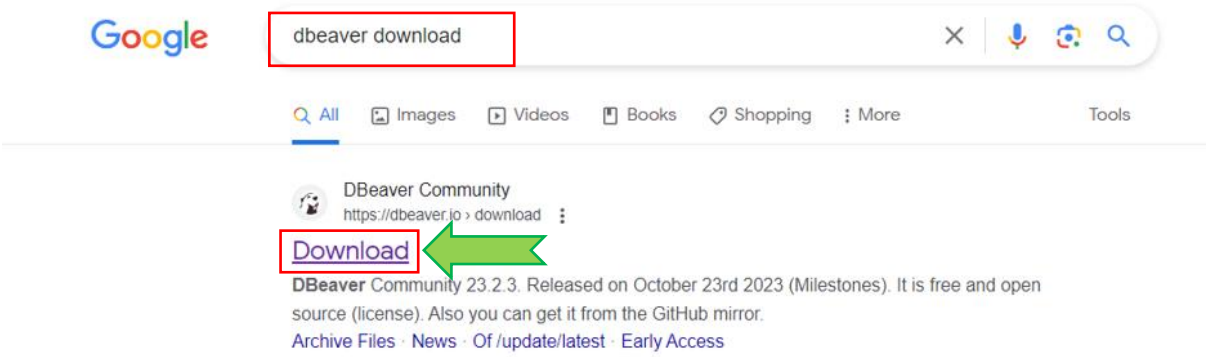


- Now create a database called dash using queries.

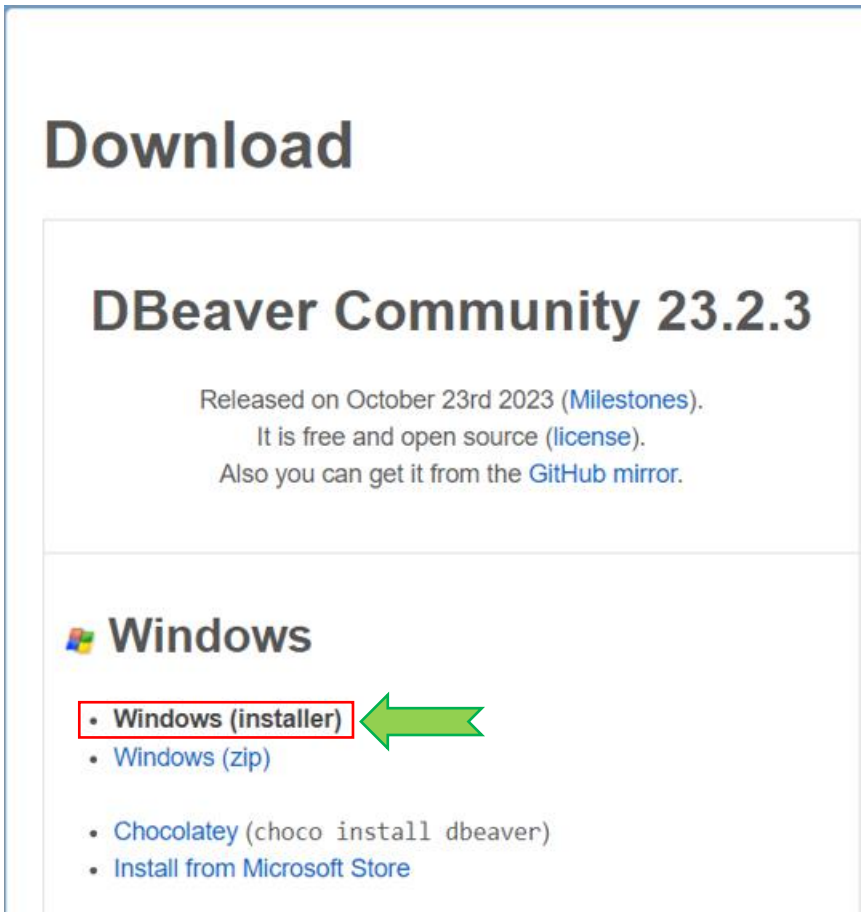




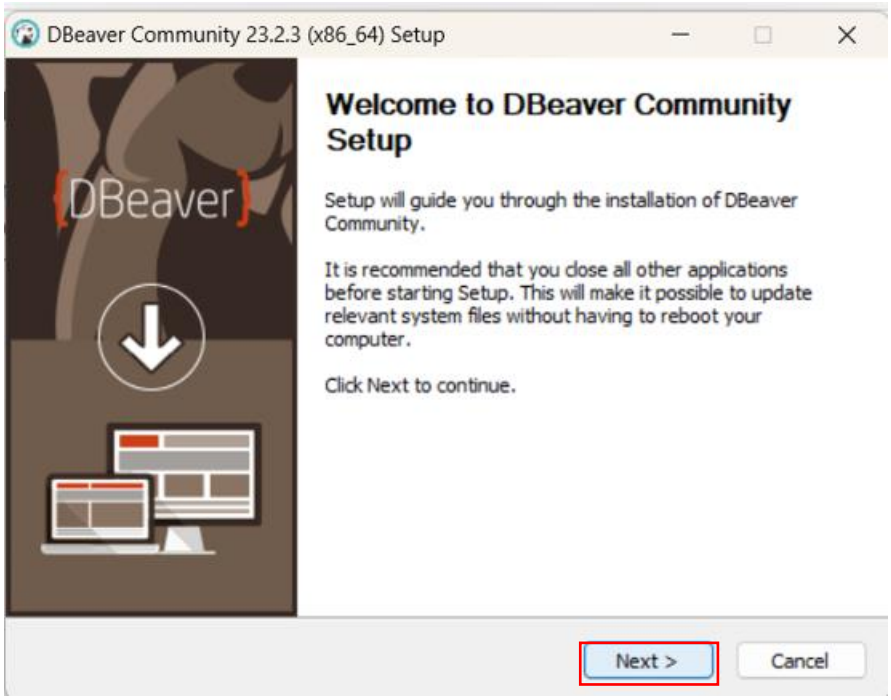
➢ The fourth step is to download the dbeaver community for querying and user related processes.

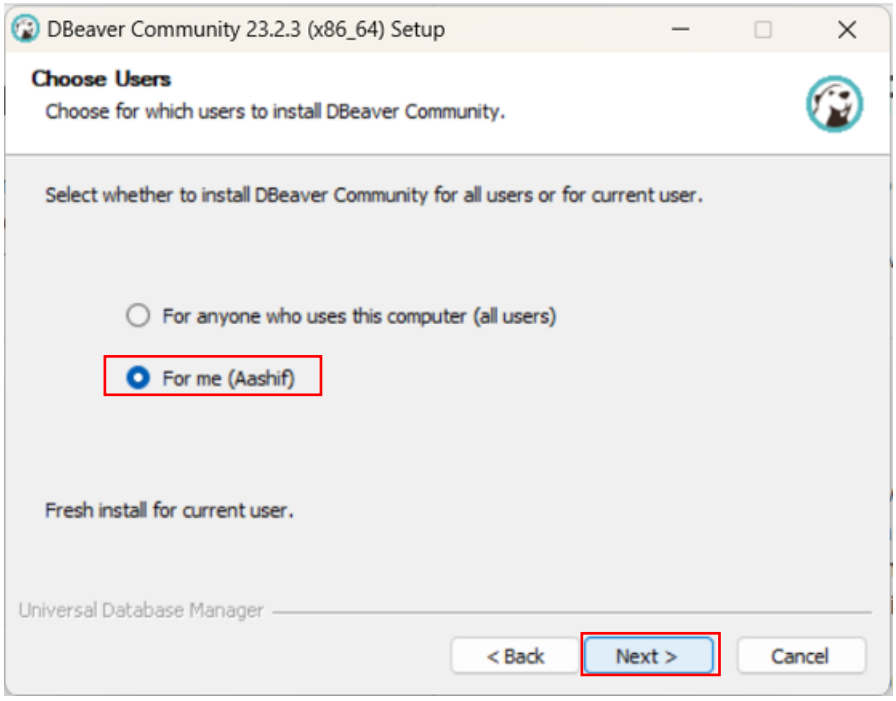


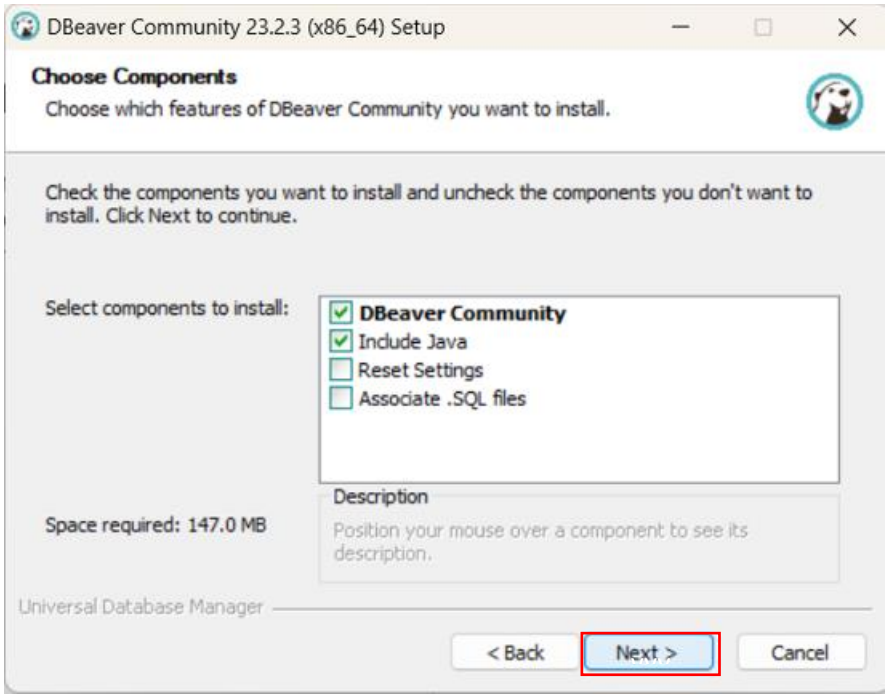
- Click Windows (installer)



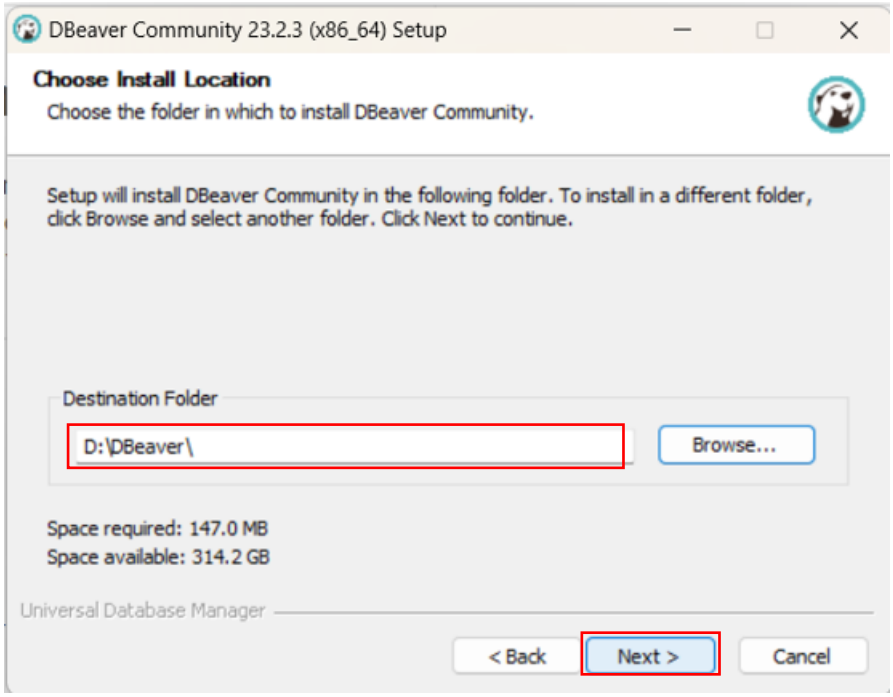
- Click next.


