MySQL workbench—How to create ER diagram

# Last amended: 5th Nov, 2025
# My folder: D:\data\OneDrive\Documents\Database systems
# MySQL Workbench manual is here
# Code file: `example.sql`

Contents

Given any relational database, here is screen-by-screen help to how to draw its ER-diagram in MySQL server Workbench. We assume you already have '*employees'* database or your database of interest already loaded in MySQL server.

(For Ubuntu OS only: For loading '*employees'* database into mysql server, please first execute the file '*er_diagram.sh*' in your virtual machine's folder: */home/ashok/Documents/erd and normalization exercises/erd_in_workbench* in the Ubuntu_database VM.)

Configuration and shortcuts:

A. All SQL Editor and Workspace bench configuration changes are saved to file:

```
C:\Users\ashok\AppData\Roaming\MySQL\Workbench\wb_options.xml
```

```
(A copy saved in file at folder:
D:\OneDrive\Documents\database_systems\mysql_workbench\workbench_confi
guration)\
```

B. Useful Workbench shortcut summary:

Ctrl+T	Open Query tab
Ctrl+SHIFT+O	Open sql script file
Ctrl+SHIFT+ENTER	Execute all queries
Ctrl+ENTER	Execute query in Query Editor
Ctrl+R	Reverse Engineer diablogbox
Ctrl+G	Forward Engineering
Ctrl+SHIFT+G	Write Forward Engineer code to SQL file
Ctrl+S	Save the diagram model as *.mwb (To import it double click on this file)
Ctrl+O	Open model (ERD) file

C. ERD diagram shortcuts summary:

Hit T and click on the workspace	Create table
Ctrl+S	Save the diagram model as *.mdb (To import a model, double click on this file)

Open Workbench

In Windows use Start Menu to open MySQL Workbench (right figure). In VM, click as in left-figure

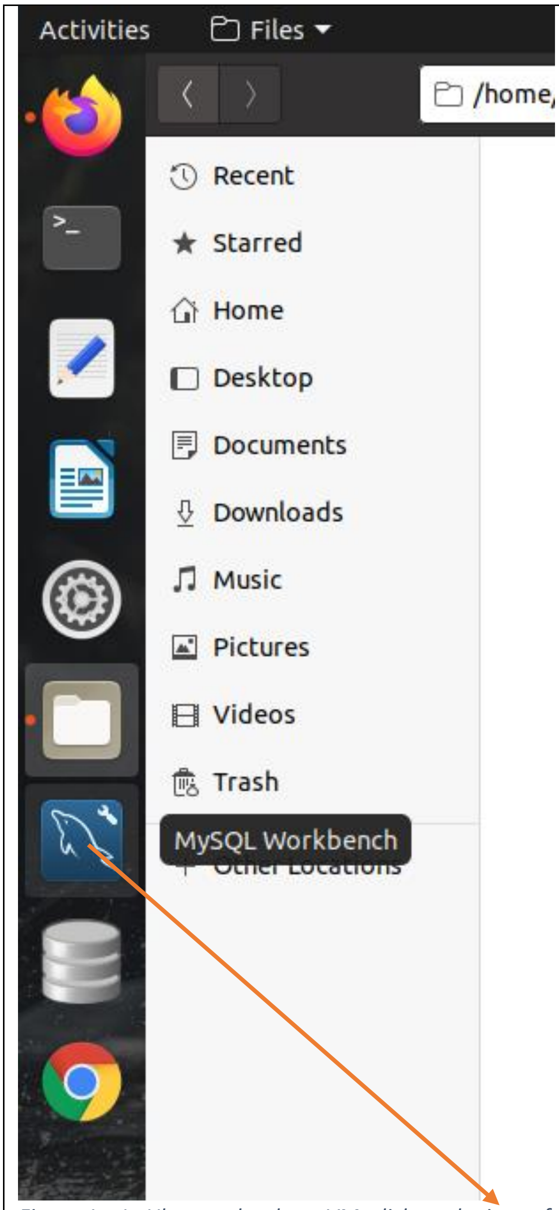


Figure 1: : In Ubuntu_database VM, click on the icon of MySQL Workbench to open it.

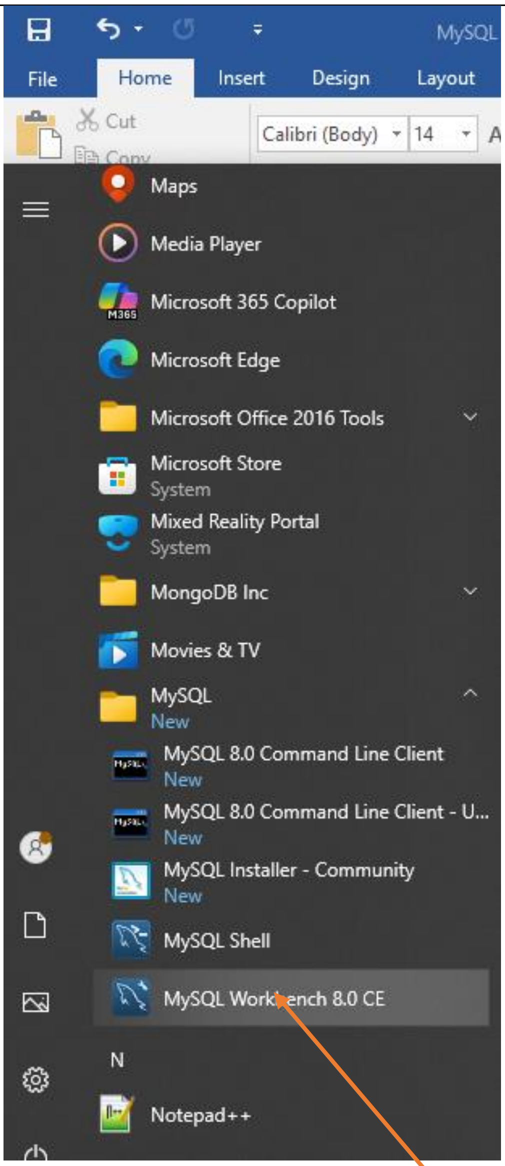
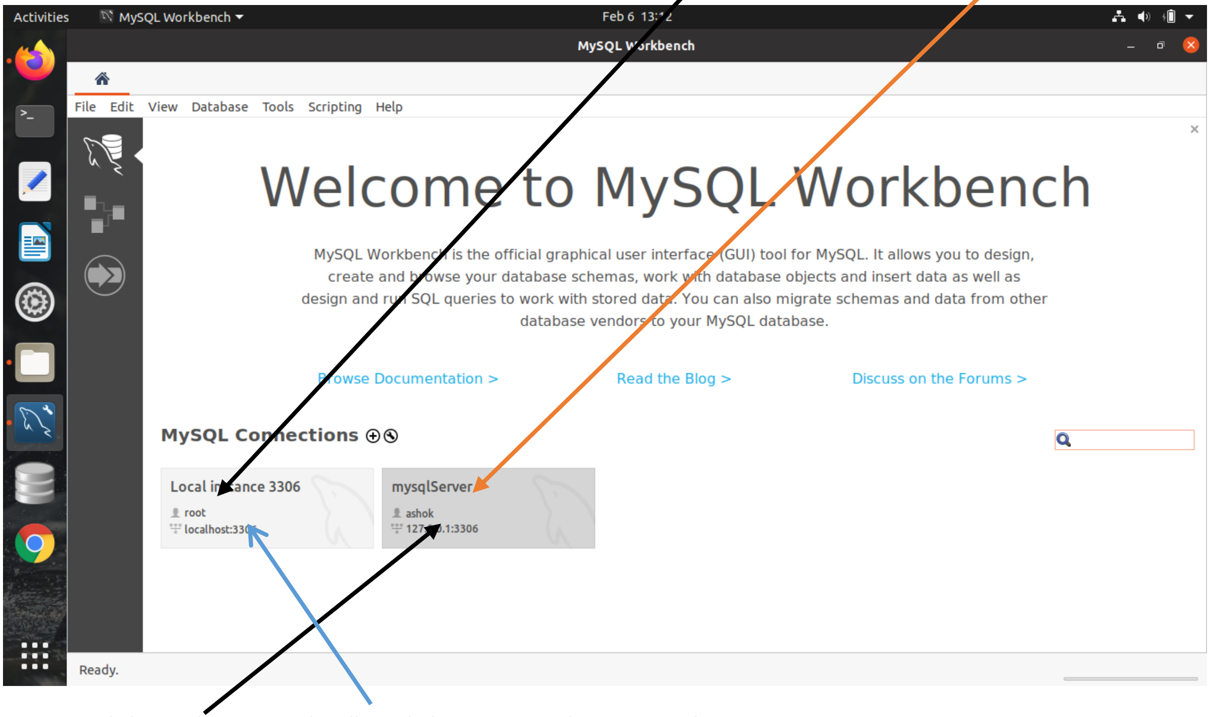


Figure 2: From Start Menu, access MySQL-->MySQL Workbench. Better create a short-cut in the Task Bar.

When MySQL Workbench opens, click on Local Instance or (a server created by you).



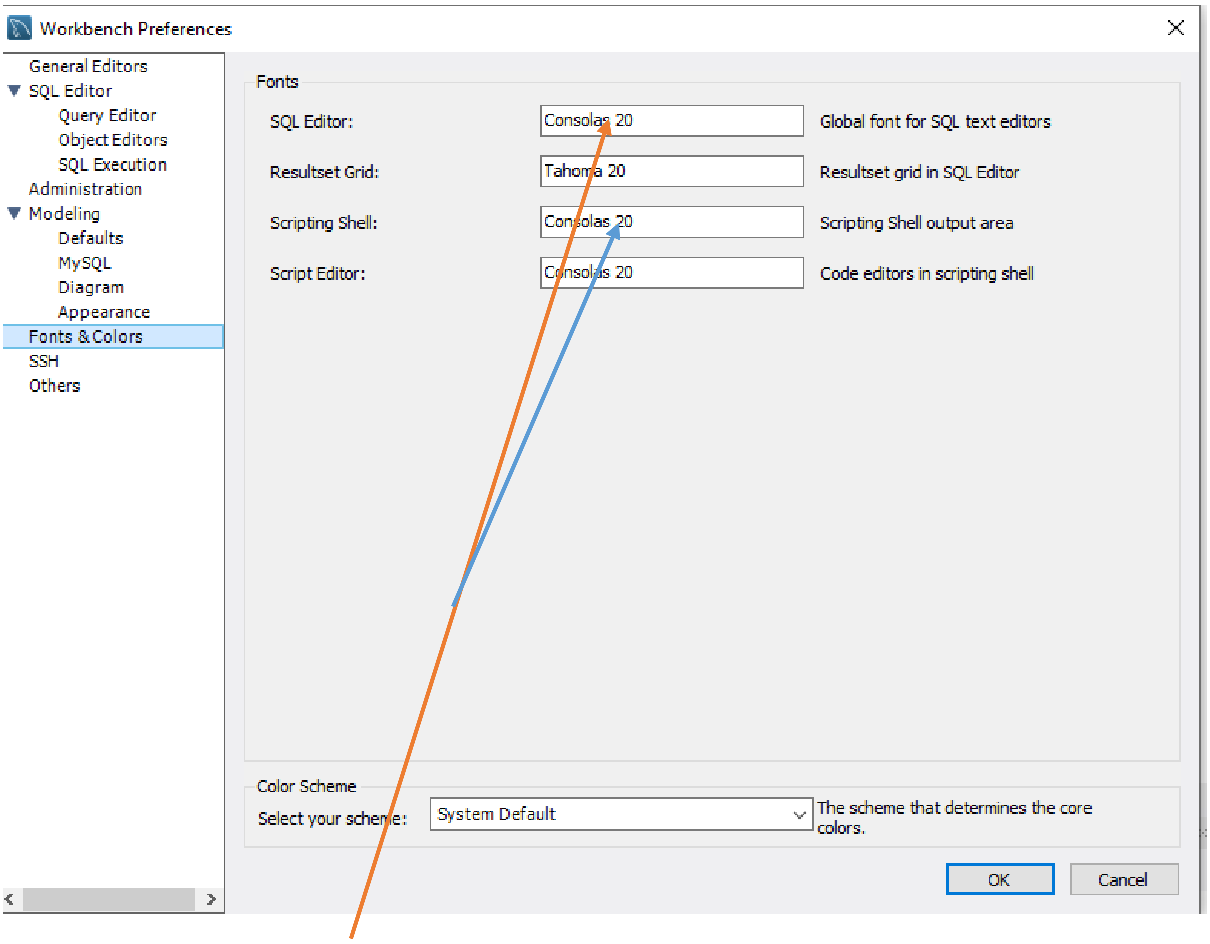
Welcome to MySQL Workbench

MySQL Workbench is the official graphical user interface (GUI) tool for MySQL. It allows you to design, create and browse your database schemas, work with database objects and insert data as well as design and run SQL queries to work with stored data. You can also migrate schemas and data from other database vendors to your MySQL database.

Figure 3: Click mysqlServer OR localhost link to open, as the case may be.

Workbench Configuration changes:

Click *Edit →Preferences →Fonts and Colors*. Set everything to font size of 20. Restart the Workbench.



Fonts

SQL Editor:	Consolas 20	Global font for SQL text editors
Resultset Grid:	Tahoma 20	Resultset grid in SQL Editor
Scripting Shell:	Consolas 20	Scripting Shell output area
Script Editor:	Consolas 20	Code editors in scripting shell

Color Scheme

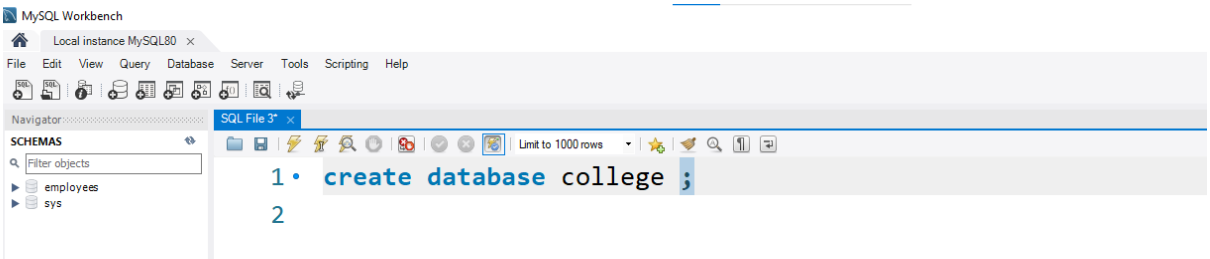
Select your scheme: System Default — The scheme that determines the core colors.

Figure 4: Change all fonts sizes to 20.. And restart Workbench.