DBeaver Community 23.2.3 (x86_64) Setup
DBeaver
Welcome to DBeaver Community Setup
Setup will guide you through the installation of DBeaver Community.
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
Next >
Cancel

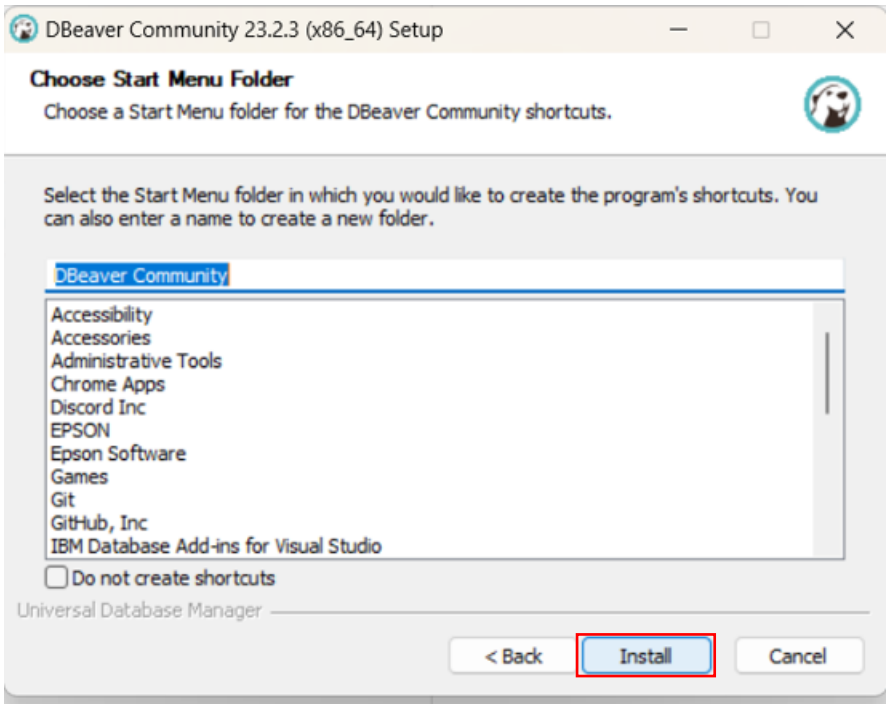

DBeaver Community 23.2.3 (x86_64) Setup
Choose Users
Choose for which users to install DBeaver Community.
Select whether to install DBeaver Community for all users or for current user.
For anyone who uses this computer (all users)
For me (Aashif)
Fresh install for current user.
Universal Database Manager
< Back
Next >
Cancel



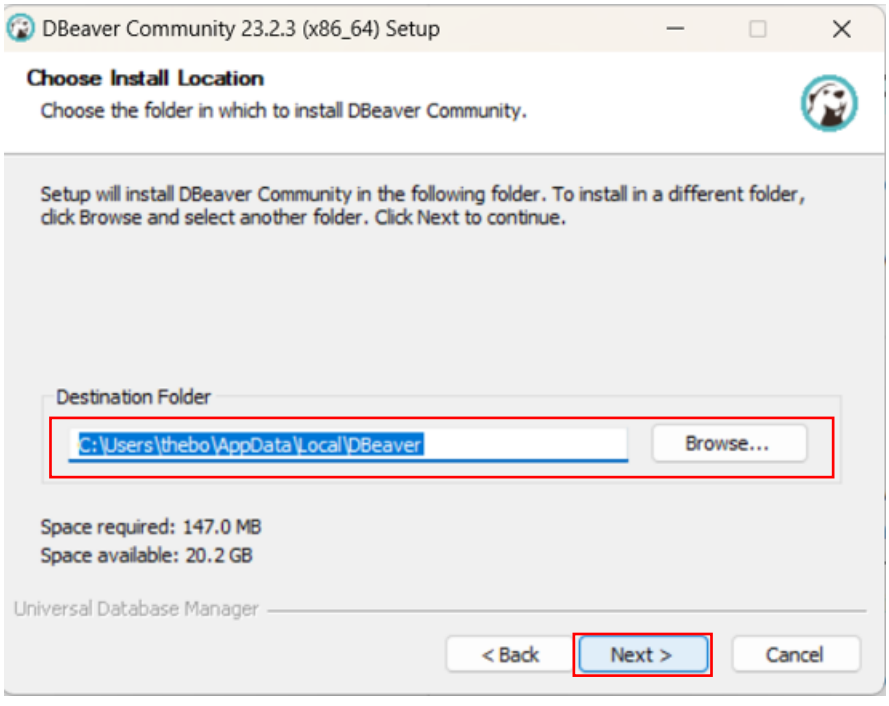
- Select the path and click next.

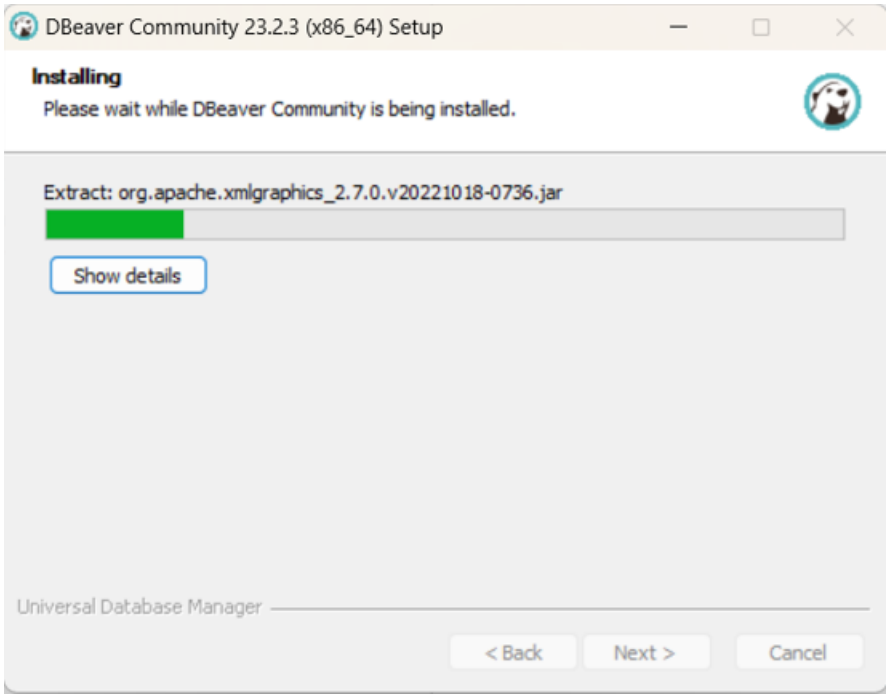


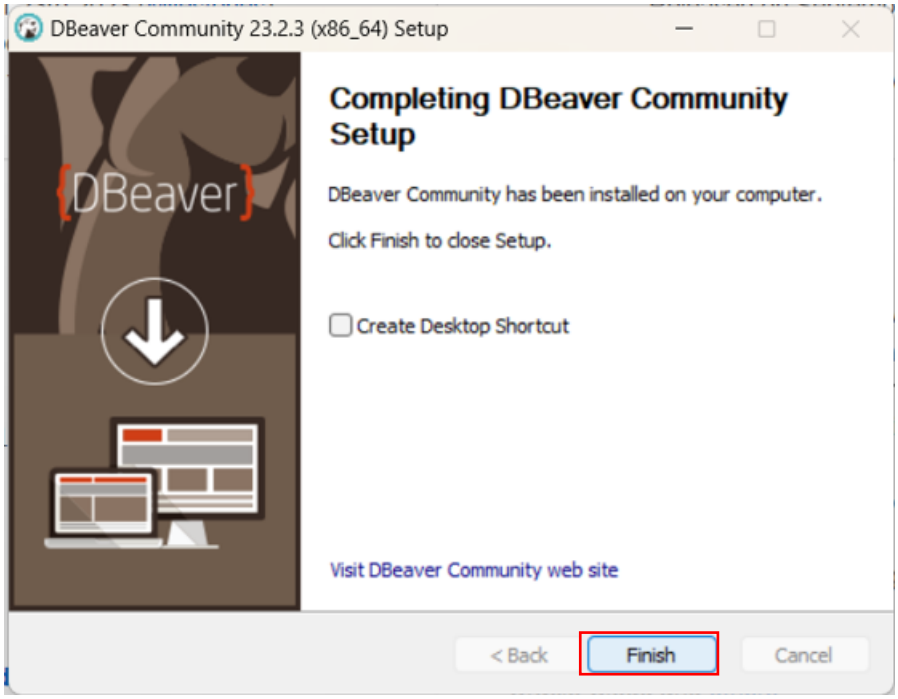
- Now install DBeaver.



- Choose install location.





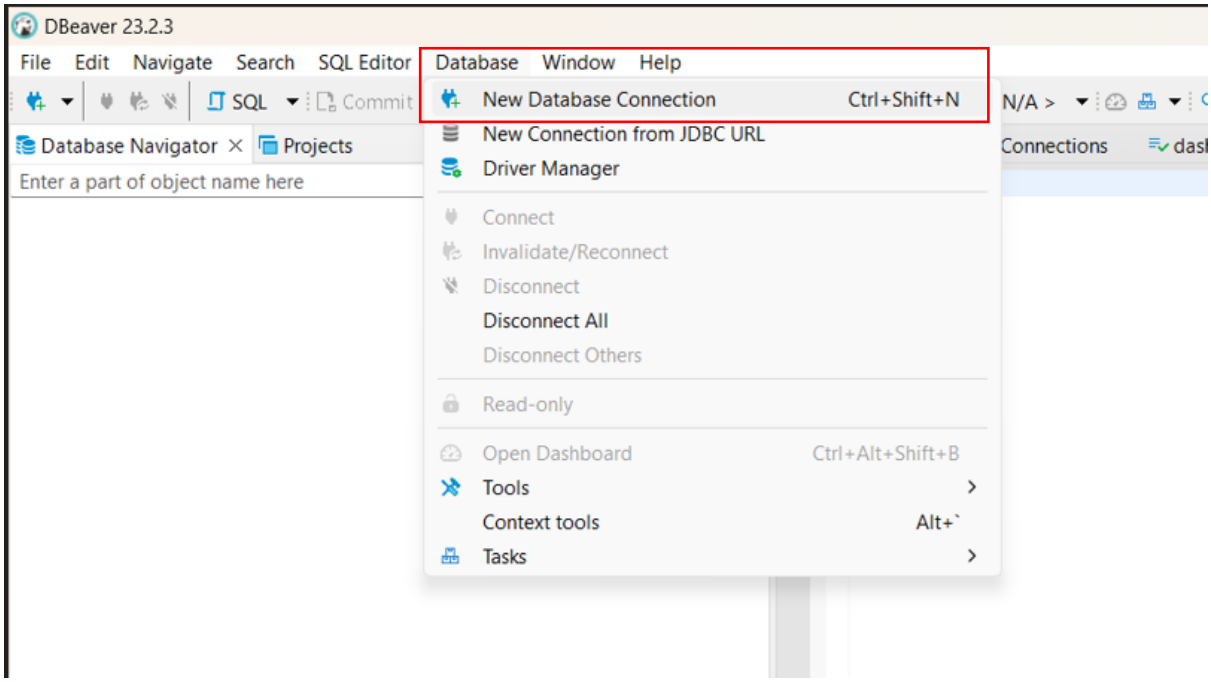


- Now the setup is finished.

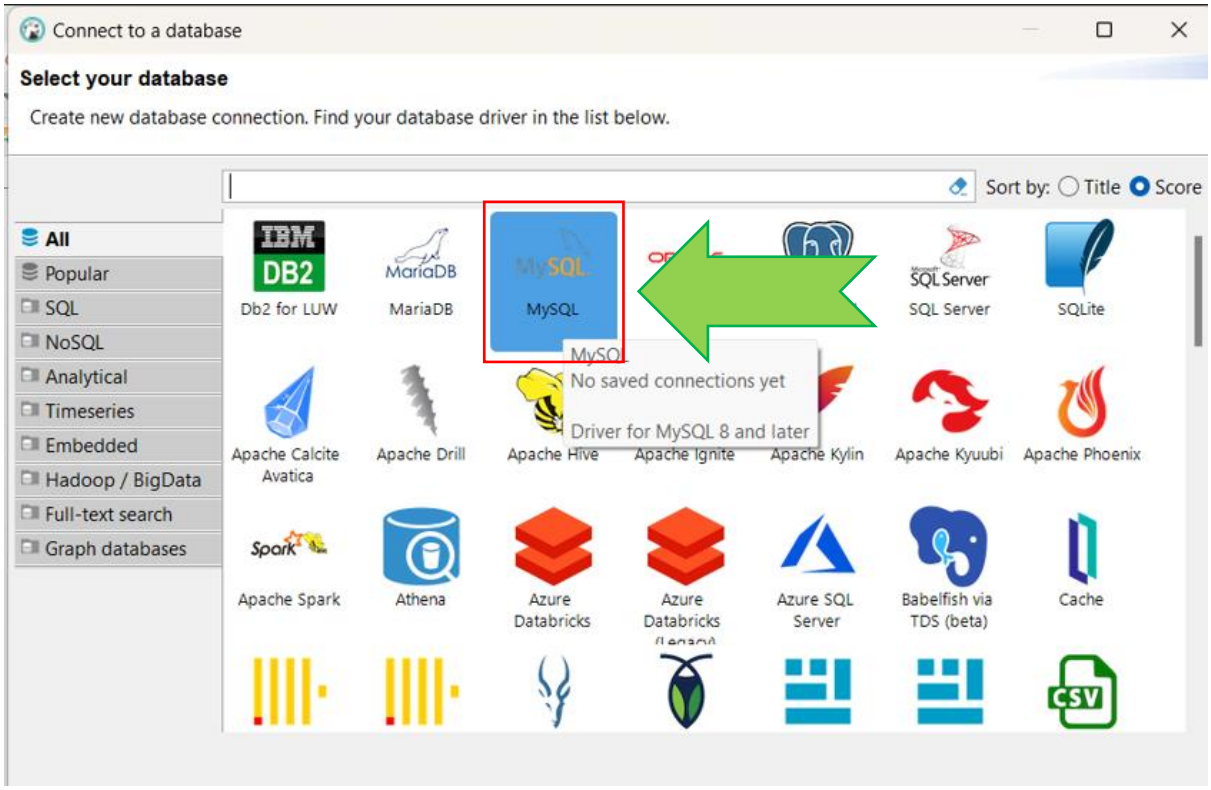
➢ The fifth step is to connect the database with the DBeaver community.

- Open the DBeaver community.

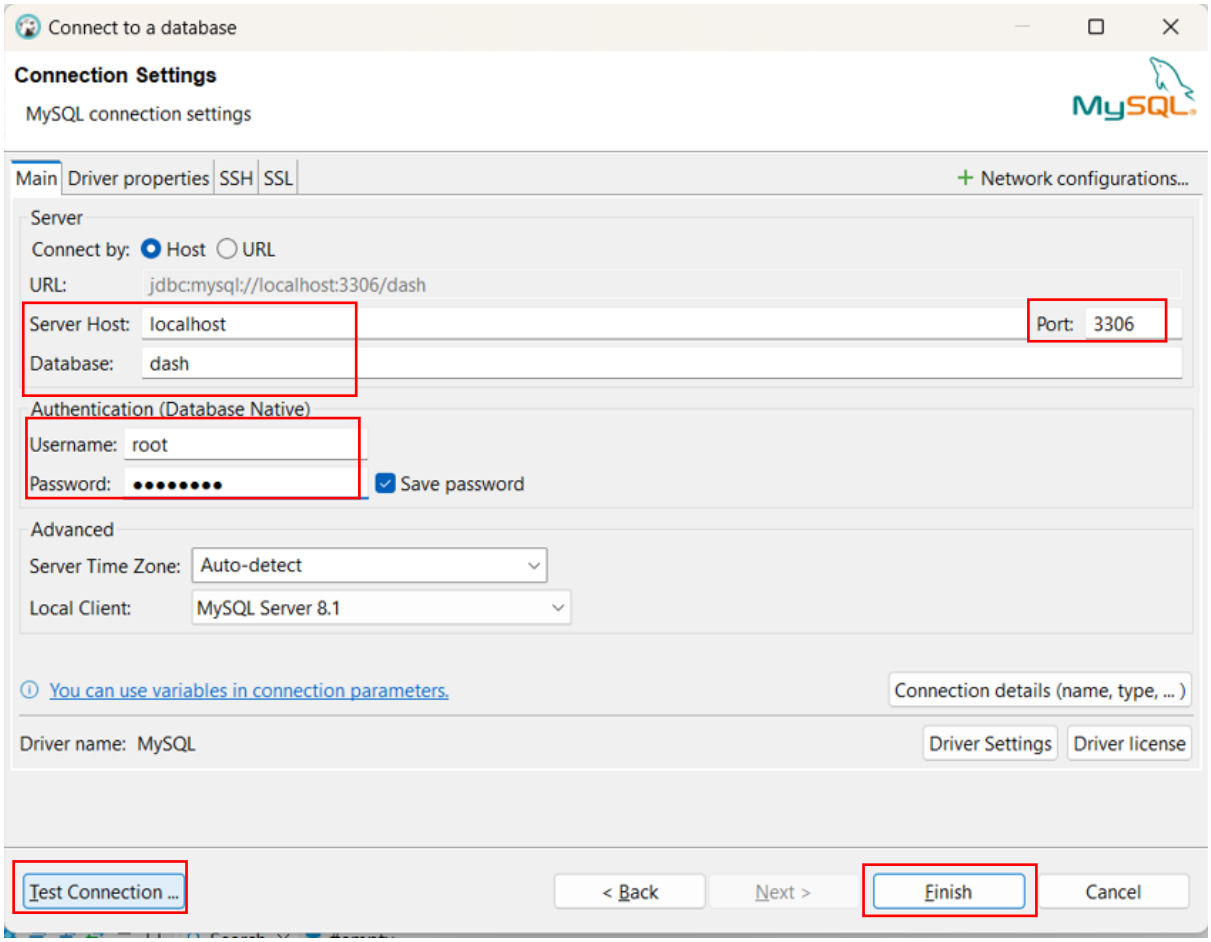
- Click database
- In that click New Database Connection.



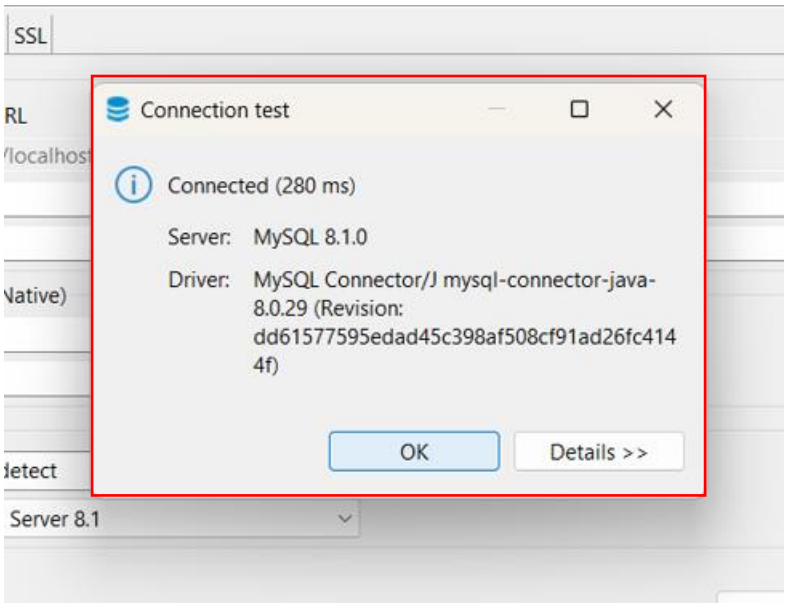
- Choose MySQL



- Fill the correct MySQL server details to connect with the DBeaver.