Database creation

Press ctrl+T to open Query tab, if not already opened. Just create an empty database, as:

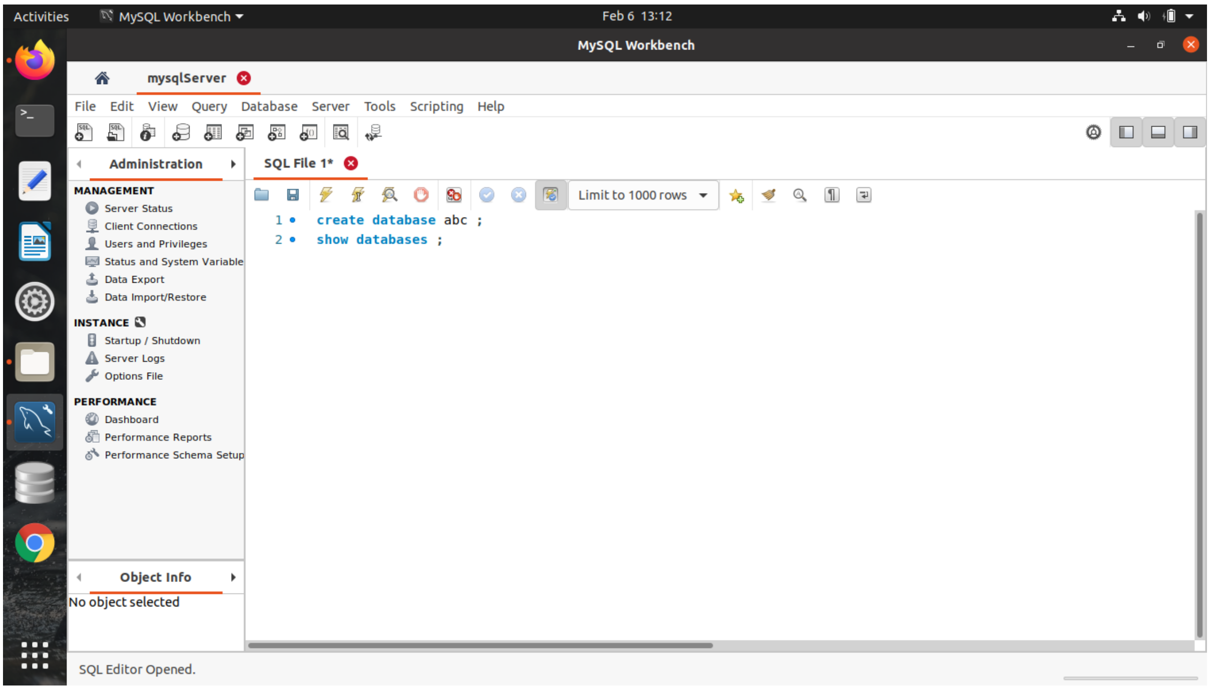
```
Create database college ;
```



```
create database college ;
```

Figure 5: Press ctrl+T to open a query tab. Write create statement and press ctrl+ENTER to execute the query.

1.

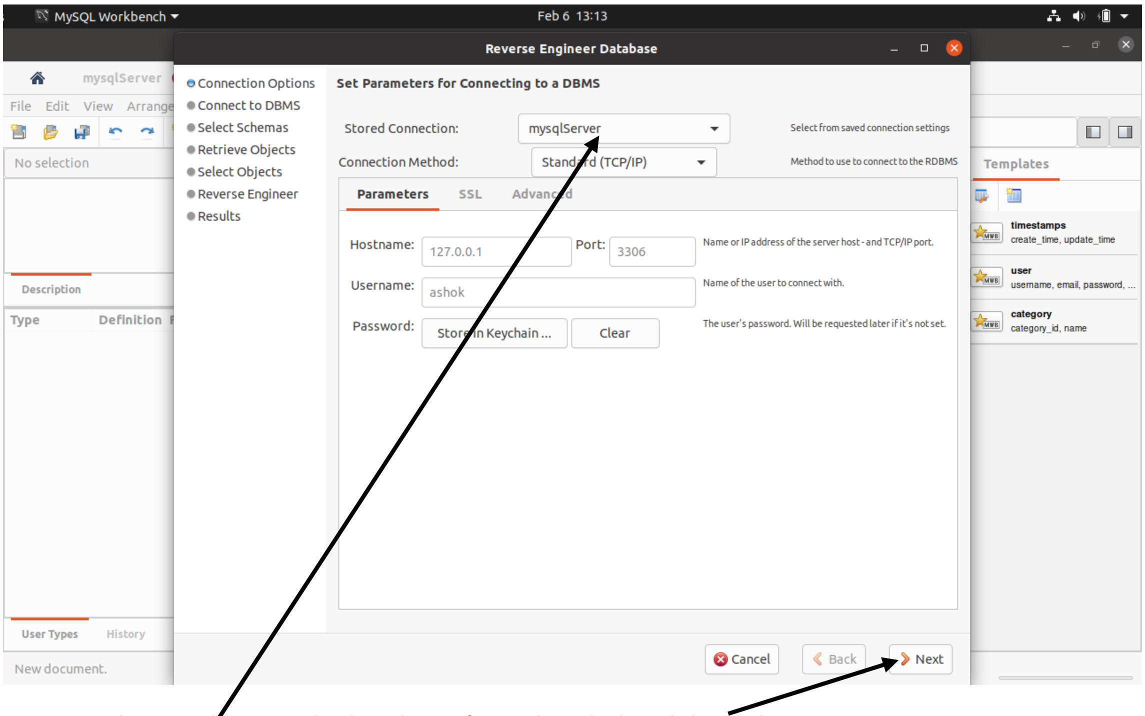


```
create database abc ;
show databases ;
```

SQL Editor Opened.

*Figure 6: You will be here. Press **ctrl+R** to open another dialog box; or in the top-menu click on **Database-->Reverse Engineer**.*

Reverse Engineering



Set Parameters for Connecting to a DBMS

Stored Connection: mysqlServer — Select from saved connection settings

Connection Method: Standard (TCP/IP) — Method to use to connect to the RDBMS

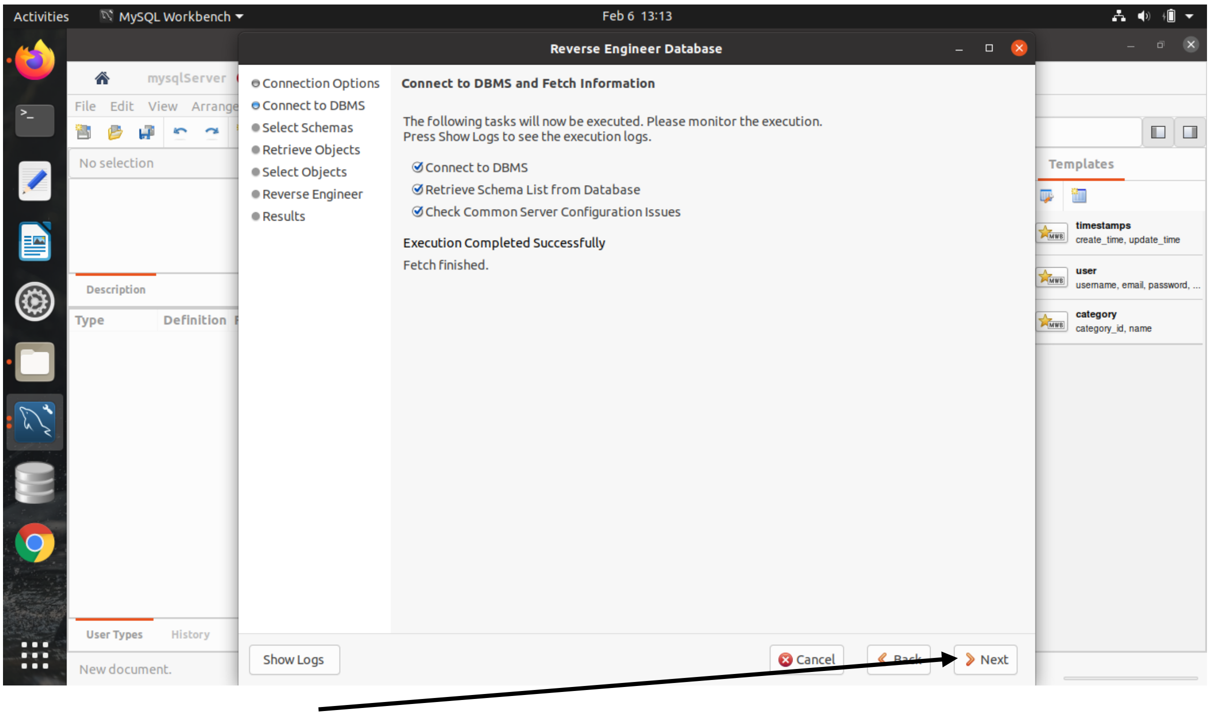
Hostname: 127.0.0.1 Port: 3306 — Name or IP address of the server host - and TCP/IP port.

Username: ashok — Name of the user to connect with.

Password: Store in Keychain ... Clear — The user's password. Will be requested later if it's not set.

*Figure 7: Select mysqlServer in the drop down, if not selected. Then click **Next** button.*

2.



Reverse Engineer Database

- Connection Options
- Connect to DBMS
- Select Schemas
- Retrieve Objects
- Select Objects
- Reverse Engineer
- Results

Connect to DBMS and Fetch Information

The following tasks will now be executed. Please monitor the execution.
Press Show Logs to see the execution logs.

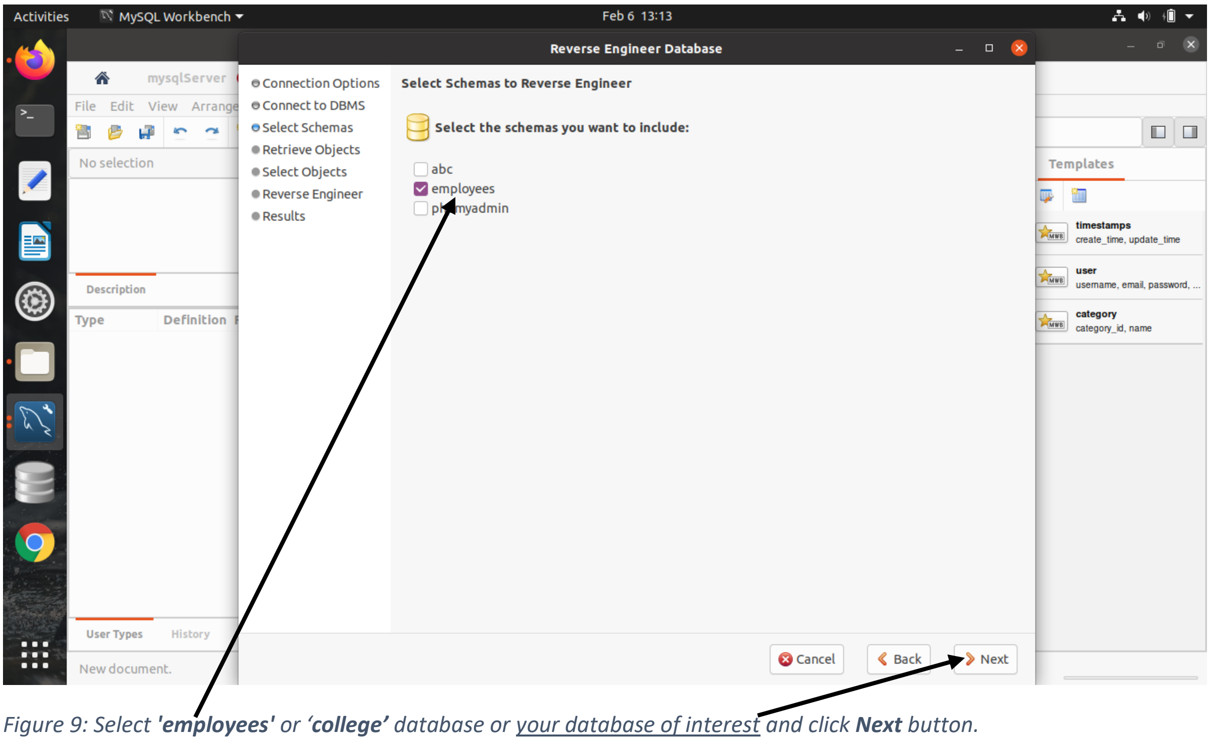
☑ Connect to DBMS
☑ Retrieve Schema List from Database
☑ Check Common Server Configuration Issues

Execution Completed Successfully

Fetch finished.

*Figure 8: Nothing to do. Click **Next** button*

3.



Reverse Engineer Database

- Connection Options
- Connect to DBMS
- Select Schemas
- Retrieve Objects
- Select Objects
- Reverse Engineer
- Results

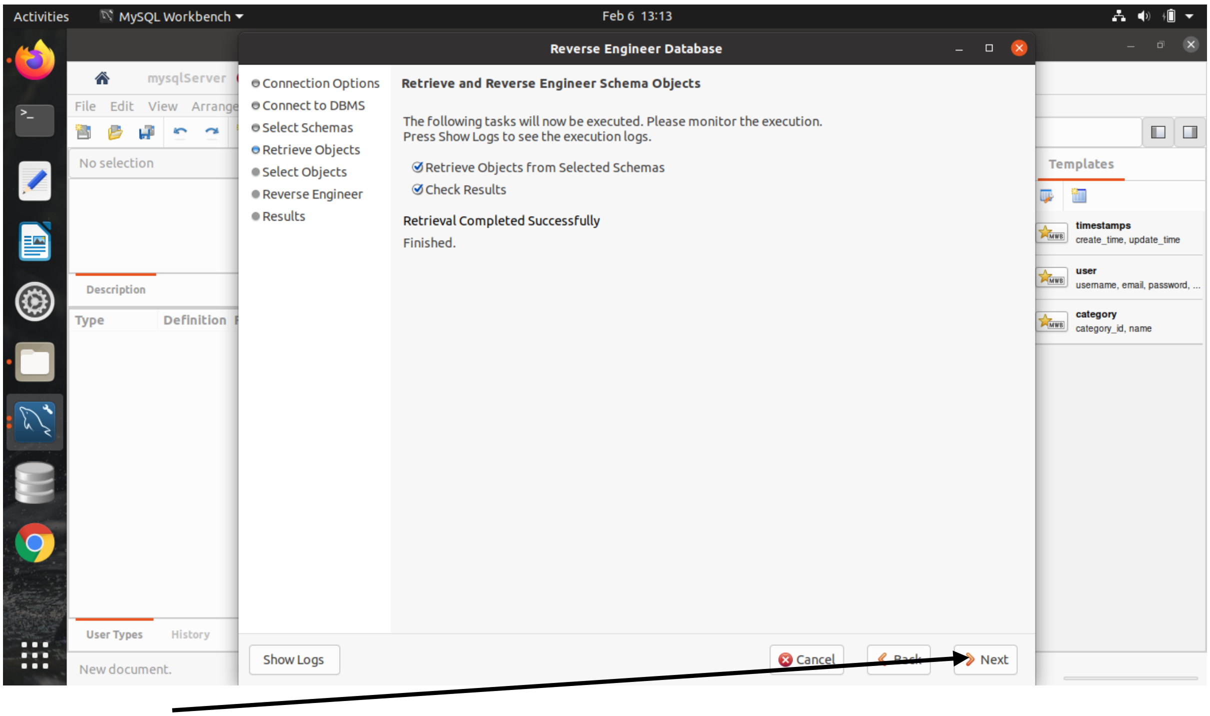
Select Schemas to Reverse Engineer

Select the schemas you want to include:

□ abc
☑ employees
□ phpmyadmin

*Figure 9: Select '**employees**' or '**college**' database or <u>your database of interest</u> and click **Next** button.*

4.



Retrieve and Reverse Engineer Schema Objects

The following tasks will now be executed. Please monitor the execution.
Press Show Logs to see the execution logs.