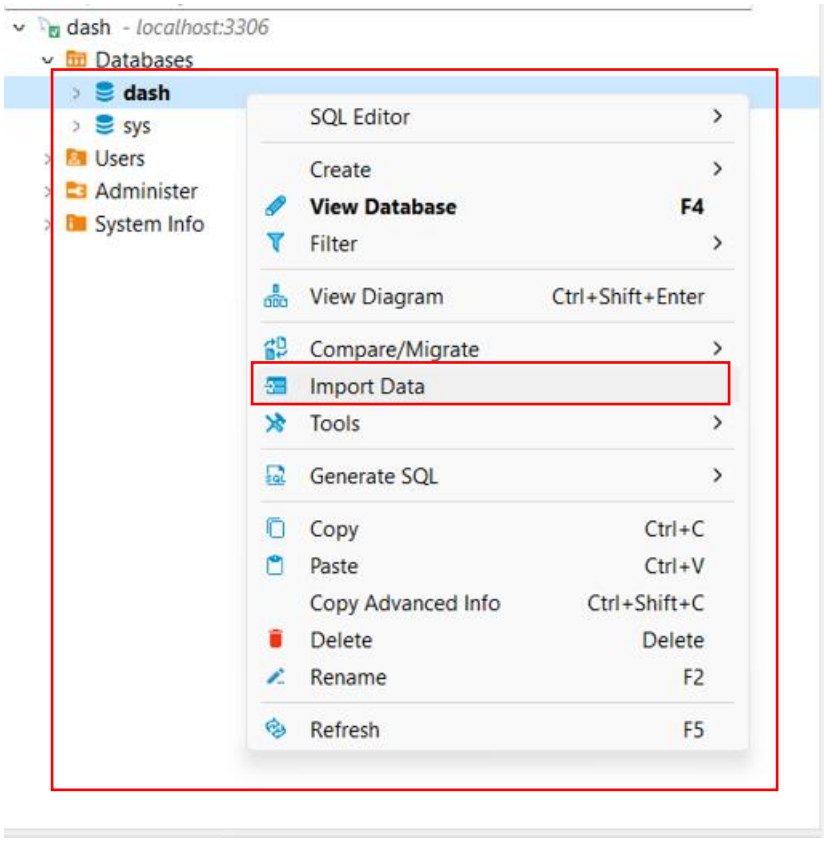
- Click Test connection



- Now the Database is successfully connected.

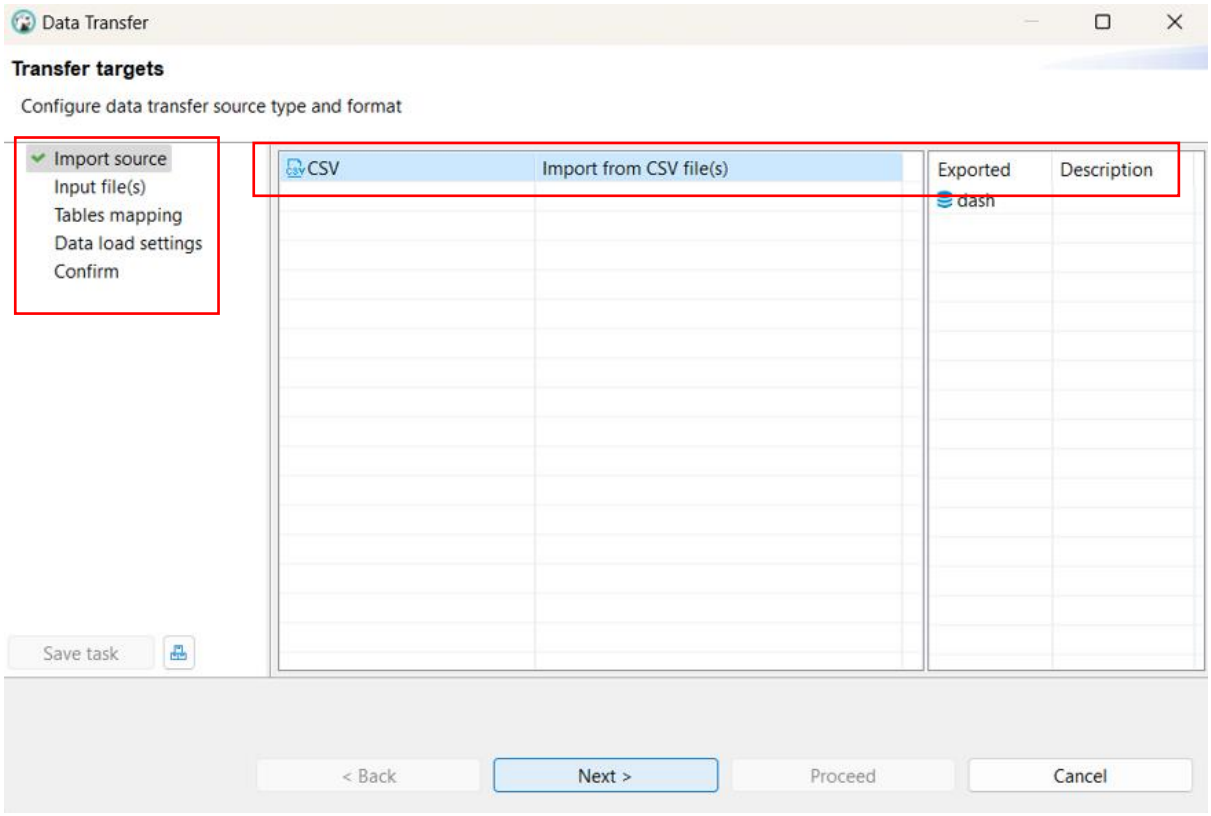
➢ The sixth step is the ETL process.

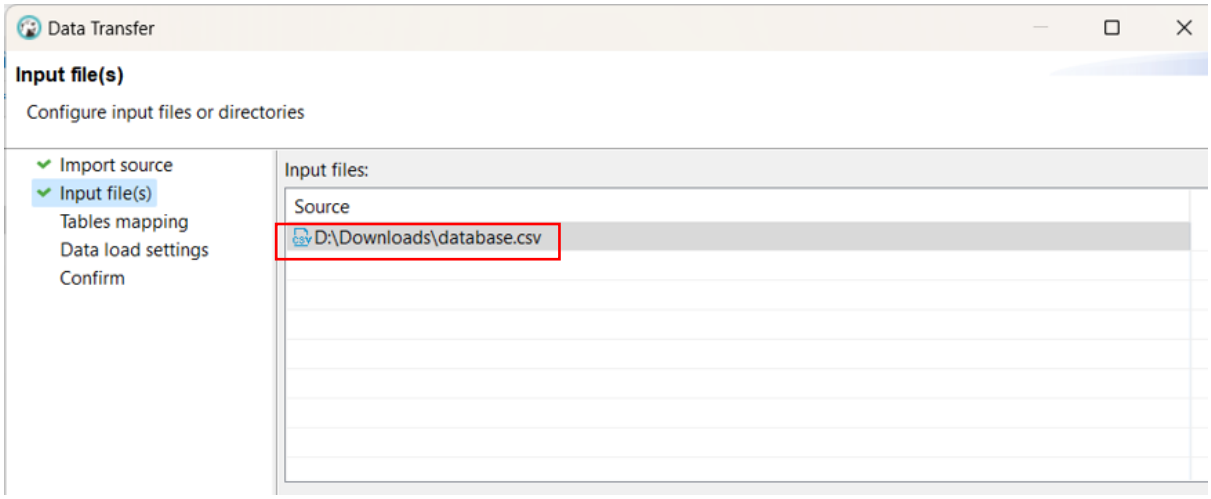
- We can import the necessary datasets.

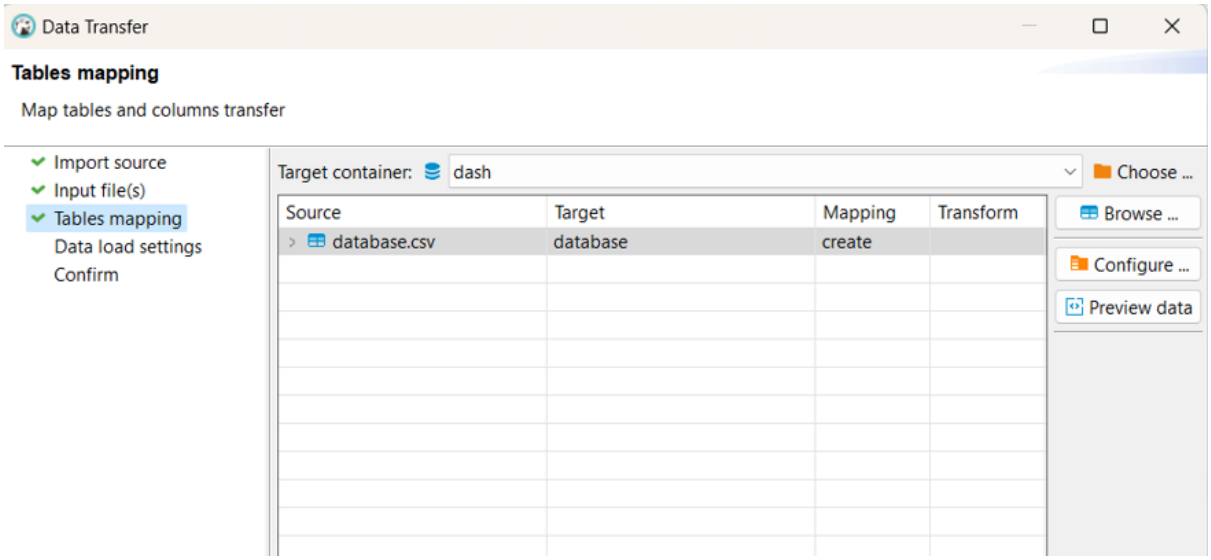


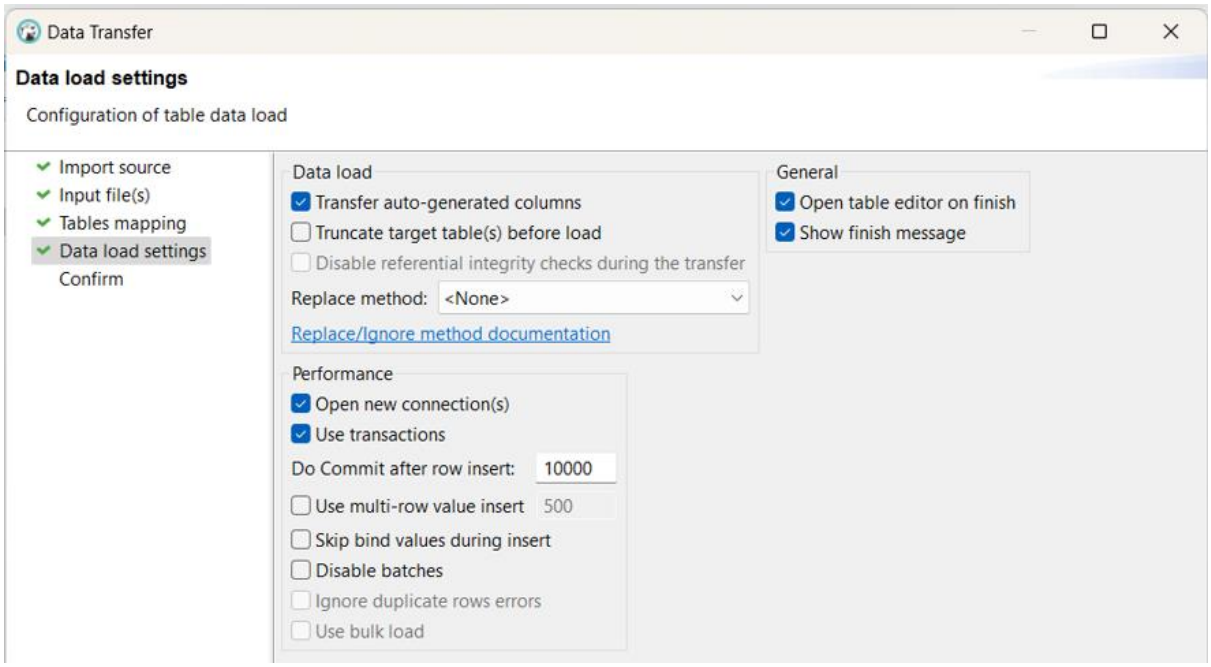
- Right click the database and click the import data.

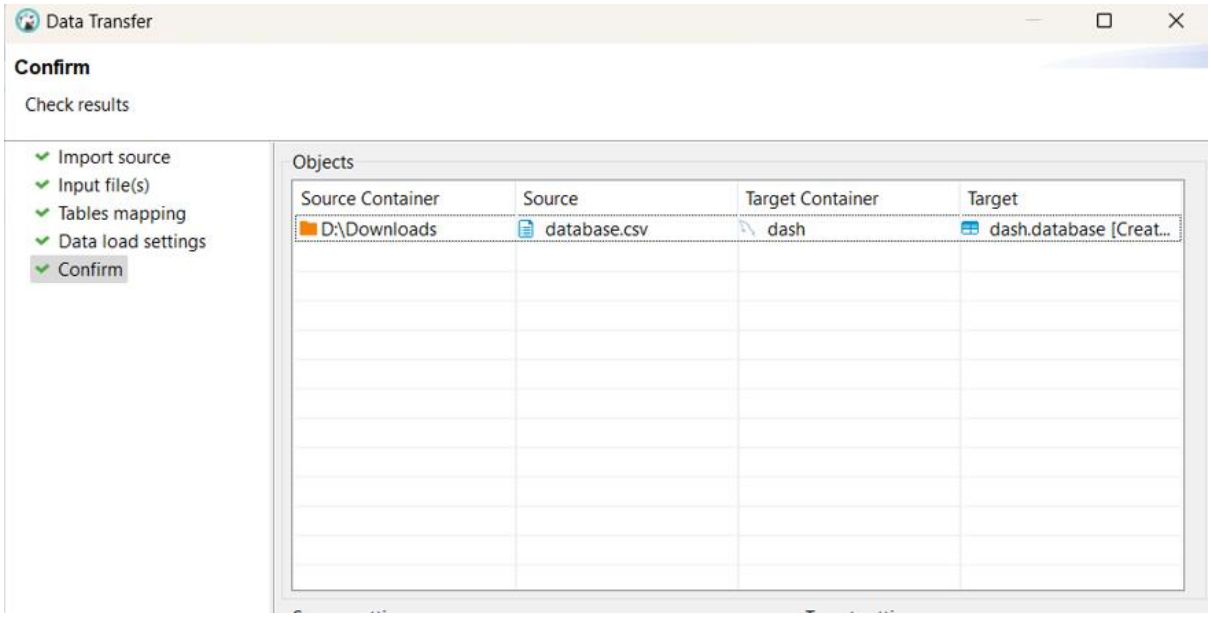
Click next and choose the dataset.



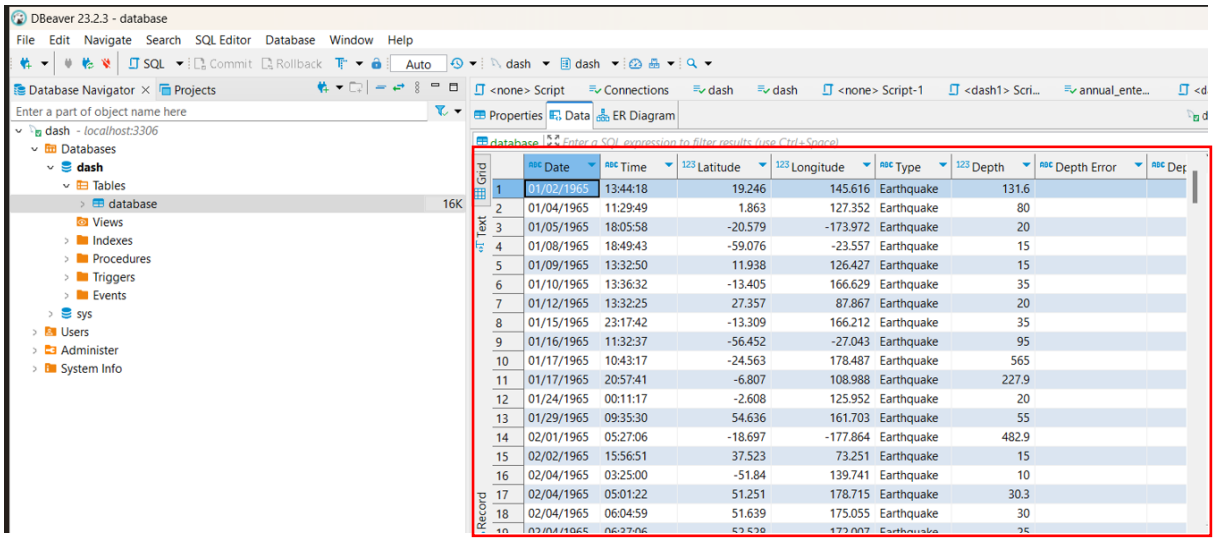



Data Transfer
Tables mapping
Map tables and columns transfer
Import source
Input file(s)
Tables mapping
Data load settings
Confirm
Target container:
dash
Choose ...
Source
Target
Mapping
Transform
database.csv
database
create
Browse ...
Configure ...
Preview data

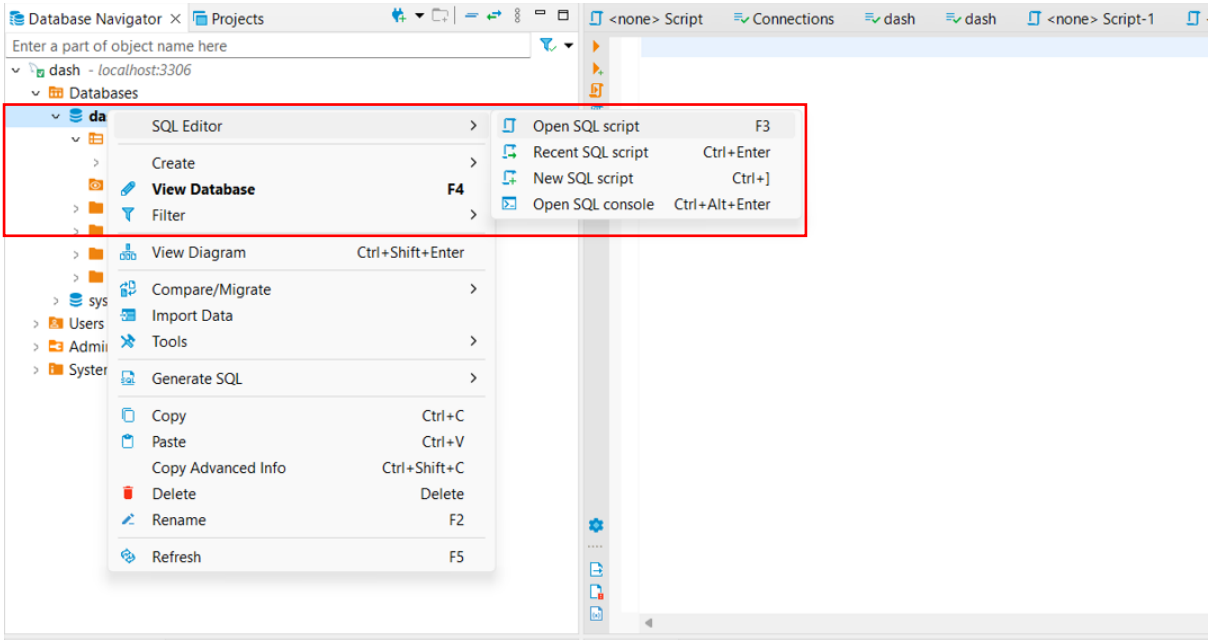

Data Transfer
Data load settings
Configuration of table data load
Import source
Input file(s)
Tables mapping
Data load settings
Confirm
Data load
Transfer auto-generated columns
Truncate target table(s) before load
Disable referential integrity checks during the transfer
Replace method:
<None>
Replace/Ignore method documentation
General
Open table editor on finish
Show finish message
Performance
Open new connection(s)
Use transactions
Do Commit after row insert:
10000
Use multi-row value insert
500
Skip bind values during insert
Disable batches
Ignore duplicate rows errors
Use bulk load