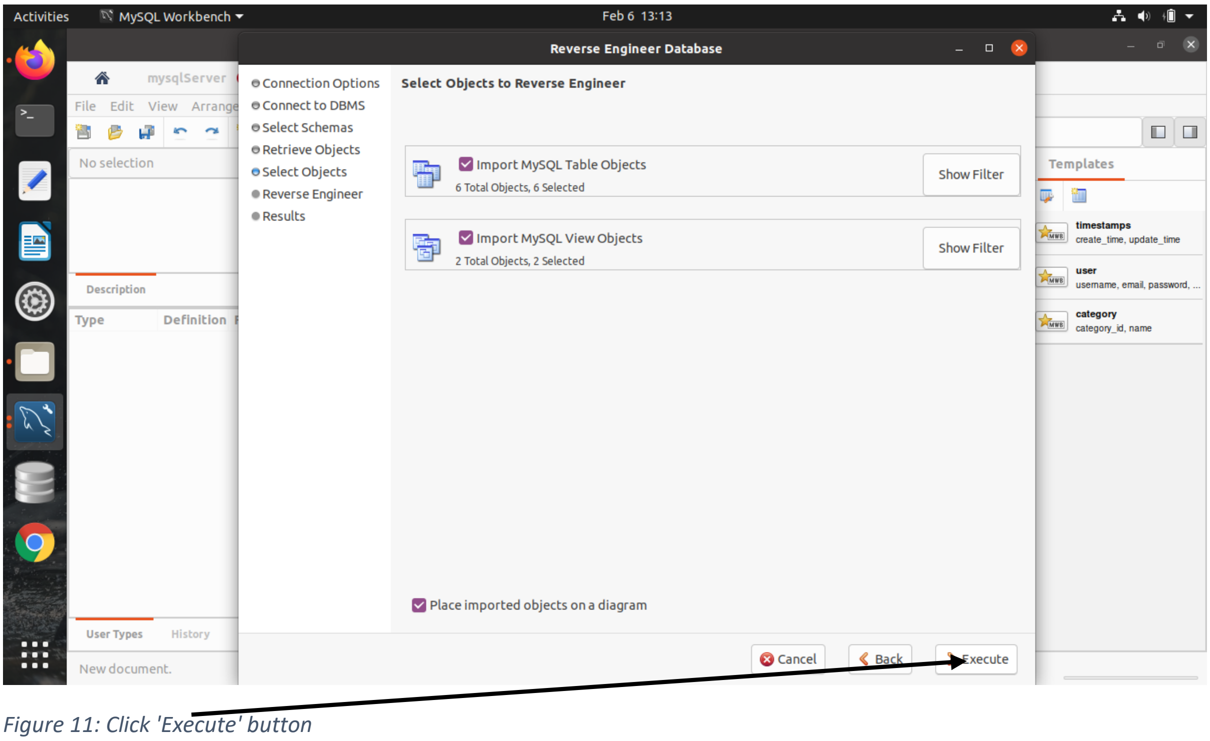
☑ Retrieve Objects from Selected Schemas
☑ Check Results

Retrieval Completed Successfully

Finished.

*Figure 10: Click '**Next**' button.*

5.



Select Objects to Reverse Engineer

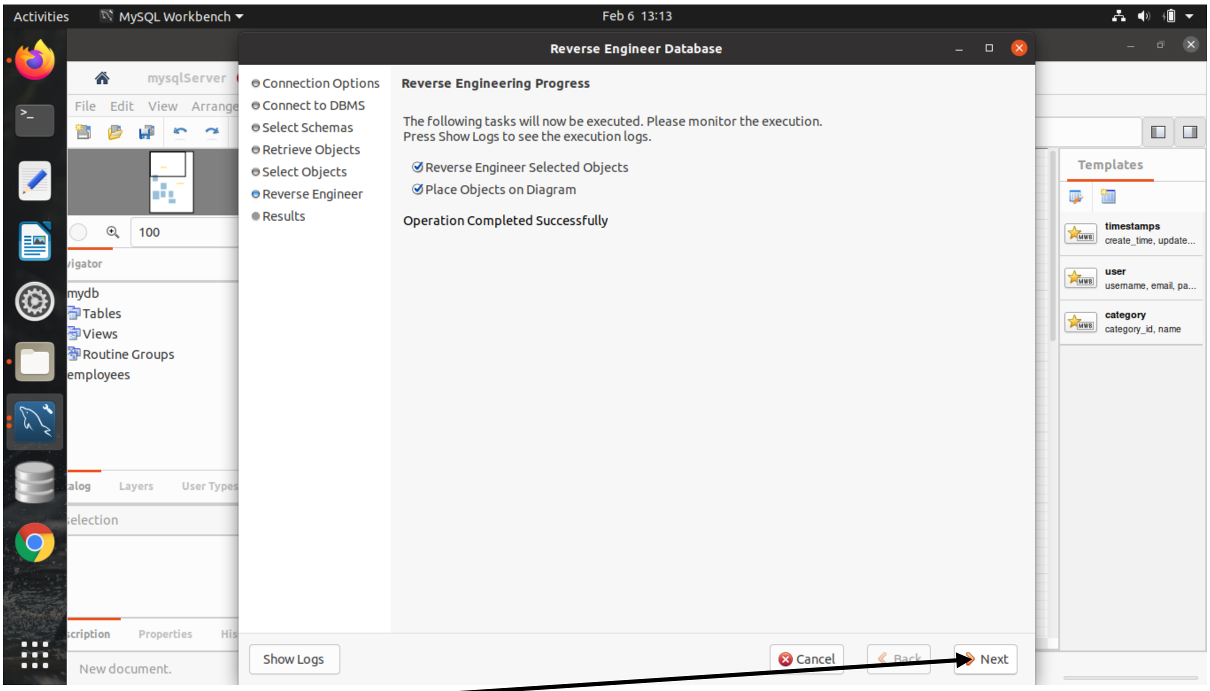
☑ Import MySQL Table Objects
6 Total Objects, 6 Selected

☑ Import MySQL View Objects
2 Total Objects, 2 Selected

☑ Place imported objects on a diagram

Figure 11: Click 'Execute' button

6.



Reverse Engineer Database

Reverse Engineering Progress

The following tasks will now be executed. Please monitor the execution.
Press Show Logs to see the execution logs.

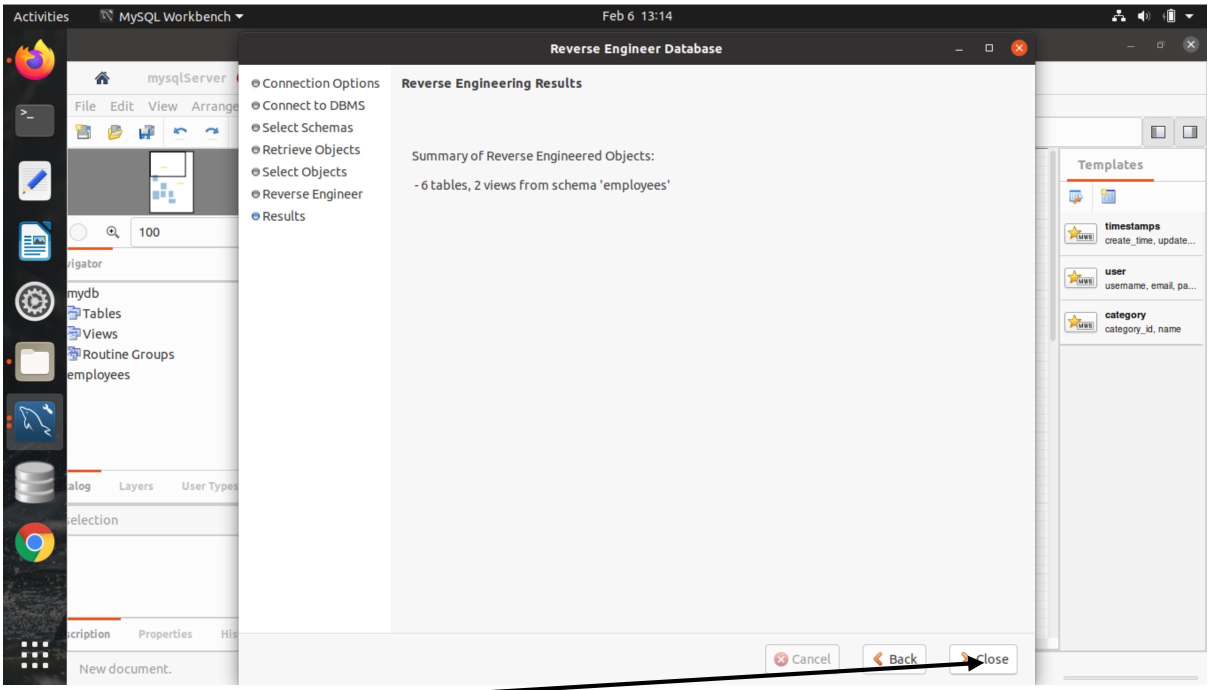
☑ Reverse Engineer Selected Objects

☑ Place Objects on Diagram

Operation Completed Successfully

Figure 12: Click Next

7.



Reverse Engineer Database

Reverse Engineering Results

Summary of Reverse Engineered Objects:

- 6 tables, 2 views from schema 'employees'

Figure 13: Click Close

8.

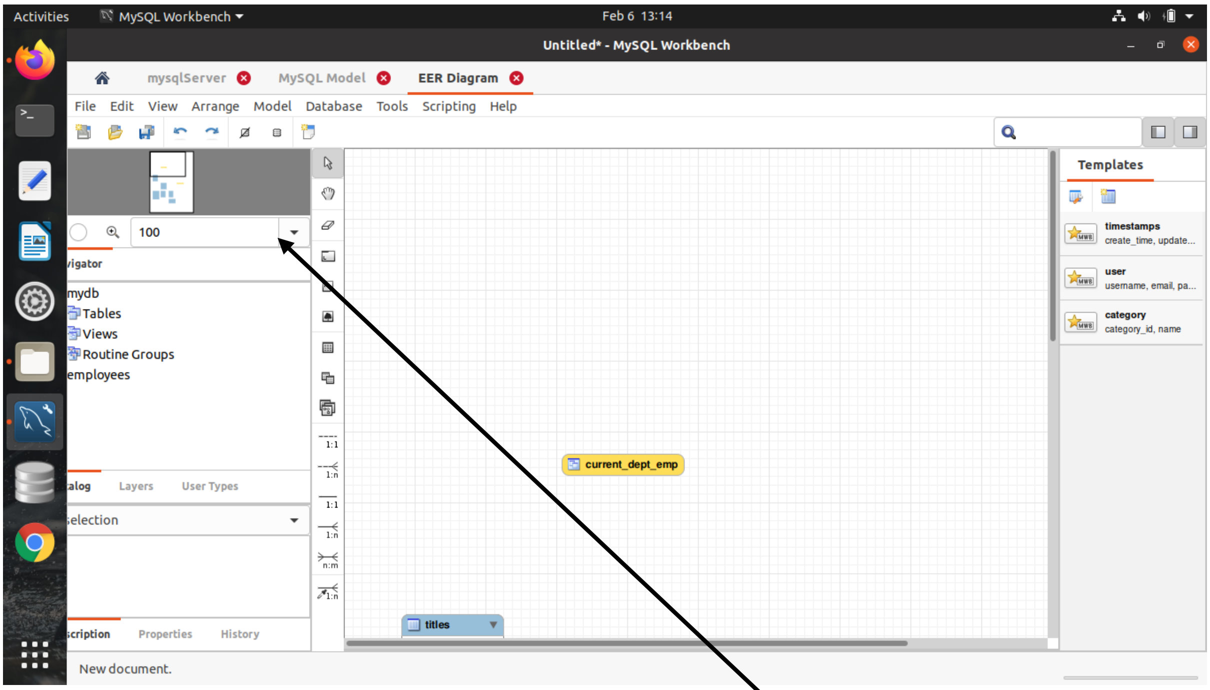


Figure 14: Change zoom level appropriately. In the drop-down, maybe change 100 to 75 to see er diagram.

9.

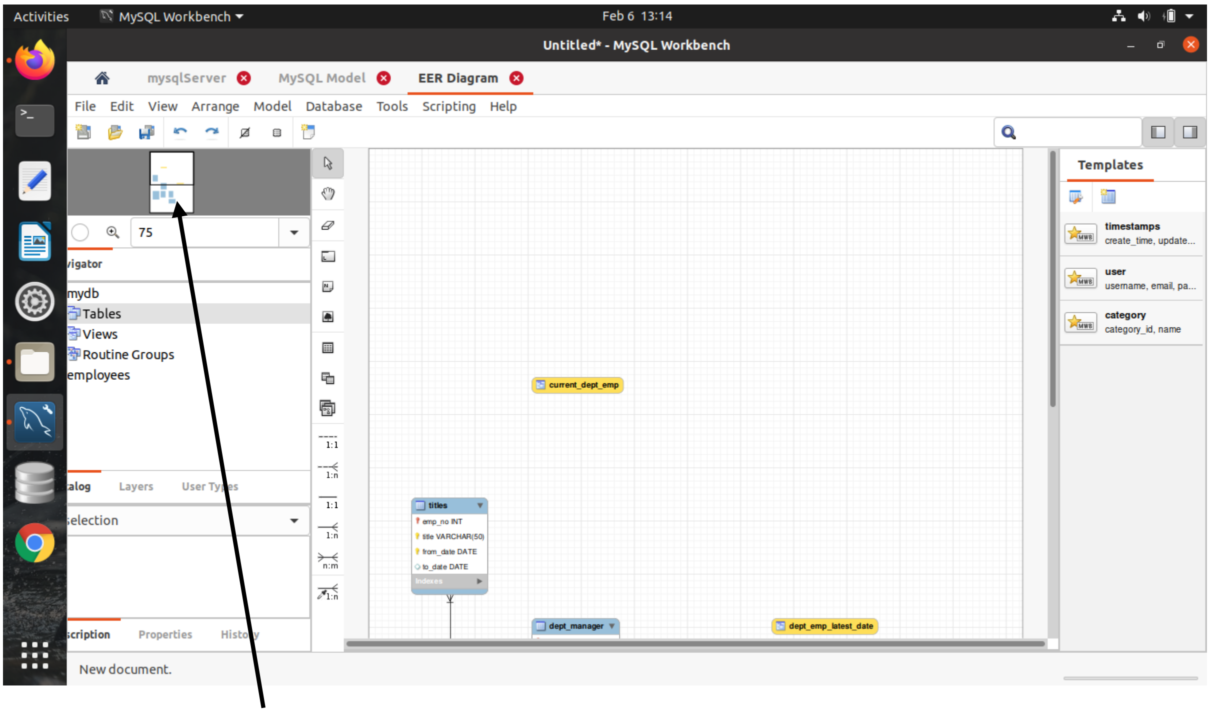


Figure 15: Drag the small rectangle down so that the blue spots are within it. It is a small pre-view of your workbench.

10.

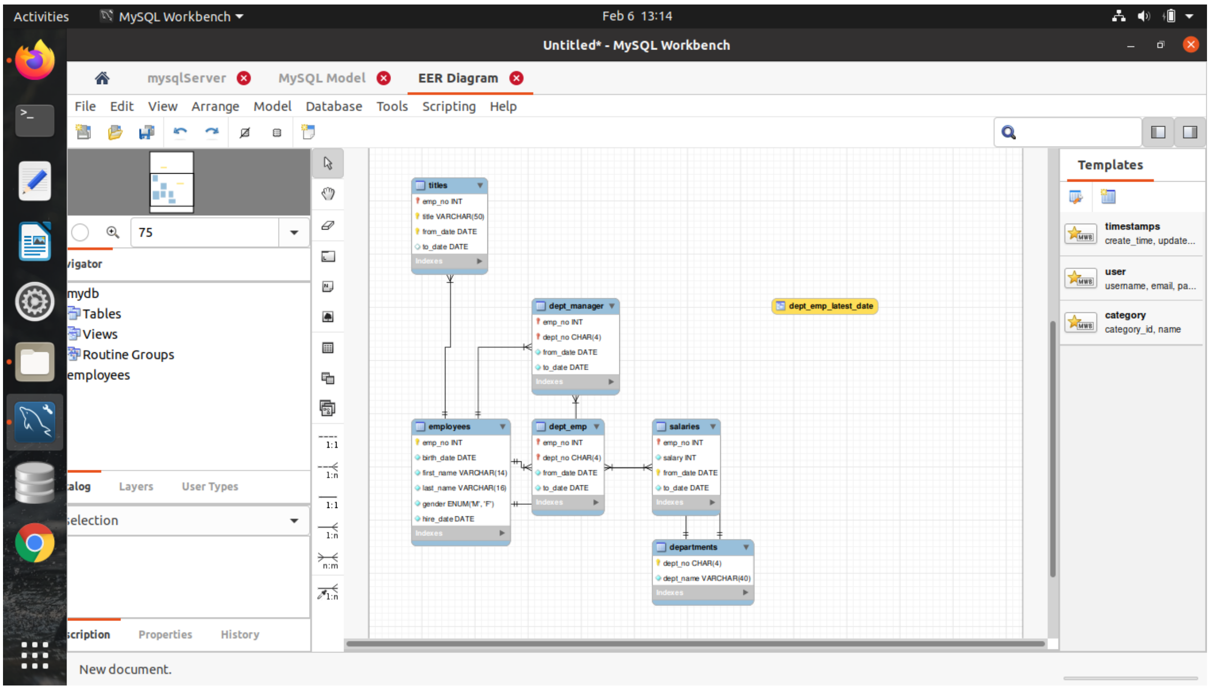


Figure 16: ER diagram. Re-arrange it so that it appears nicely and lines intersect minimum possible.