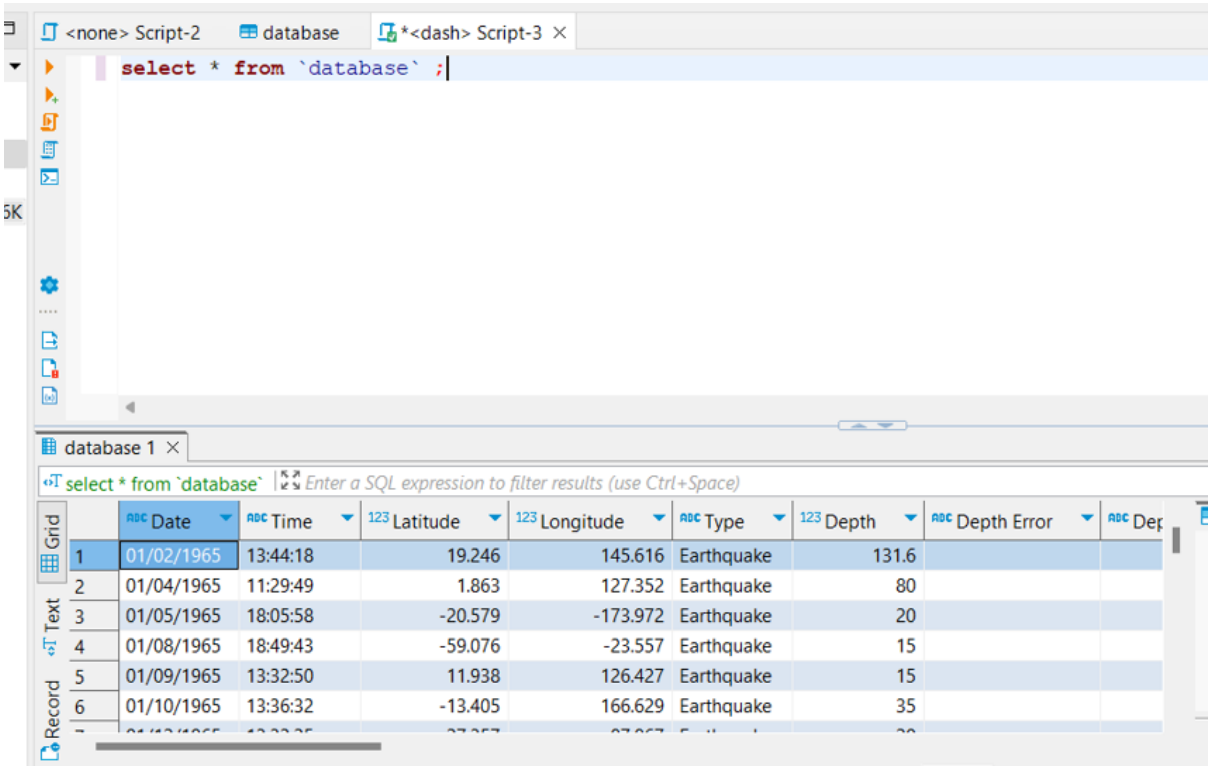
- Click F4 to view the imported data in a table form.

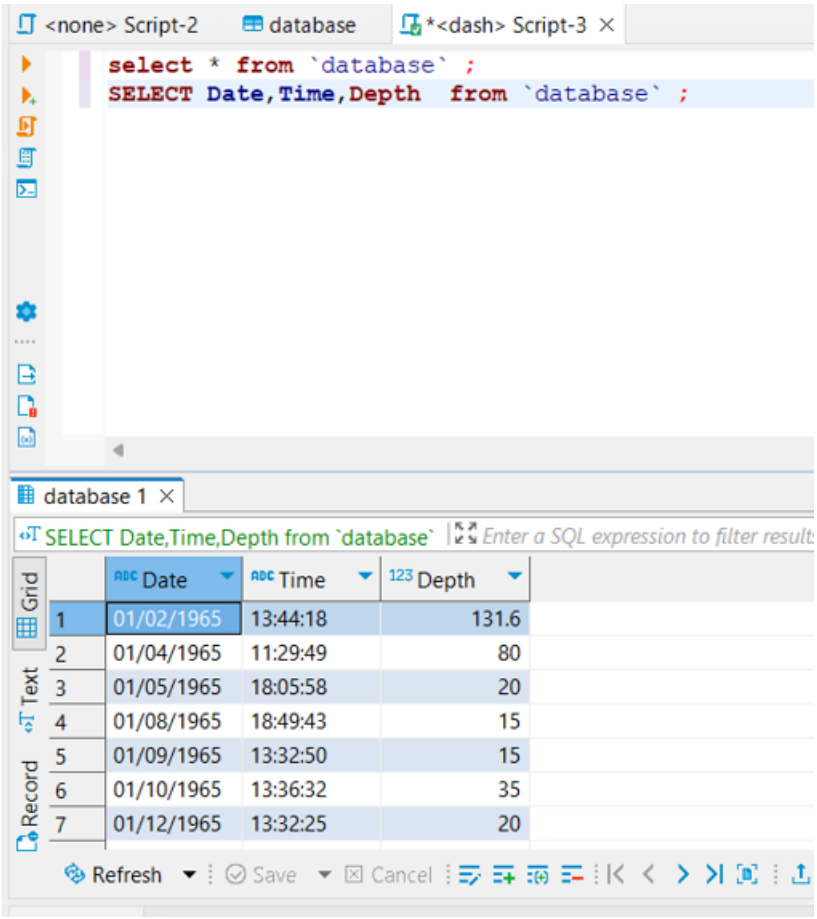


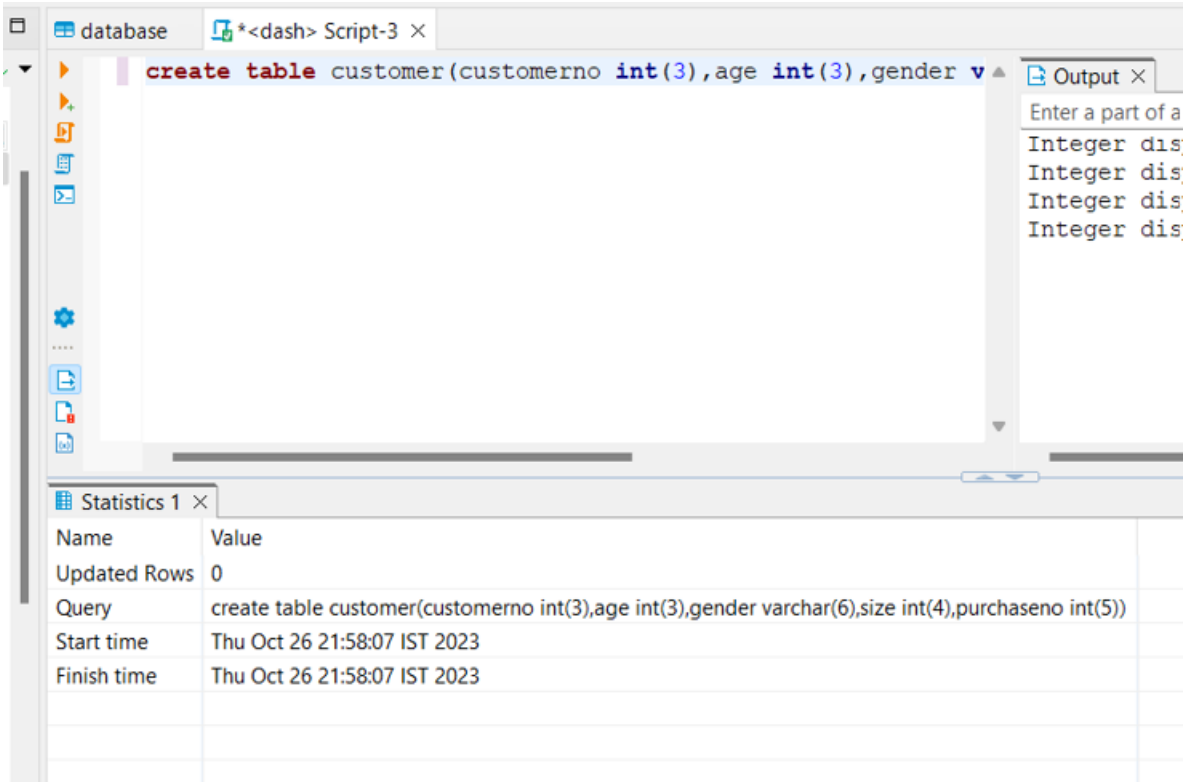
- Now right click on the dataset and click SQL editor to start the querying.



- Start doing the SQL queries.




<none> Script-2
database
*<dash> Script-3
select * from `database` ;
SELECT Date,Time,Depth from `database` ;
database 1
SELECT Date,Time,Depth from `database`
Enter a SQL expression to filter results
Grid
Text
Record
Date
Time
Depth
1 01/02/1965 13:44:18 131.6
2 01/04/1965 11:29:49 80
3 01/05/1965 18:05:58 20
4 01/08/1965 18:49:43 15
5 01/09/1965 13:32:50 15
6 01/10/1965 13:36:32 35
7 01/12/1965 13:32:25 20
Refresh
Save
Cancel


database
*<dash> Script-3
create table customer(customerno int(3),age int(3),gender v
Output
Enter a part of a
Integer dis
Integer dis
Integer dis
Integer dis
Statistics 1
Name
Value
Updated Rows
0
Query
create table customer(customerno int(3),age int(3),gender varchar(6),size int(4),purchaseno int(5))
Start time
Thu Oct 26 21:58:07 IST 2023
Finish time
Thu Oct 26 21:58:07 IST 2023

```
create table customer(customerno int(3),age int(3),gender varchar(6),size int(4),purchaseno int(5));
insert into customer (customerno ,age ,gender ,size ,purchaseno) values(1,24,'Male','40',43);
```

Statistics 1

Name	Value
Updated Rows	1
Query	insert into customer (customerno ,age ,gender ,size ,purchaseno) values(1,24,'Male','40',43)
Start time	Thu Oct 26 22:02:10 IST 2023
Finish time	Thu Oct 26 22:02:10 IST 2023

```
create table customer(customerno int(3),age int(3),gender varchar(6),size int(4),purchaseno int(5));
insert into customer (customerno ,age ,gender ,size ,purchaseno) values(1,24,'Male','40',43);
select * from customer;
ALTER TABLE customer MODIFY COLUMN size varchar(4);
```

Statistics 1

Name	Value
Updated Rows	1
Query	ALTER TABLE customer MODIFY COLUMN size varchar(4)
Start time	Thu Oct 26 22:07:28 IST 2023
Finish time	Thu Oct 26 22:07:28 IST 2023

```
create table customer(customerno int(3),age int(3),gender varchar(6),size int(4),purchaseno int(5));
insert into customer (customerno ,age ,gender ,size ,purchaseno) values(1,24,'Male','40',43);
select * from customer;
ALTER TABLE customer MODIFY COLUMN size varchar(4);
update customer
set size= 'L'
where age=24;
```

Statistics 1

Name	Value
Updated Rows	1
Query	update customer
	set size= 'L'
	where age=24
Start time	Thu Oct 26 22:10:37 IST 2023
Finish time	Thu Oct 26 22:10:37 IST 2023

```
create table customer(customerno int(3),age int(3),gender varchar(6),size int(4),purchaseno int(5));
insert into customer (customerno ,age ,gender ,size ,purchaseno) values(1,24,'Male','40',43);
select * from customer;
ALTER TABLE customer MODIFY COLUMN size varchar(4);
update customer
set size= 'L'
where age=24;
select * from customer;
```

customer 1

select * from customer | Enter a SQL expression to filter results (use Ctrl+Space)

	customerno	age	gender	size	purchaseno
1	1	24	Male	L	43

Value: 1

```
insert into customer (customerno, age, gender, size, purchaseno) values(2, 36,'Female','XL',12);
insert into customer (customerno, age, gender, size, purchaseno) values(3, 48,'Male','M',26);
insert into customer (customerno, age, gender, size, purchaseno) values(4, 25,'Male','XXL',98);
```