See below zoomed employees database schema

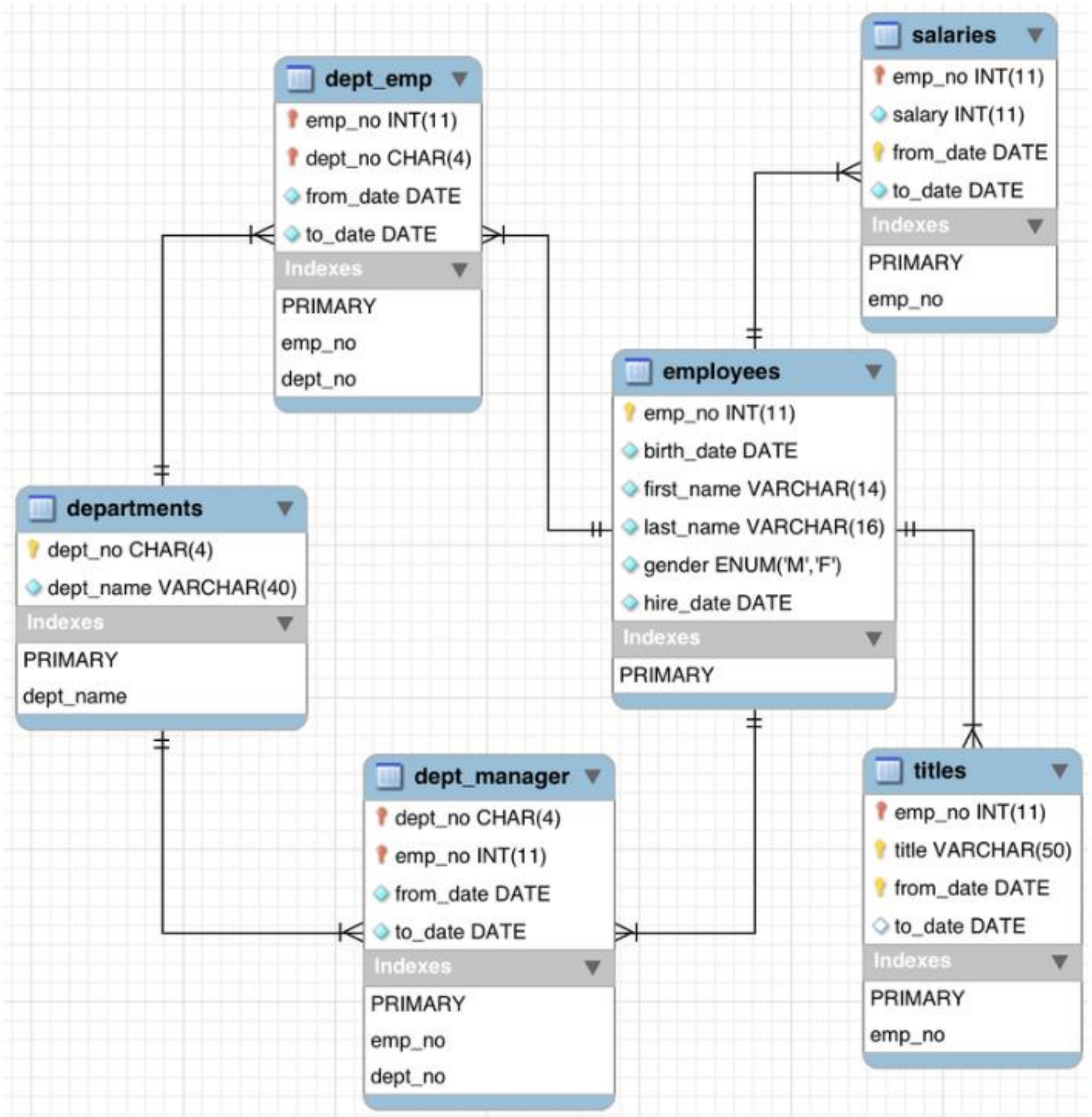


Figure 17: Employees table schema—zoomed

Identifying vs non-identifying relationships

For differences among themselves, please see this link in StackOverflow. The code generated in the two cases is different. Select a relationship that suits your needs.

THERE IS NO POINT IN CREATING 1:1 RELATIONSHIP BETWEEN TWO TABLES. For 1:n, generally use **Identifying relationship**.

Relationships between two entities may be classified as being either "identifying" or "non-identifying". Identifying relationships exist when the primary key of the parent entity is included in the primary key of the child entity. On the other hand, a non-identifying relationship exists when the primary key of the parent entity is included in the child entity but not as part of the child entity's primary key. In addition, non-identifying relationships may be further classified as being either "mandatory" or "non-mandatory". A mandatory non-identifying relationship exists when the value in the child table cannot be null. On the other hand, a non-mandatory non-identifying relationship exists when the value in the child table can be null.

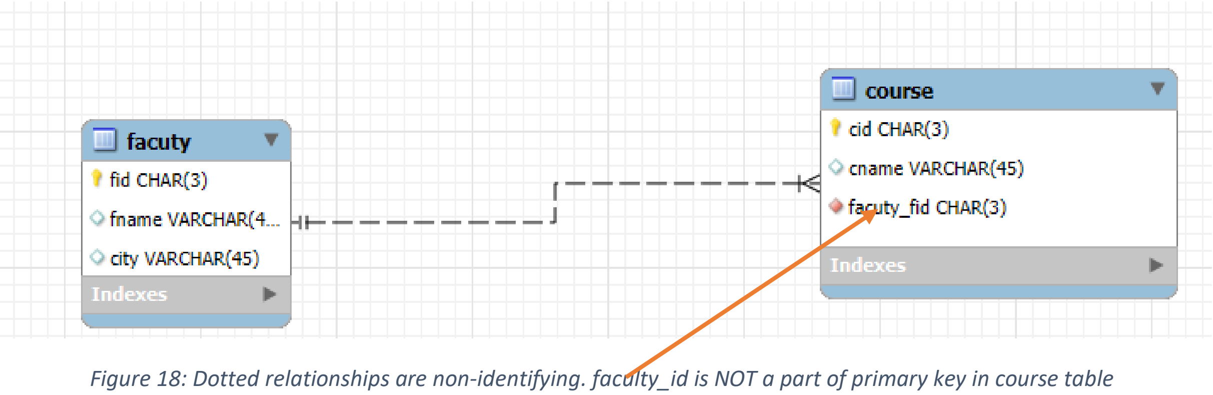


Figure 18: Dotted relationships are non-identifying. faculty_id is NOT a part of primary key in course table

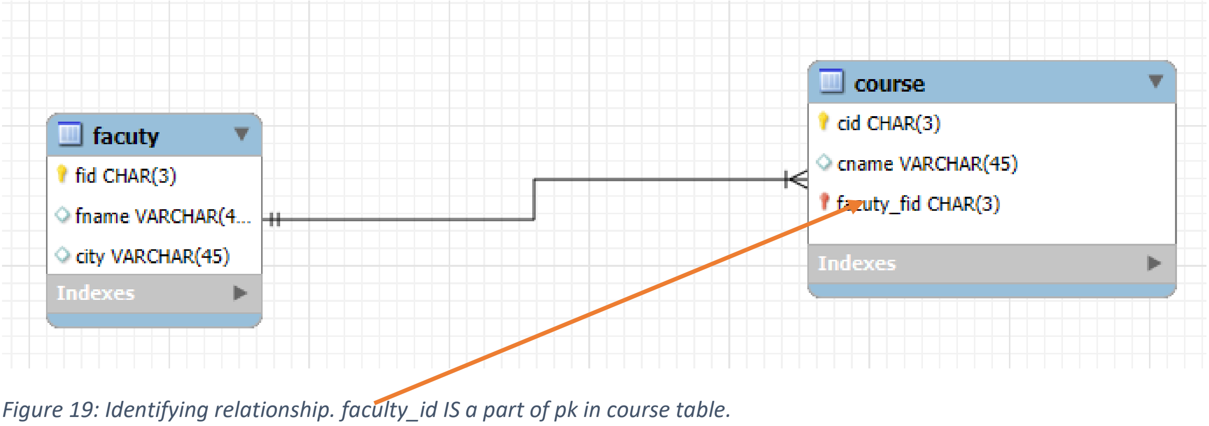


Figure 19: Identifying relationship. faculty_id IS a part of pk in course table.

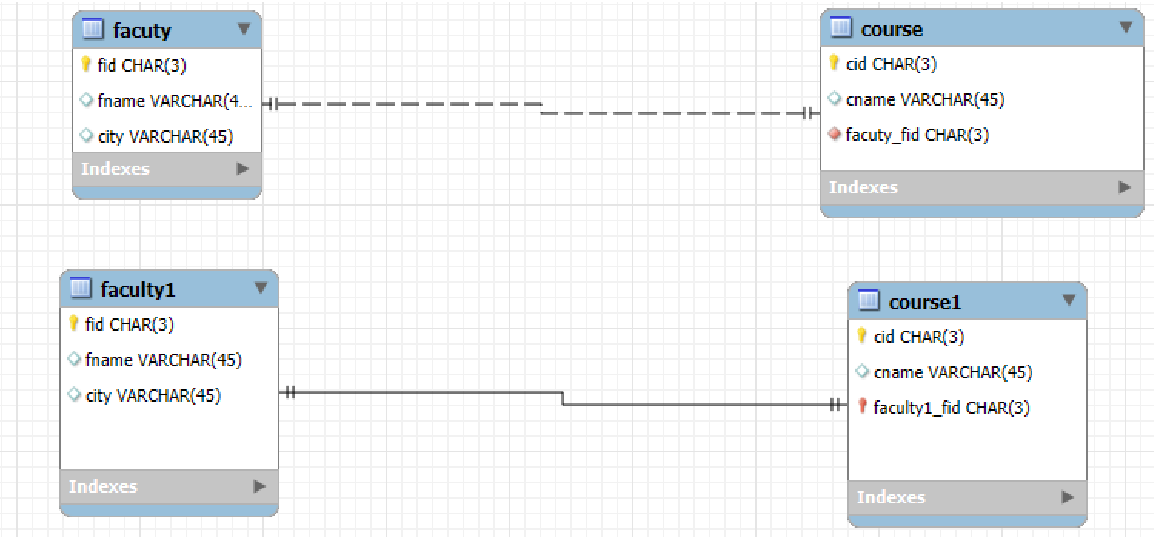


Figure 20: In the upper diagram, faculty_id is not a part of primary key in course table but in the lower diagram it is. In the upper figure, one course can be taught ONLY by one faculty. ONE-TO-ONE RELATIONSHIPS ARE MEANINGLESS.

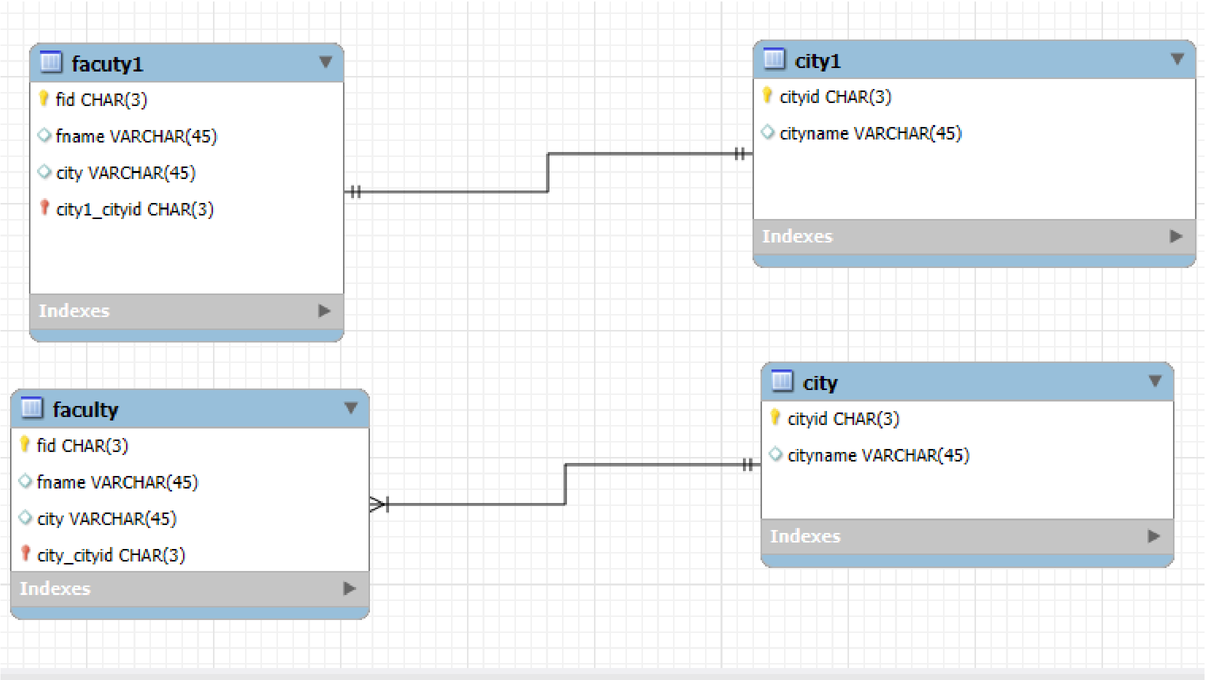


Figure 21: Note that both the above diagrams display the same relationships

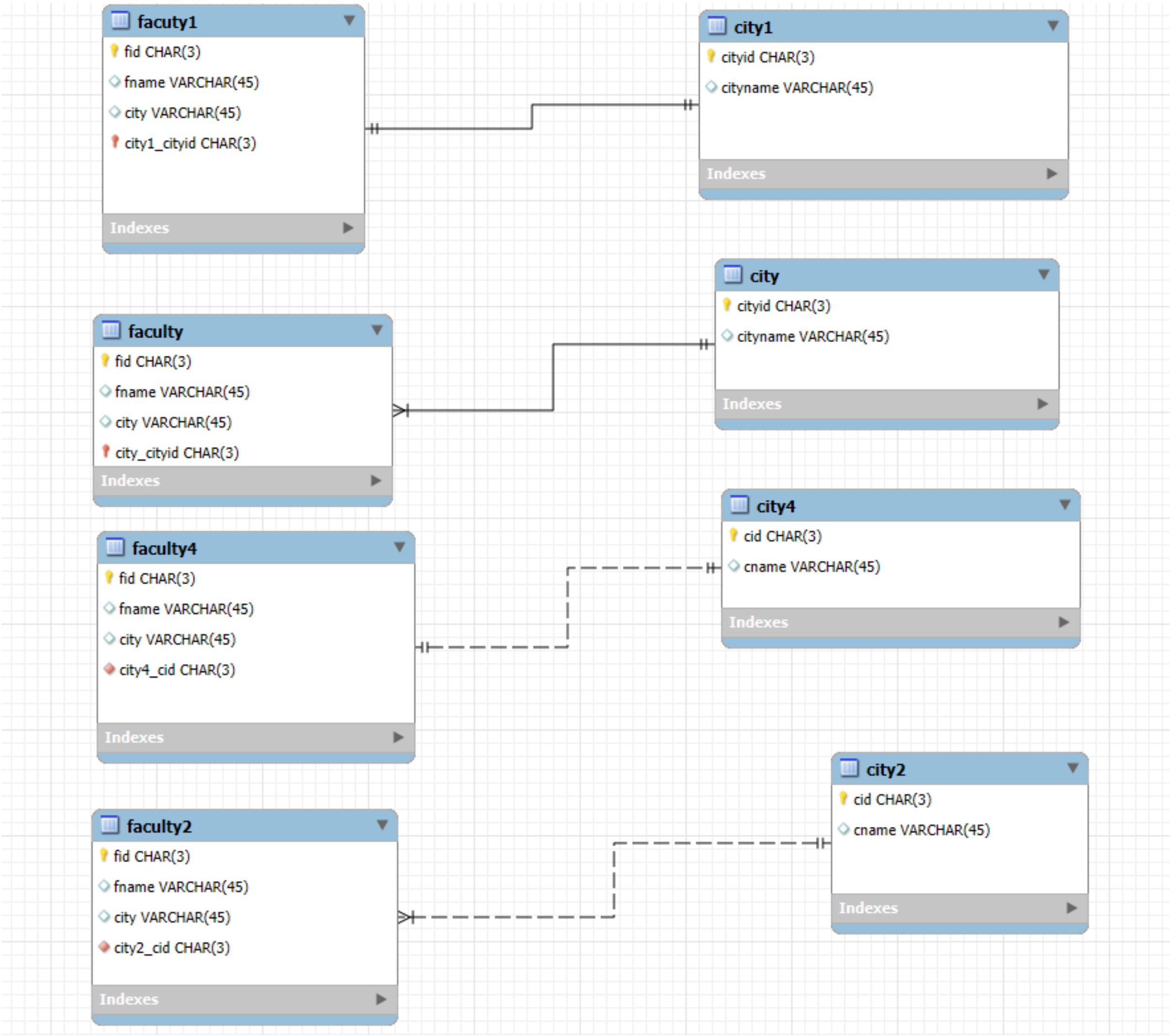


Figure 22: A comparison of different relationships

Faculty-Courses-city ERD

In the following ERD, faculty is the most important entity followed by course. Yet it is the city's table that must be filled up first. Note that 'city' is now redundant in faculty table.

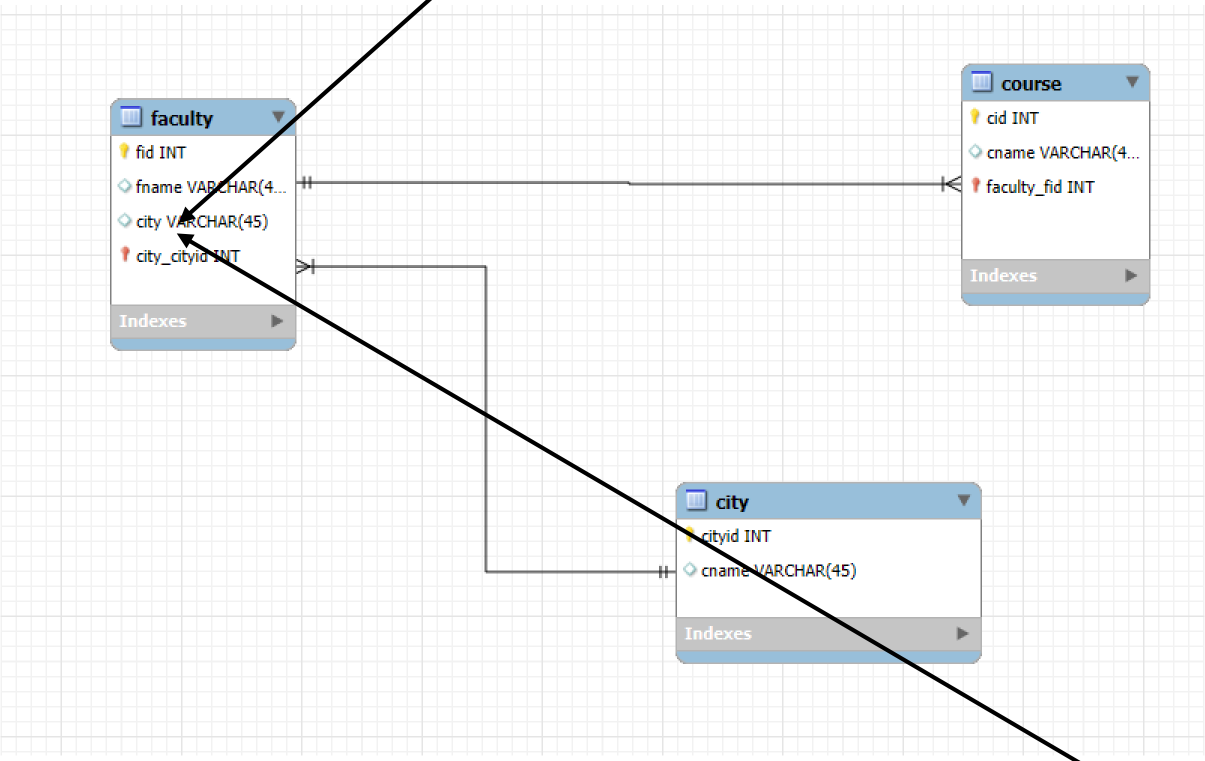


Figure 23:While faculty is the most important entity here, it is the city's table that must be filled up first. Note that city field is now redundant in faculty table.

Forward Engineering

Forward Engineering: Press ctrl+G to perform Forward Engineering. And press ctrl+SHIFT+G to save forward engineered script.

Restart Workbench to find the database changed.

Row insertion

To insert a row in any table.

under schemas,
click your database, say, college,
right click on a table, say city,
then click on **Send to SQL Editor→Insert statement**

(See figure below)

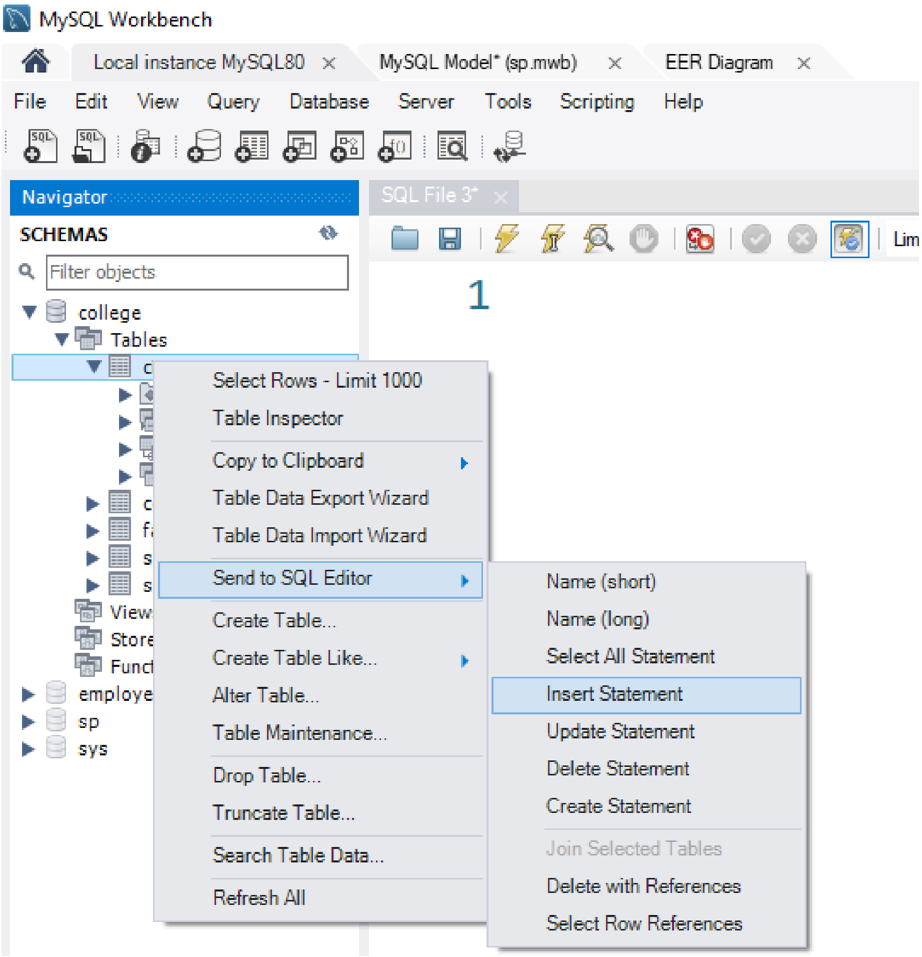
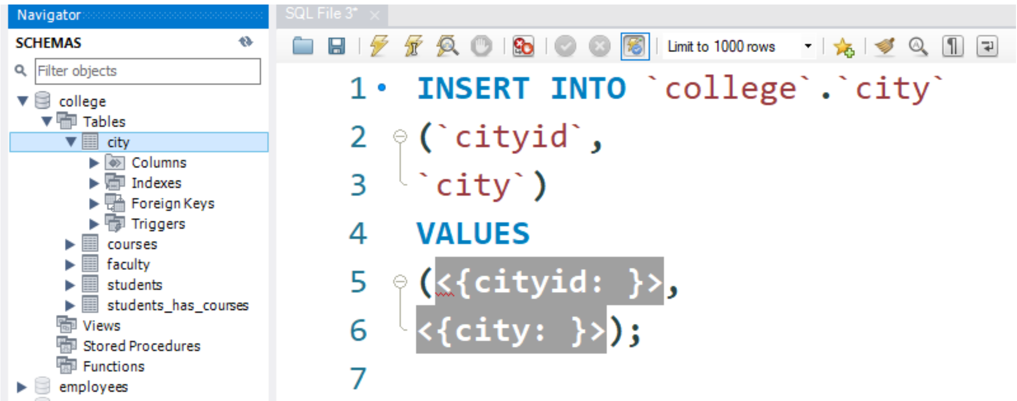


Figure 24: Generating an insert statement in SQL editor for a table

An insert statement appears, fill in values and execute:



```
INSERT INTO `college`.`city`
(`cityid`,
`city`)
VALUES
(<{cityid: }>,
<{city: }>);
```

Figure 25: Replace <{cityid: }> and <{city:}> with actual values in insert statement and execute

MySQL Data types

MySQL offers a comprehensive range of data types categorized into numeric, string, and date/time types, along with specialized types like spatial and JSON.

1. Numeric Data Types:

   - **Integers:**

Used for whole numbers.

  - `TINYINT`: Very small integers (-128 to 127 signed, 0 to 255 unsigned). Example: `age TINYINT UNSIGNED`.
  - `SMALLINT`: Small integers (-32768 to 32767 signed). Example: `postal_code SMALLINT`.
  - `MEDIUMINT`: Medium-sized integers. Example: `employee_id MEDIUMINT`.
  - `INT` (or `INTEGER`): Standard integers. Example: `user_count INT`.
  - `BIGINT`: Large integers. Example: `population BIGINT`.
- **Floating-Point Numbers:**

  Used for numbers with decimal points.

  - `FLOAT(p)`: Single-precision floating-point number. Example: `price FLOAT(10,2)`.
  - `DOUBLE(p,s)`: Double-precision floating-point number. Example: `latitude DOUBLE(9,6)`.
- **Fixed-Point Numbers:**
  - `DECIMAL(p,s)` (or `NUMERIC`): Exact decimal representation, where `p` is the total number of digits and `s` is the number of digits after the decimal point. Example: `salary DECIMAL(10,2)`.
- **Boolean:**
  - `BOOLEAN` (or `BOOL`): A synonym for `TINYINT(1)`, representing true (1) or false (0). Example: `is_active BOOLEAN`.

2. String Data Types:

- **Fixed-Length Strings:**
  - `CHAR(size)`: Stores a fixed-length string, padded with spaces if shorter than `size`. Example: `country_code CHAR(2)`.
- **Variable-Length Strings:**
  - `VARCHAR(size)`: Stores a variable-length string, up to `size` characters. Example: `product_name VARCHAR(255)`.
- **Large Text:**
  - `TINYTEXT`, `TEXT`, `MEDIUMTEXT`, `LONGTEXT`: Used for storing large amounts of text data, with increasing storage capacity. Example: `product_description TEXT`.
- **Binary Strings:**
  - `BINARY(size)`, `VARBINARY(size)`: Similar to `CHAR` and `VARCHAR` but store binary byte strings. Example: `checksum VARBINARY(32)`.
- **Binary Large Objects:**
  - `TINYBLOB`, `BLOB`, `MEDIUMBLOB`, `LONGBLOB`: Used for storing binary data like images or files. Example: `profile_picture BLOB`.
- **Enumerated Type:**
  - `ENUM('value1', 'value2', ...)`: Allows a column to have one value from a predefined list. Example: `status ENUM('active', 'inactive', 'pending')`.

3. Date and Time Data Types:

- `DATE`: Stores a date in 'YYYY-MM-DD' format. Example: `birth_date DATE`.
- `TIME`: Stores a time in 'HH:MM:SS' format. Example: `start_time TIME`.
- `DATETIME`: Stores both date and time in 'YYYY-MM-DD HH:MM:SS' format. Example: `event_timestamp DATETIME`.
- `TIMESTAMP`: Stores a timestamp, automatically updated on record modification by default. Example: `last_updated TIMESTAMP`.
- `YEAR`: Stores a year in 2-digit or 4-digit format. Example: `release_year YEAR(4)`.

Examples:

(See file: `example.sql`)

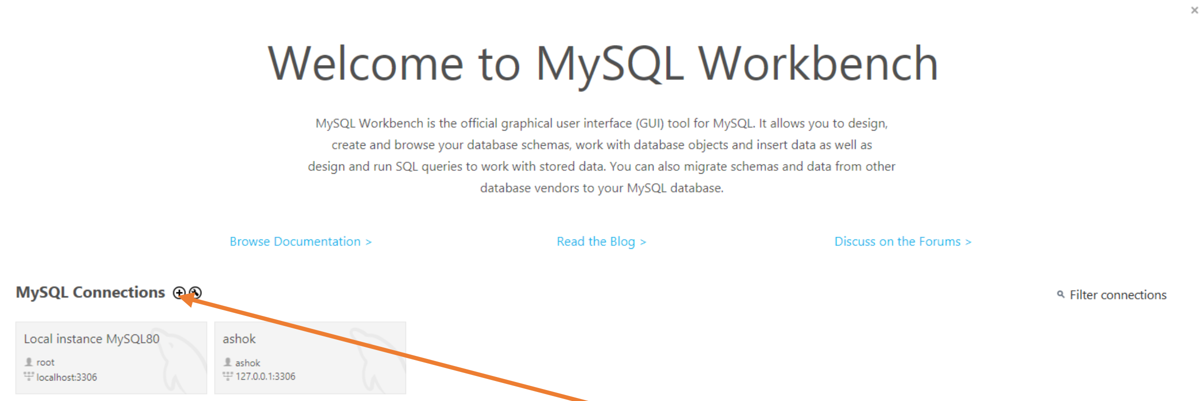
```
-- Some Basic experiments in databases

-- 1. Remove database(s)
drop database if exists college ;
-- 1.1
drop database if exists univ ;

-- 2. Create databases
create database if not exists college ;
-- 2.1
create database if not exists univ ;

-- 3. Create tables
use college ;
-- 3.1
drop table if exists student ;

-- 4. create a very simple table
create table faculty ( fid int , fname varchar(40) ) ;

-- 5. Execute the following mutiple times.
insert into faculty values ( 123 , 'abc' ) ;
-- 5.1 Duplicate insertion gets permitted just as in Excel
insert into faculty values ( 123 , 'abc' ) ;
-- 5.2 This fails, unlike excel
insert into faculty values ('def' , 'cde') ;

-- 6. Check this table disallows duplicate fid, unlike excel
create table faculty ( fid int primary key,
                        fname varchar(40) ) ;

-- 7. More constraints
drop table faculty ;

-- 8. Check this table disallows age < 24
create table faculty ( fid int primary key,
                       fname varchar(45) ,
                       age float check (age > 24)
                       ) ;

-- 8.1
insert into faculty values (123, 'abc', 25 ) ;
-- 8.2 This fails
insert into faculty values (123, 'abc', 23 ) ;

-- *******************--
```

MySQL User creation

Create a user ‘`ravi`’ with password, ashok. User, ‘`ravi`’ can access database only from localhost.

```
-- In SQL editor Create a user who can access from localhost
create user 'ravi'@'localhost' identified by 'ashok' ;
```

- Close MySQL Workbench and follow the steps below:



Welcome to MySQL Workbench

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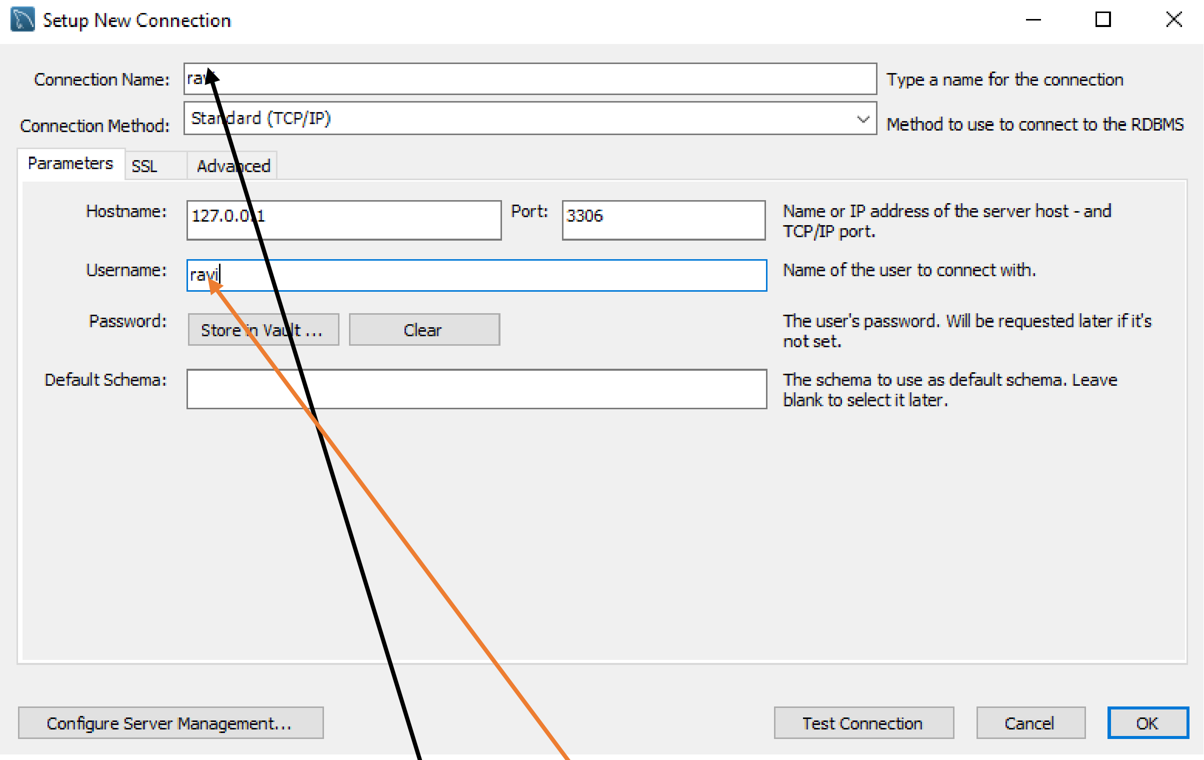
Figure 26: We have here only two users. One is root and the other is 'ashok' . Click on + icon here to create a new connection with another user.



Setup New Connection

Connection Name: ravi — Type a name for the connection

Connection Method: Standard (TCP/IP) — Method to use to connect to the RDBMS

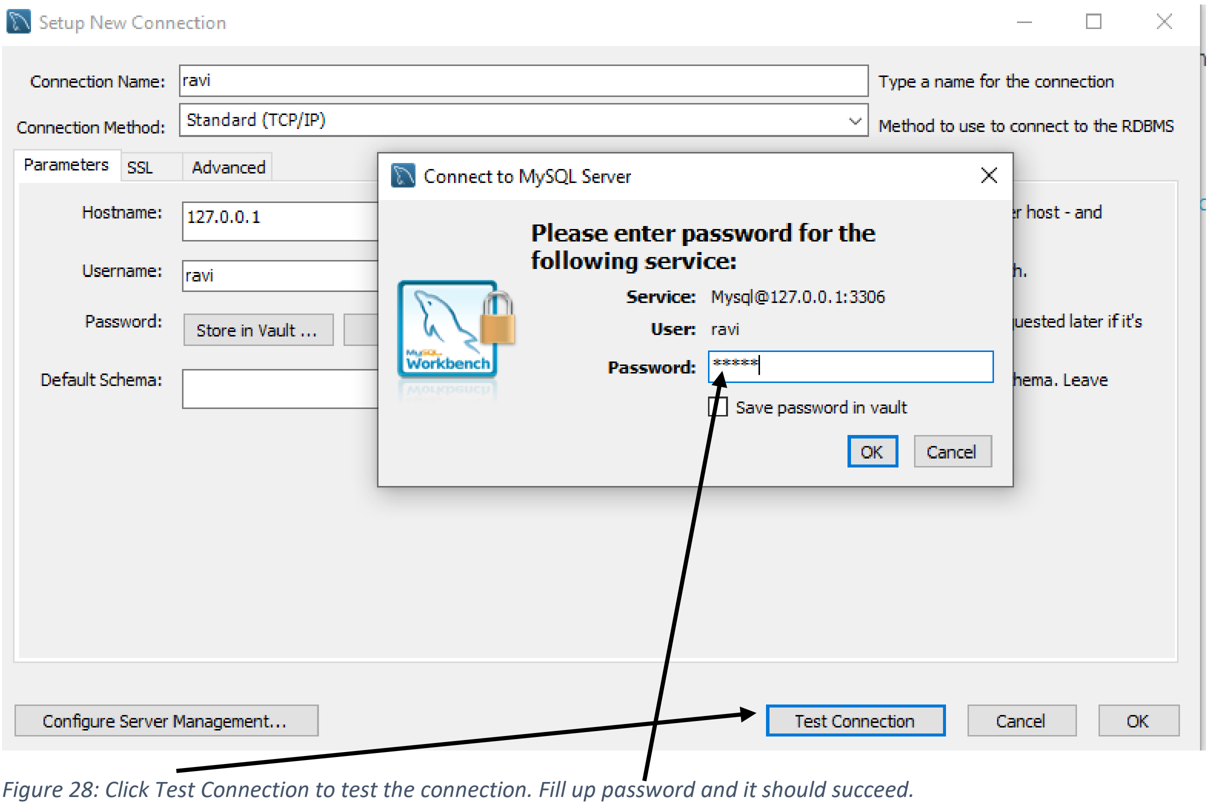
Hostname: 127.0.0.1 Port: 3306 — Name or IP address of the server host - and TCP/IP port.

Username: ravi — Name of the user to connect with.

Password: — The user's password. Will be requested later if it's not set.

Default Schema: — The schema to use as default schema. Leave blank to select it later.

Figure 27: Fill up two information: connection name and user name.



Setup New Connection

Connection Name: ravi — Type a name for the connection

Connection Method: Standard (TCP/IP) — Method to use to connect to the RDBMS

Hostname: 127.0.0.1

Username: ravi

Password:

Default Schema:

Connect to MySQL Server

Please enter password for the following service:

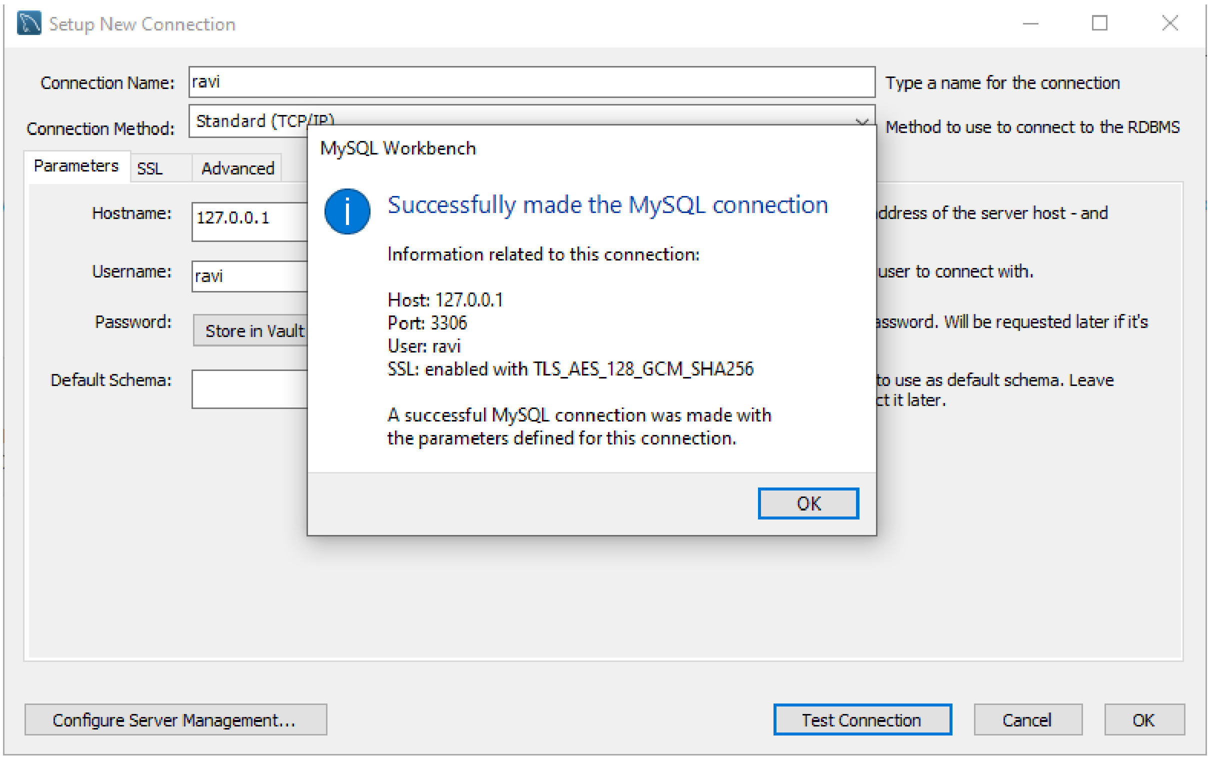
Service: Mysql@127.0.0.1:3306

User: ravi

Password: *****

□ Save password in vault

Figure 28: Click Test Connection to test the connection. Fill up password and it should succeed.



Setup New Connection

Connection Name: ravi — Type a name for the connection

Connection Method: Standard (TCP/IP) — Method to use to connect to the RDBMS

Hostname: 127.0.0.1

Username: ravi

Password:

Default Schema:

MySQL Workbench

Successfully made the MySQL connection

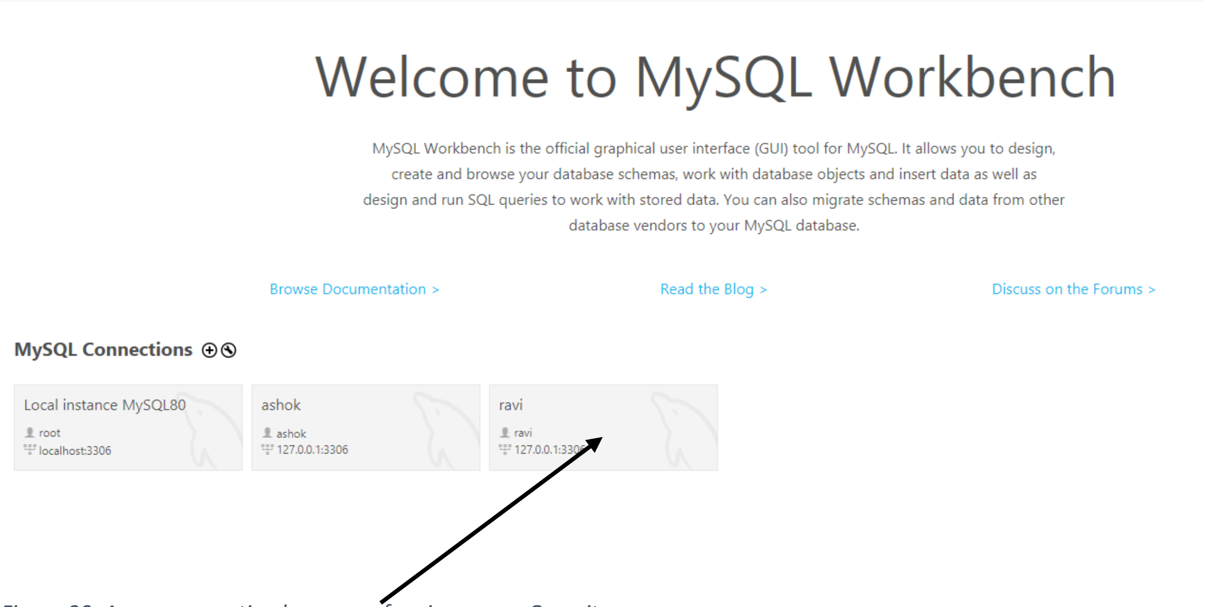
Information related to this connection:

Host: 127.0.0.1
Port: 3306
User: ravi
SSL: enabled with TLS_AES_128_GCM_SHA256

A successful MySQL connection was made with the parameters defined for this connection.

Parameters
SSL
Advanced
Store in Vault
ddress of the server host - and
user to connect with.
ssword. Will be requested later if it's
to use as default schema. Leave
ct it later.
OK
Configure Server Management...
Test Connection
Cancel
OK

Figure 29: Connection succeeds



Welcome to MySQL Workbench

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Figure 30: A new connection by name of ravi appears. Open it.

The following sql command fails for user 'ravi'.

```
create database college ;
```

Close MySQL Workbench, open again as root. And issue the following SQL command:

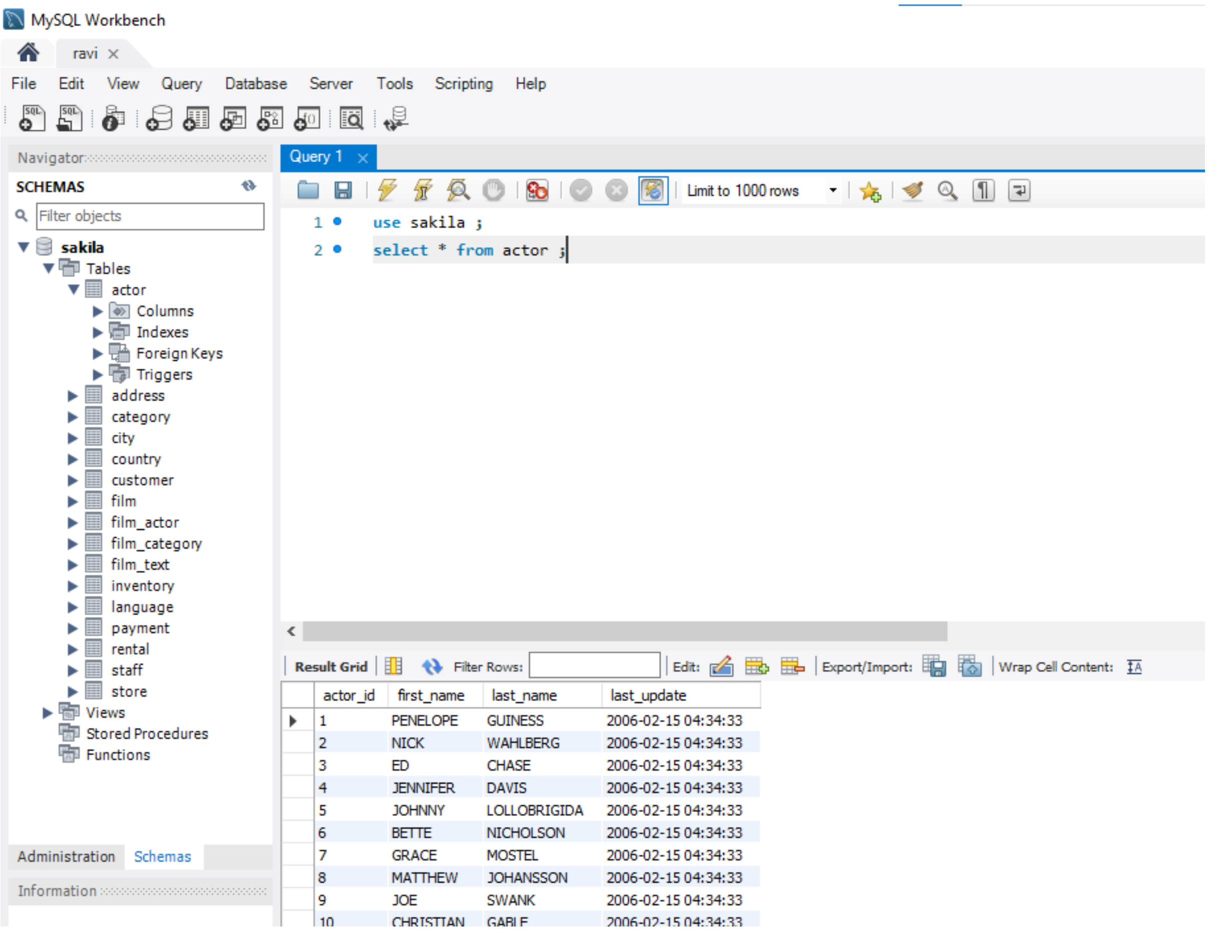
```
GRANT SELECT ON sakila.* TO 'ravi'@'localhost';
```

Close MySQL Workbench. Open it as user `ravi`. Issue the following two commands:

```
use sakila ;

select * from actor ;
```

See the output in the figure below.