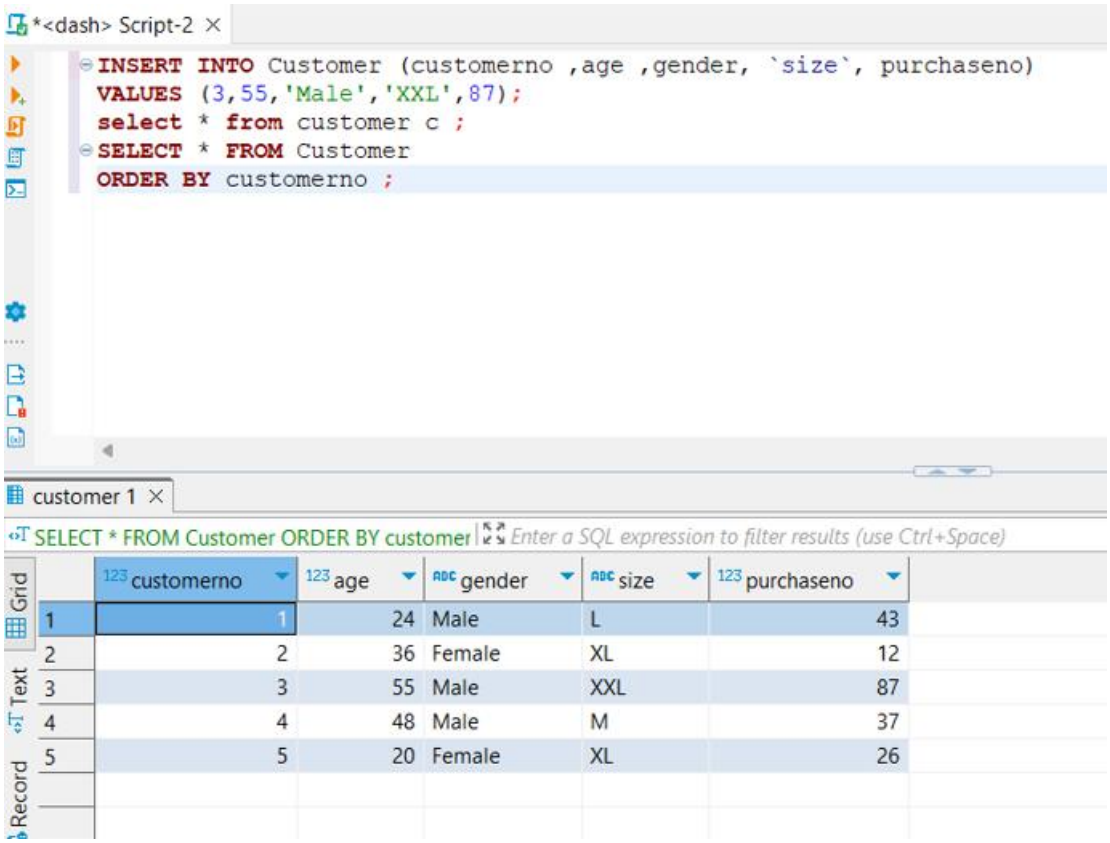
*<dash> Script-2

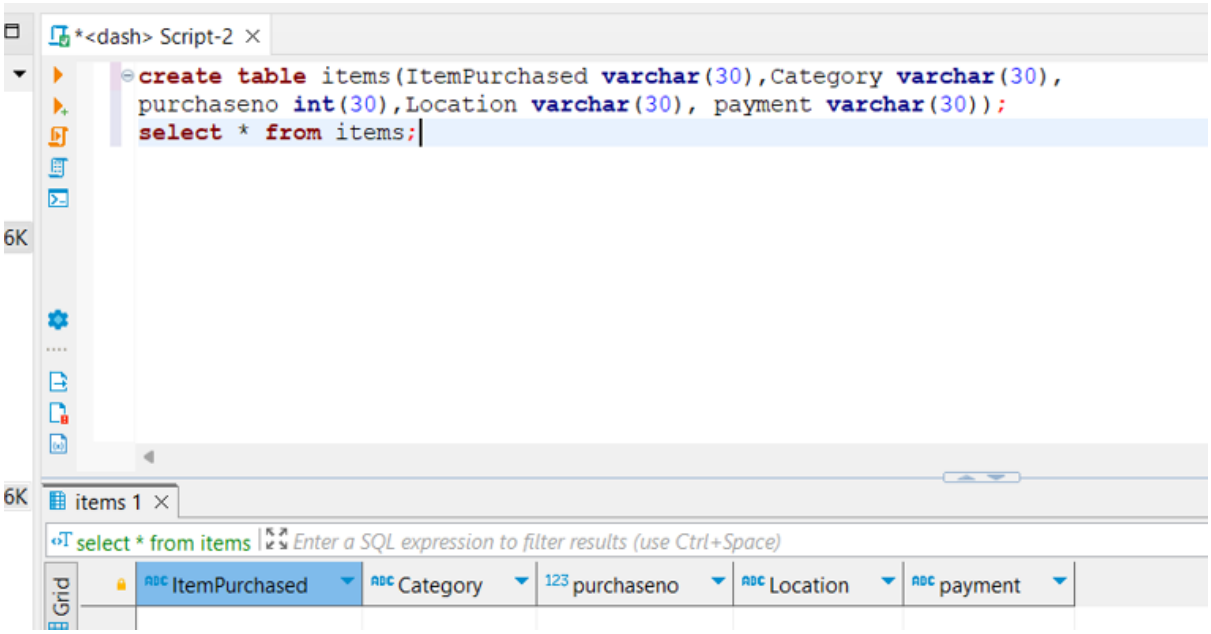
```
INSERT INTO Customer (customerno ,age ,gender, `size`, purchaseno)
VALUES (3,55,'Male','XXL',87);
select * from customer c ;
```

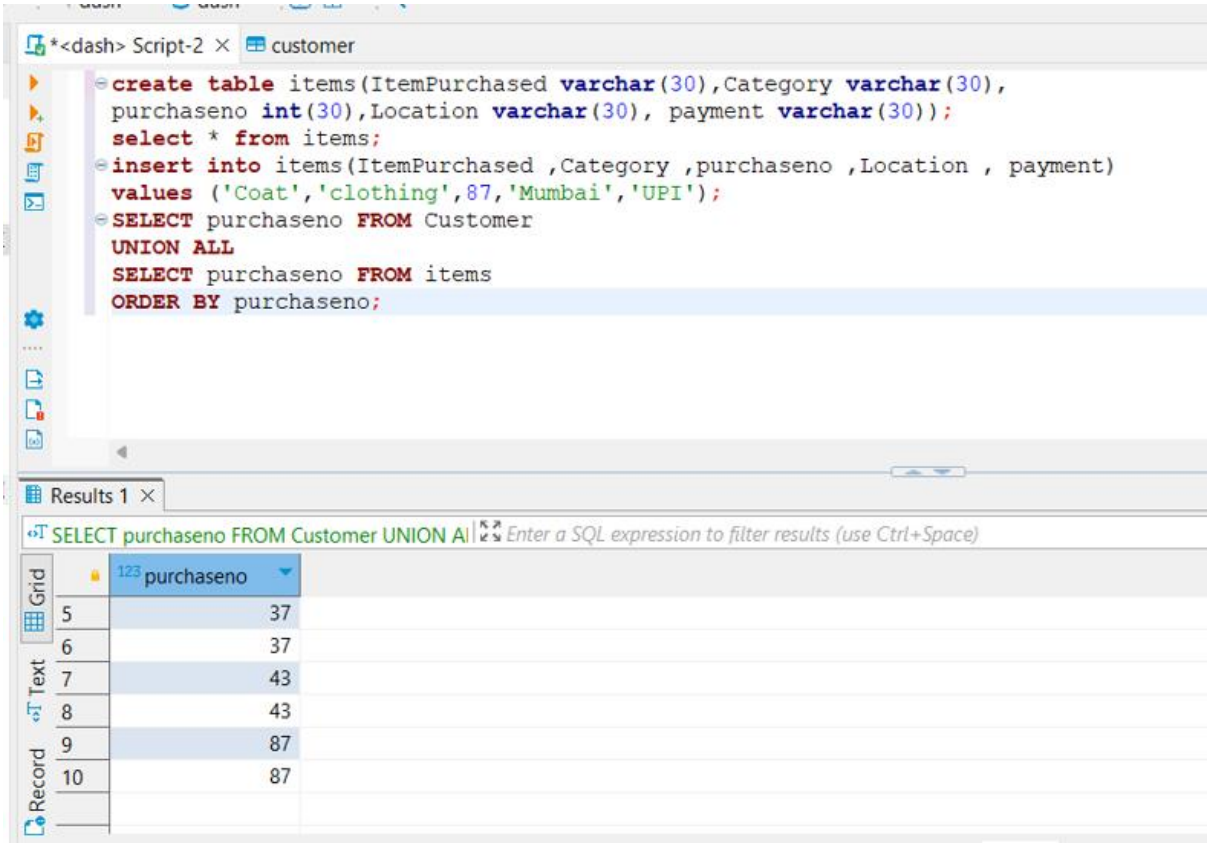
customer 1

select * from customer c | Enter a SQL expression to filter results (use Ctrl+Space)

	customerno	age	gender	size	purchaseno
1	1	24	Male	L	43
2	2	36	Female	XL	12
3	4	48	Male	M	37
4	5	20	Female	XL	26
5	3	55	Male	XXL	87