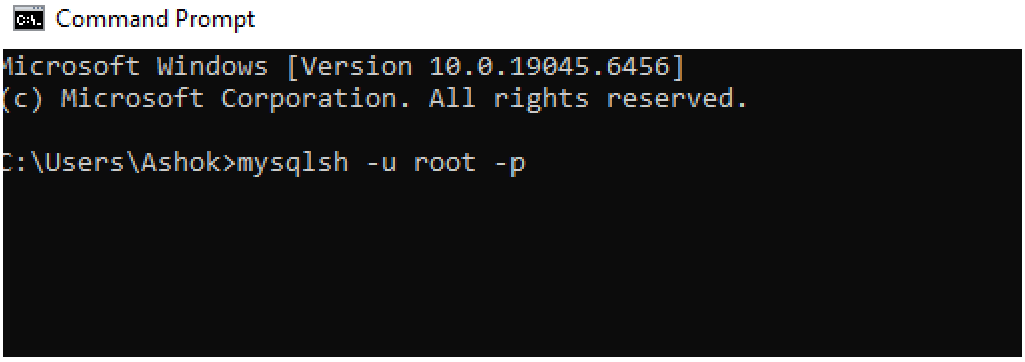
```sql
use sakila ;
select * from actor ;
```

actor_id	first_name	last_name	last_update
1	PENELOPE	GUINESS	2006-02-15 04:34:33
2	NICK	WAHLBERG	2006-02-15 04:34:33
3	ED	CHASE	2006-02-15 04:34:33
4	JENNIFER	DAVIS	2006-02-15 04:34:33
5	JOHNNY	LOLLOBRIGIDA	2006-02-15 04:34:33
6	BETTE	NICHOLSON	2006-02-15 04:34:33
7	GRACE	MOSTEL	2006-02-15 04:34:33
8	MATTHEW	JOHANSSON	2006-02-15 04:34:33
9	JOE	SWANK	2006-02-15 04:34:33
10	CHRISTIAN	GABLE	2006-02-15 04:34:33

MySQL shell

Refer this link for commands

To access *mysql shell* (`mysqlsh`), open command prompt and enter the `mysqlsh` command, as below:

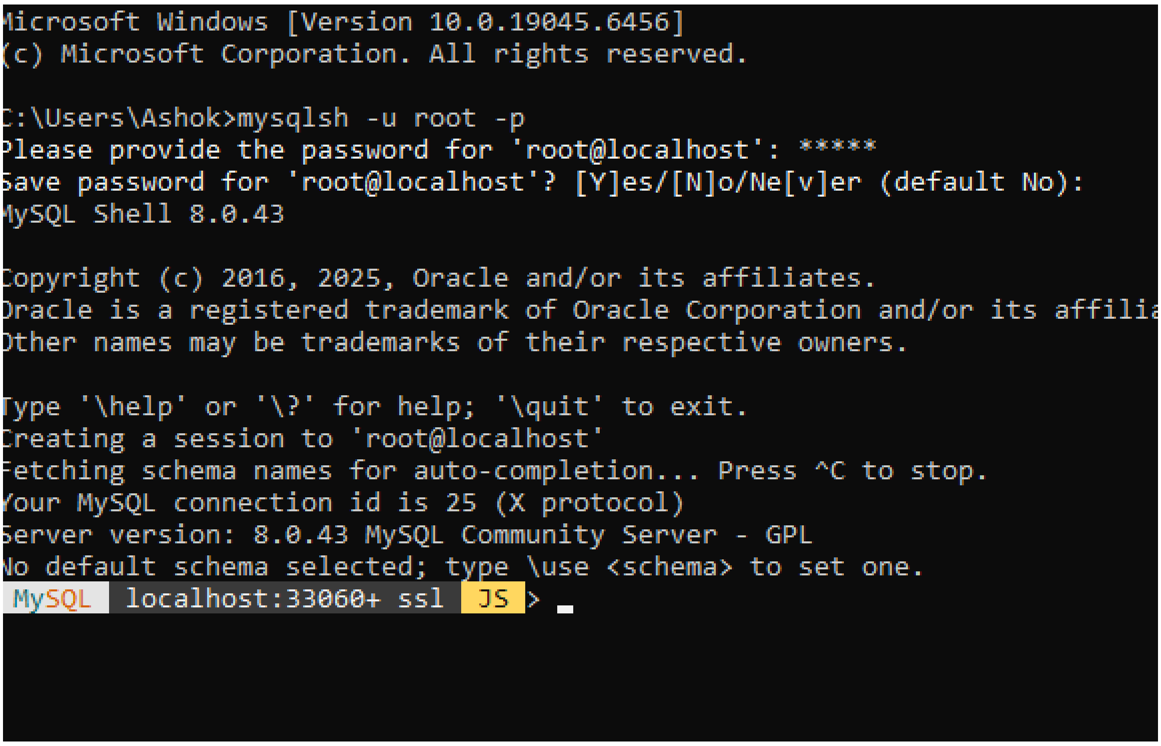


```
Microsoft Windows [Version 10.0.19045.6456]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Ashok>mysqlsh -u root -p
```

Figure 31: Open command prompt and connect to mysql shell

Command Prompt - mysqlsh -u root -p



```
icrosoft Windows [Version 10.0.19045.6456]
(c) Microsoft Corporation. All rights reserved.

:\Users\Ashok>mysqlsh -u root -p
lease provide the password for 'root@localhost': *****
ave password for 'root@localhost'? [Y]es/[N]o/Ne[v]er (default No):
ySQL Shell 8.0.43

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racle is a registered trademark of Oracle Corporation and/or its affili
ther names may be trademarks of their respective owners.

ype '\help' or '\?' for help; '\quit' to exit.
reating a session to 'root@localhost'
etching schema names for auto-completion... Press ^C to stop.
our MySQL connection id is 25 (X protocol)
erver version: 8.0.43 MySQL Community Server - GPL
o default schema selected; type \use <schema> to set one.
 MySQL  localhost:33060+ ssl  JS > _
```
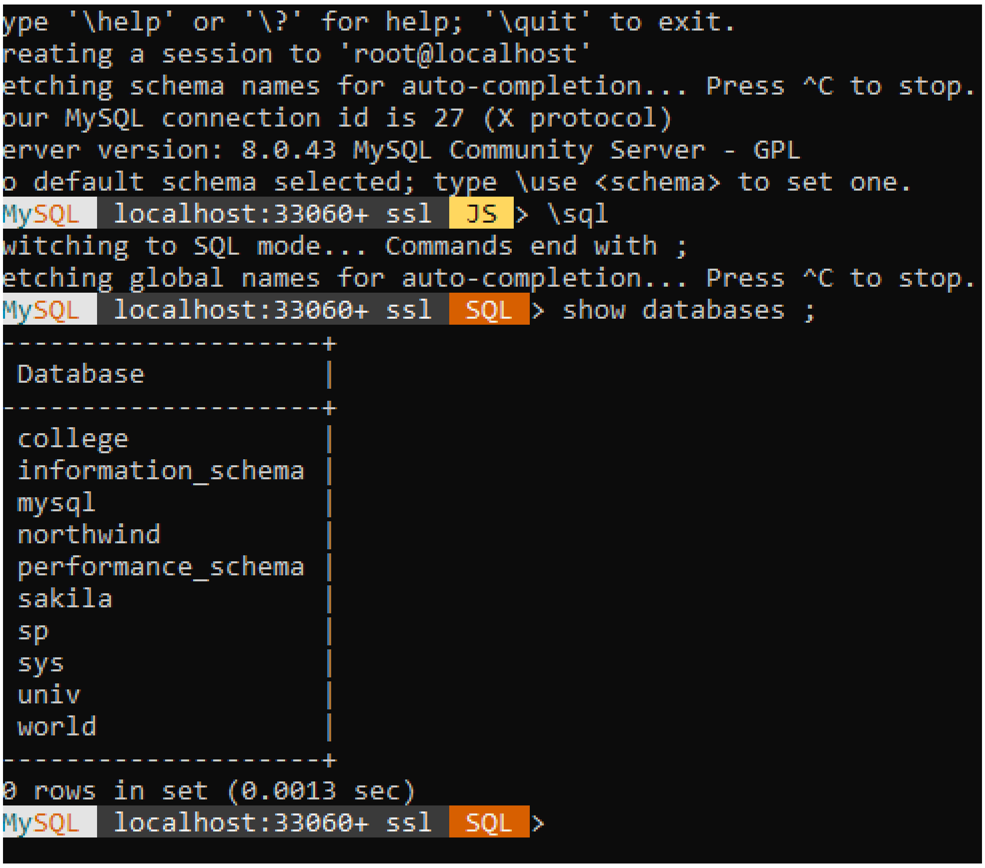
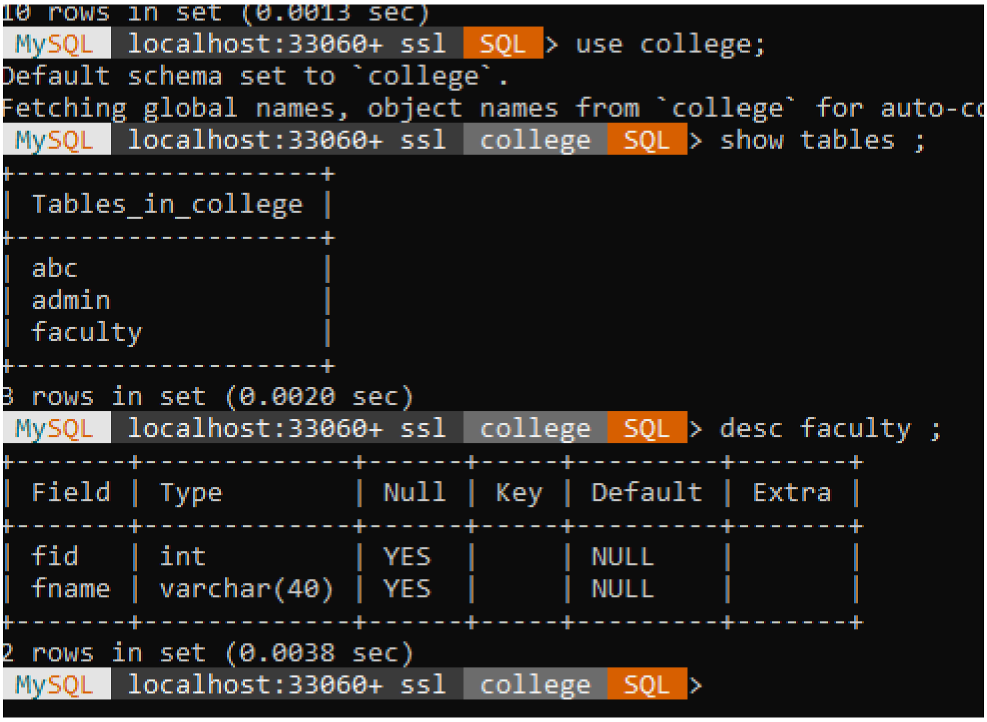

Figure 32: Enter sql mode by issue of \sql.

Command Prompt - mysqlsh -u root -p



```
ype '\help' or '\?' for help; '\quit' to exit.
reating a session to 'root@localhost'
etching schema names for auto-completion... Press ^C to stop.
our MySQL connection id is 27 (X protocol)
erver version: 8.0.43 MySQL Community Server - GPL
o default schema selected; type \use <schema> to set one.
MySQL  localhost:33060+ ssl  JS > \sql
witching to SQL mode... Commands end with ;
etching global names for auto-completion... Press ^C to stop.
MySQL  localhost:33060+ ssl  SQL > show databases ;
--------------------+
 Database           |
--------------------+
 college            |
 information_schema |
 mysql              |
 northwind          |
 performance_schema |
 sakila             |
 sp                 |
 sys                |
 univ               |
 world              |
--------------------+
0 rows in set (0.0013 sec)
MySQL  localhost:33060+ ssl  SQL >
```

Figure 33: Then issue show databases command or show tables comands



```
10 rows in set (0.0013 sec)
 MySQL  localhost:33060+ ssl  SQL > use college;
Default schema set to `college`.
Fetching global names, object names from `college` for auto-co
 MySQL  localhost:33060+ ssl  college  SQL > show tables ;
+-------------------+
| Tables_in_college |
+-------------------+
| abc               |
| admin             |
| faculty           |
+-------------------+
3 rows in set (0.0020 sec)
 MySQL  localhost:33060+ ssl  college  SQL > desc faculty ;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| fid   | int         | YES  |     | NULL    |       |
| fname | varchar(40) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
2 rows in set (0.0038 sec)
 MySQL  localhost:33060+ ssl  college  SQL >
```

*Figure 34: Three commands: i) use college ,ii) show tables iii) desc faculty commands. You can also issue select * from..*

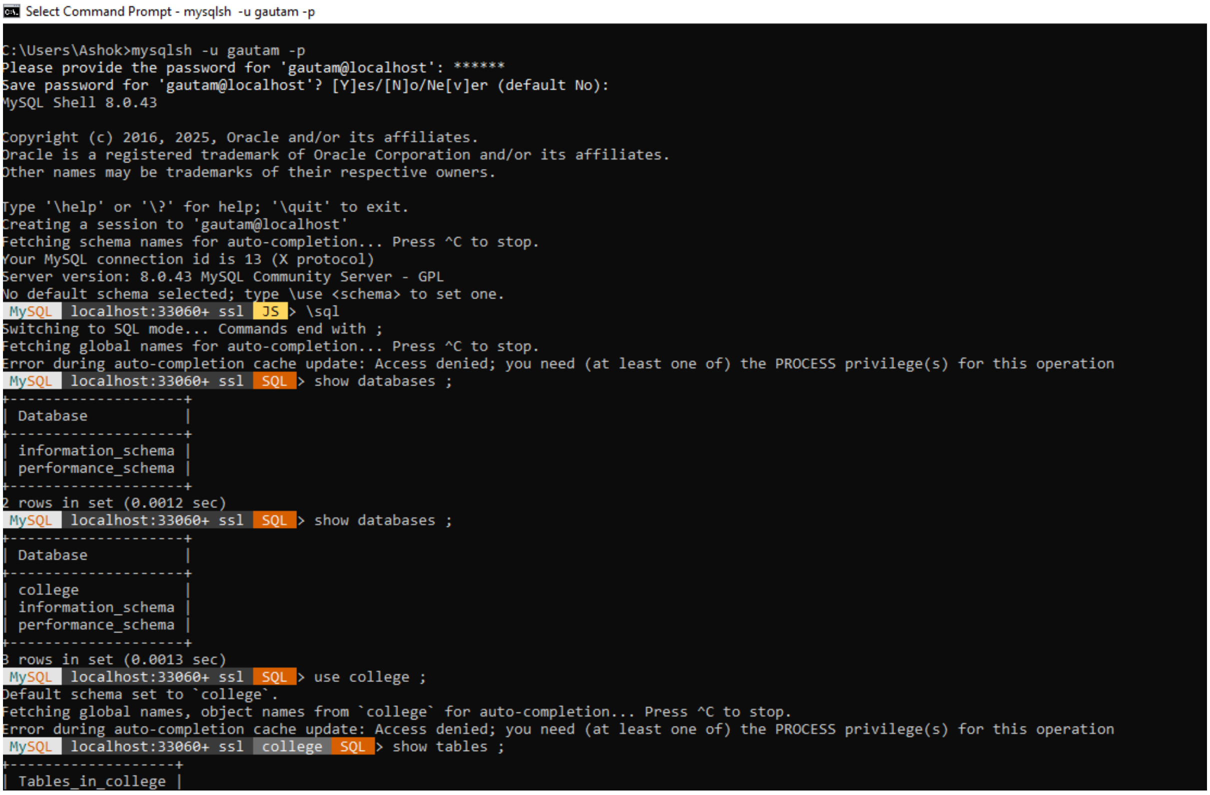
Grant Experiments

Open MySQL server-bench as `root` user and open command prompt. In Mysql server bench, create a user `gautam`, as:

```
create user 'gautam'@'localhost' identified by 'gautam' ;
```