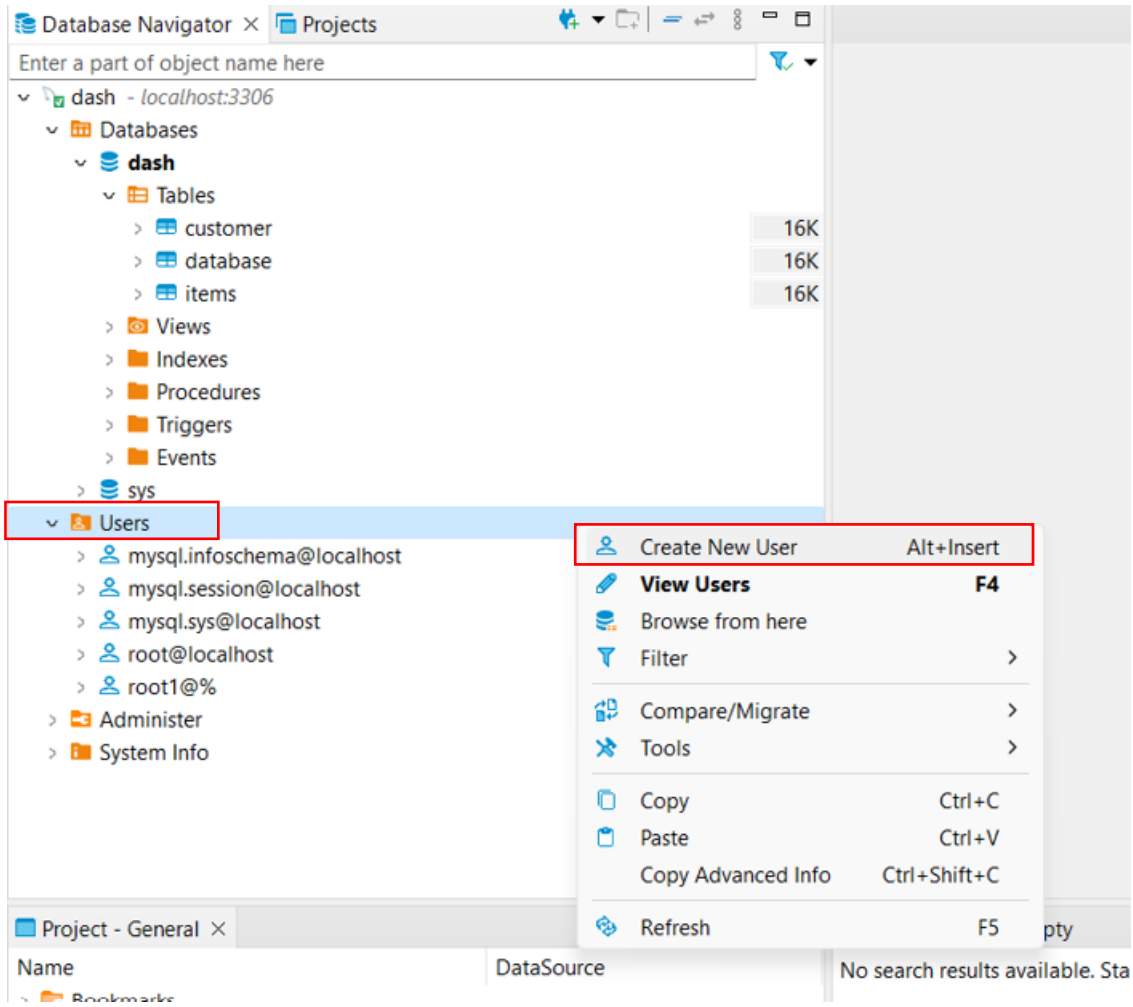

*<dash> Script-2
INSERT INTO Customer (customerno ,age ,gender, `size`, purchaseno)
VALUES (3,55,'Male','XXL',87);
select * from customer c ;
SELECT * FROM Customer
ORDER BY customerno ;
customer 1
SELECT * FROM Customer ORDER BY customer
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
Text
Record
customerno
age
gender
size
purchaseno
1 1 24 Male L 43
2 2 36 Female XL 12
3 3 55 Male XXL 87
4 4 48 Male M 37
5 5 20 Female XL 26


*<dash> Script-2
create table items(ItemPurchased varchar(30),Category varchar(30),
purchaseno int(30),Location varchar(30), payment varchar(30));
select * from items;
6K
6K
items 1
select * from items
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
ItemPurchased
Category
purchaseno
Location
payment



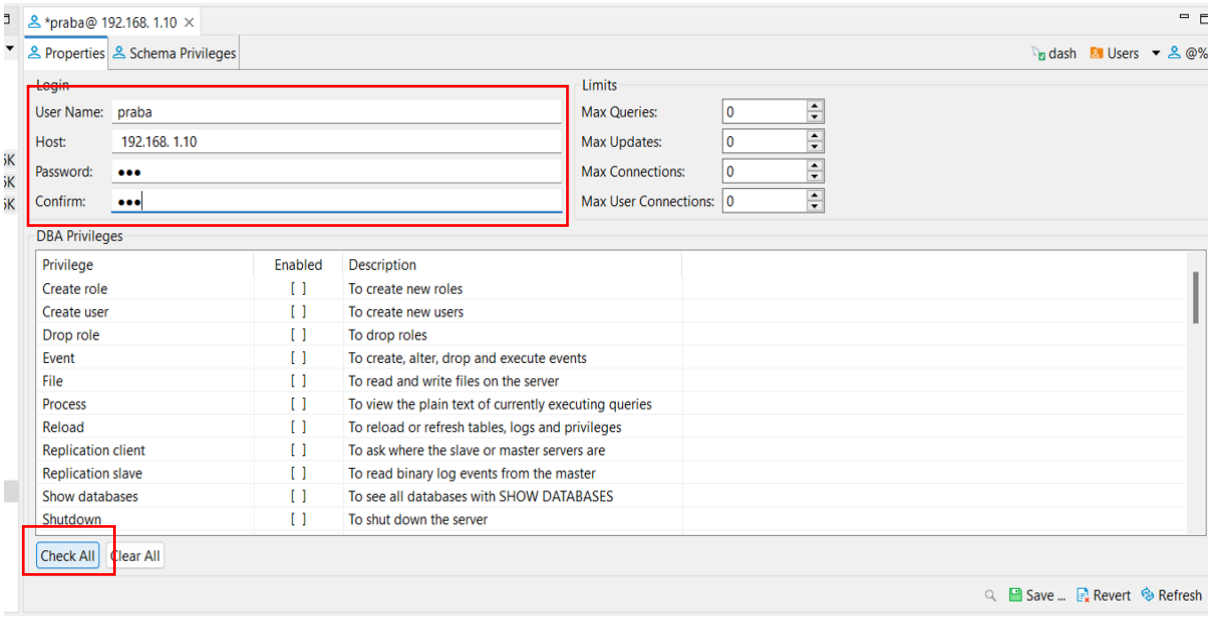
- Now the ETL process is finished.

➢ The seventh step is to enable data architects so that they can explore and analyze our data for better decision making.



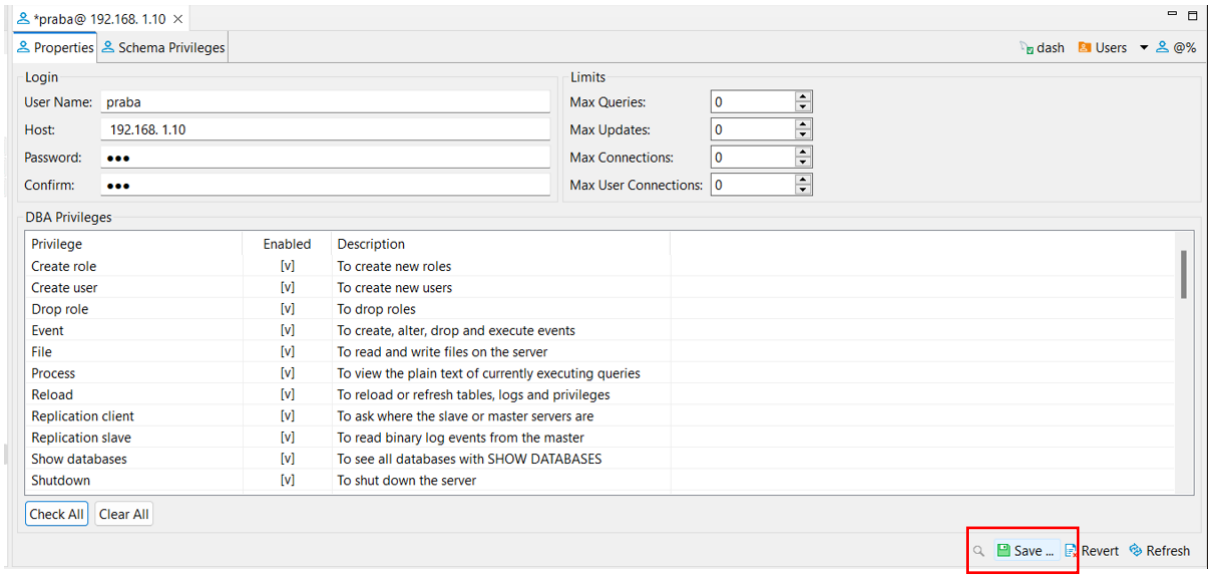
- Right click the users and click New user to create a new user.

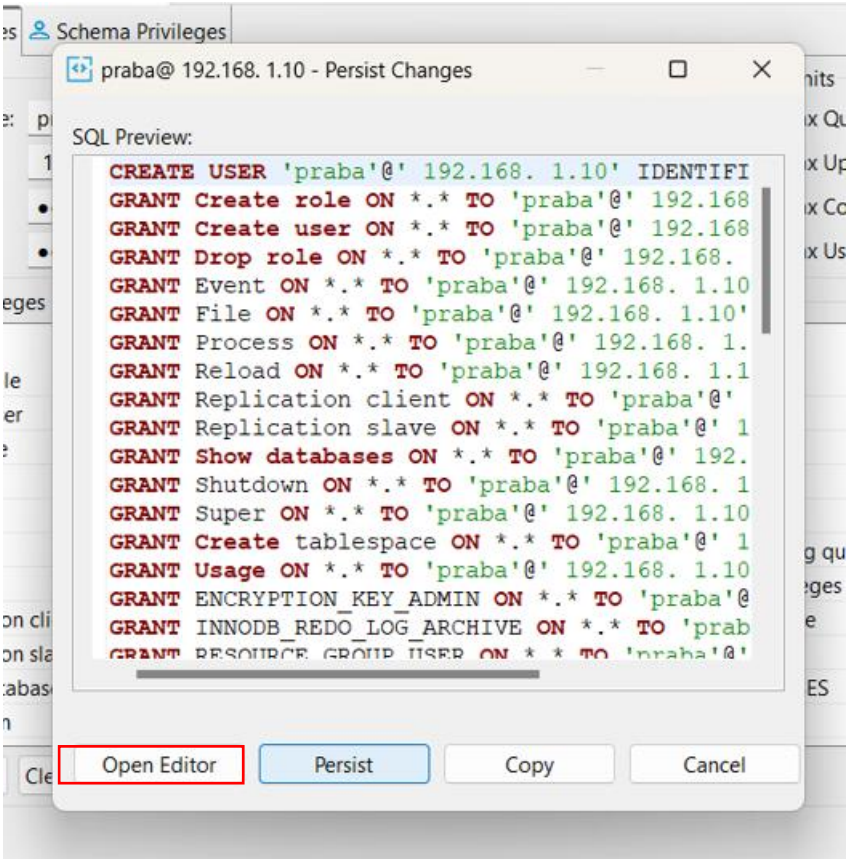
- Fill the data architect details like username, password and architect's IP address.



- Click check all to grant all permissions of our database.

- Save the progress.





- Click persist button to confirm all the permissions.

- Now we can see that the new user is created for data exploration.