In command prompt, log into `mysqlsh` as user `gautam`. Issue `show databases` command. No user databases are visible. Then in the MySQL Server Bench, issue the following grant command:

```
grant select on college.faculty to 'gautam'@'localhost' ;

(as against:

GRANT CREATE ON college.* TO gautam@'localhost' ;)
```



Select Command Prompt - mysqlsh -u gautam -p

```
:\Users\Ashok>mysqlsh -u gautam -p
lease provide the password for 'gautam@localhost': ******
ave password for 'gautam@localhost'? [Y]es/[N]o/Ne[v]er (default No):
ySQL Shell 8.0.43

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ther names may be trademarks of their respective owners.

ype '\help' or '\?' for help; '\quit' to exit.
reating a session to 'gautam@localhost'
etching schema names for auto-completion... Press ^C to stop.
our MySQL connection id is 13 (X protocol)
erver version: 8.0.43 MySQL Community Server - GPL
o default schema selected; type \use <schema> to set one.
 MySQL  localhost:33060+ ssl  JS > \sql
witching to SQL mode... Commands end with ;
etching global names for auto-completion... Press ^C to stop.
rror during auto-completion cache update: Access denied; you need (at least one of) the PROCESS privilege(s) for this operation
 MySQL  localhost:33060+ ssl  SQL > show databases ;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| performance_schema |
+--------------------+
 rows in set (0.0012 sec)
 MySQL  localhost:33060+ ssl  SQL > show databases ;
+--------------------+
| Database           |
+--------------------+
| college            |
| information_schema |
| performance_schema |
+--------------------+
 rows in set (0.0013 sec)
 MySQL  localhost:33060+ ssl  SQL > use college ;
efault schema set to `college`.
etching global names, object names from `college` for auto-completion... Press ^C to stop.
rror during auto-completion cache update: Access denied; you need (at least one of) the PROCESS privilege(s) for this operation
 MySQL  localhost:33060+ ssl  college  SQL > show tables ;
+-------------------+
| Tables_in_college |
```
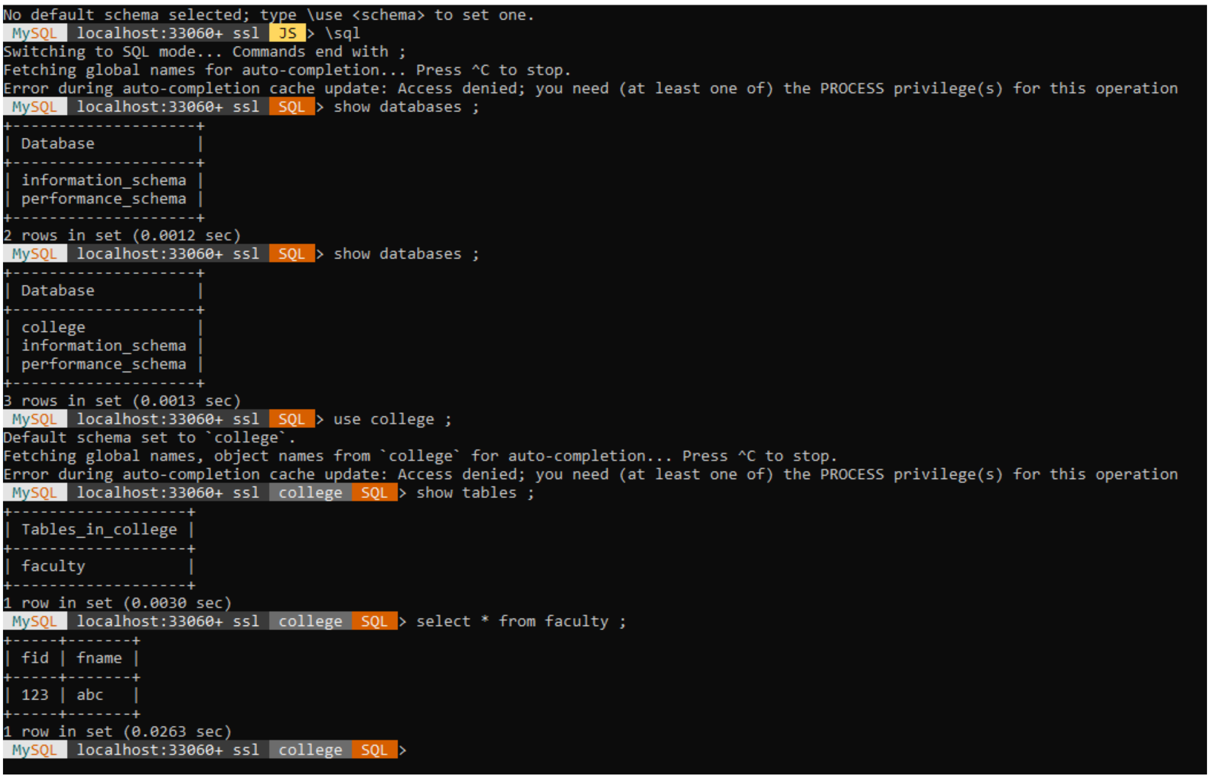

Figure 35: User gautam's authorization in steps. The second show databases command is after grant statement by root.



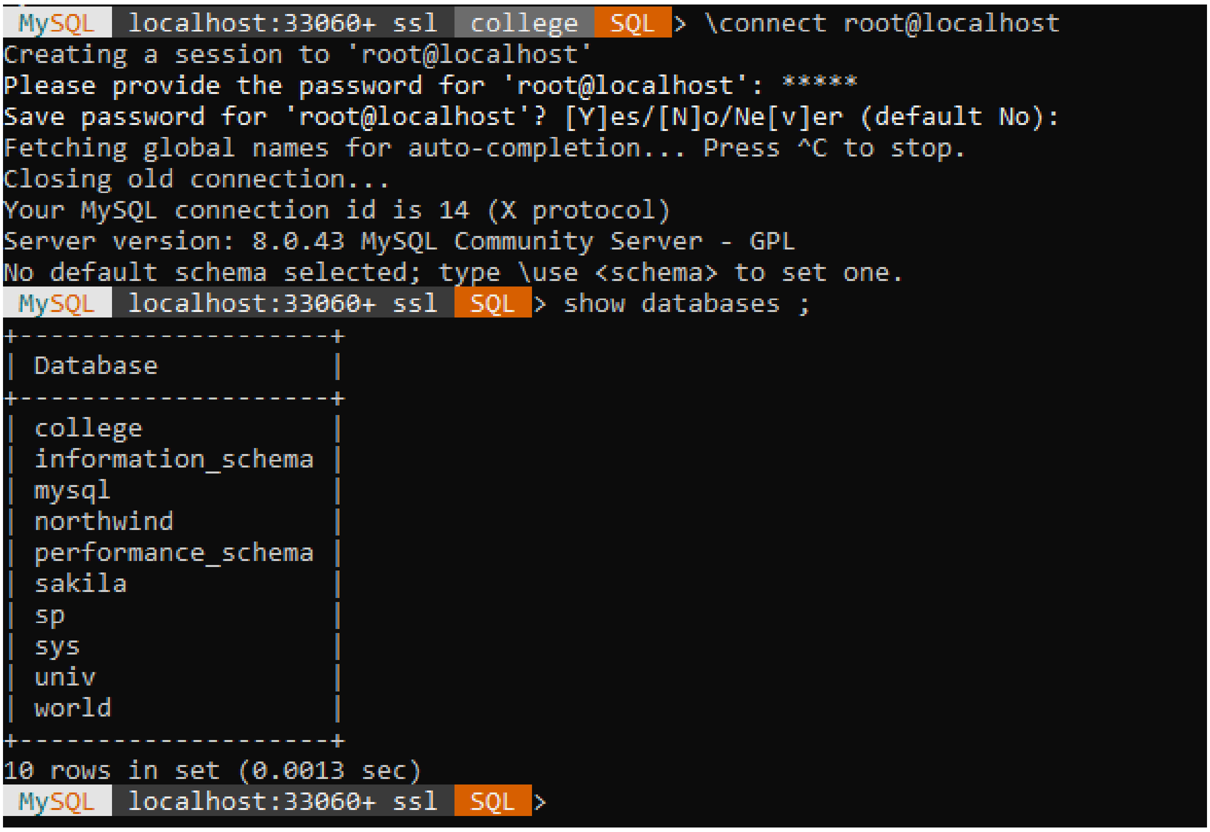
```
No default schema selected; type \use <schema> to set one.
 MySQL  localhost:33060+ ssl  JS > \sql
Switching to SQL mode... Commands end with ;
Fetching global names for auto-completion... Press ^C to stop.
Error during auto-completion cache update: Access denied; you need (at least one of) the PROCESS privilege(s) for this operation
 MySQL  localhost:33060+ ssl  SQL > show databases ;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| performance_schema |
+--------------------+
2 rows in set (0.0012 sec)
 MySQL  localhost:33060+ ssl  SQL > show databases ;
+--------------------+
| Database           |
+--------------------+
| college            |
| information_schema |
| performance_schema |
+--------------------+
3 rows in set (0.0013 sec)
 MySQL  localhost:33060+ ssl  SQL > use college ;
Default schema set to `college`.
Fetching global names, object names from `college` for auto-completion... Press ^C to stop.
Error during auto-completion cache update: Access denied; you need (at least one of) the PROCESS privilege(s) for this operation
 MySQL  localhost:33060+ ssl  college  SQL > show tables ;
+-------------------+
| Tables_in_college |
+-------------------+
| faculty           |
+-------------------+
1 row in set (0.0030 sec)
 MySQL  localhost:33060+ ssl  college  SQL > select * from faculty ;
+-----+-------+
| fid | fname |
+-----+-------+
| 123 | abc   |
+-----+-------+
1 row in set (0.0263 sec)
 MySQL  localhost:33060+ ssl  college  SQL >
```

Figure 36: Affect of grant statement. First show databases is when no grant is issued.

You can also connect to root in mysql shell, as:

```
\connect root@localhost
```

See below

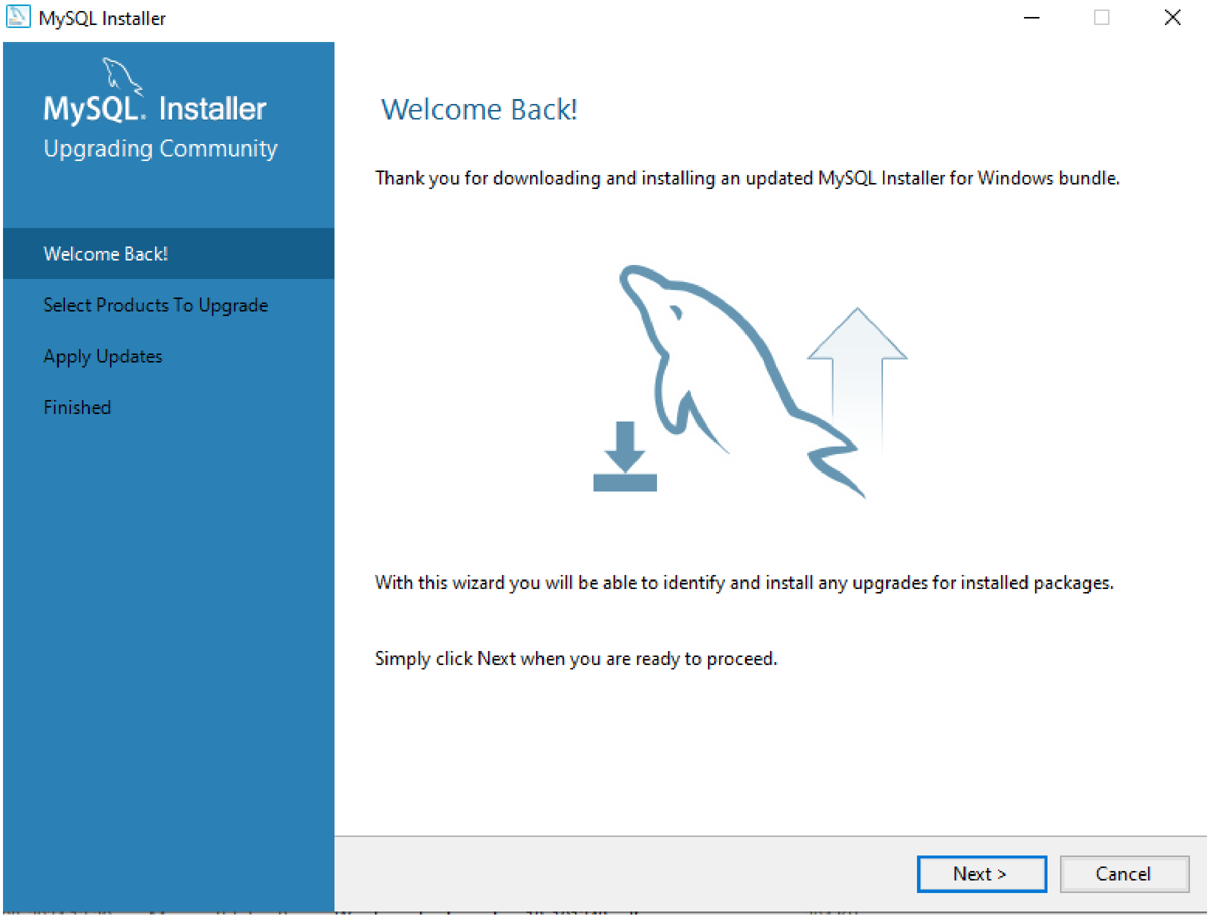


```
 MySQL  localhost:33060+ ssl  college  SQL > \connect root@localhost
Creating a session to 'root@localhost'
Please provide the password for 'root@localhost': *****
Save password for 'root@localhost'? [Y]es/[N]o/Ne[v]er (default No):
Fetching global names for auto-completion... Press ^C to stop.
Closing old connection...
Your MySQL connection id is 14 (X protocol)
Server version: 8.0.43 MySQL Community Server - GPL
No default schema selected; type \use <schema> to set one.
 MySQL  localhost:33060+ ssl  SQL > show databases ;
+--------------------+
| Database           |
+--------------------+
| college            |
| information_schema |
| mysql              |
| northwind          |
| performance_schema |
| sakila             |
| sp                 |
| sys                |
| univ               |
| world              |
+--------------------+
10 rows in set (0.0013 sec)
 MySQL  localhost:33060+ ssl  SQL >
```

Figure 37: Connecting to root in mysql shell using \connect

MySQL Sample Databases

Download MySQL sample databases from here. MySQL Northwind database is here.

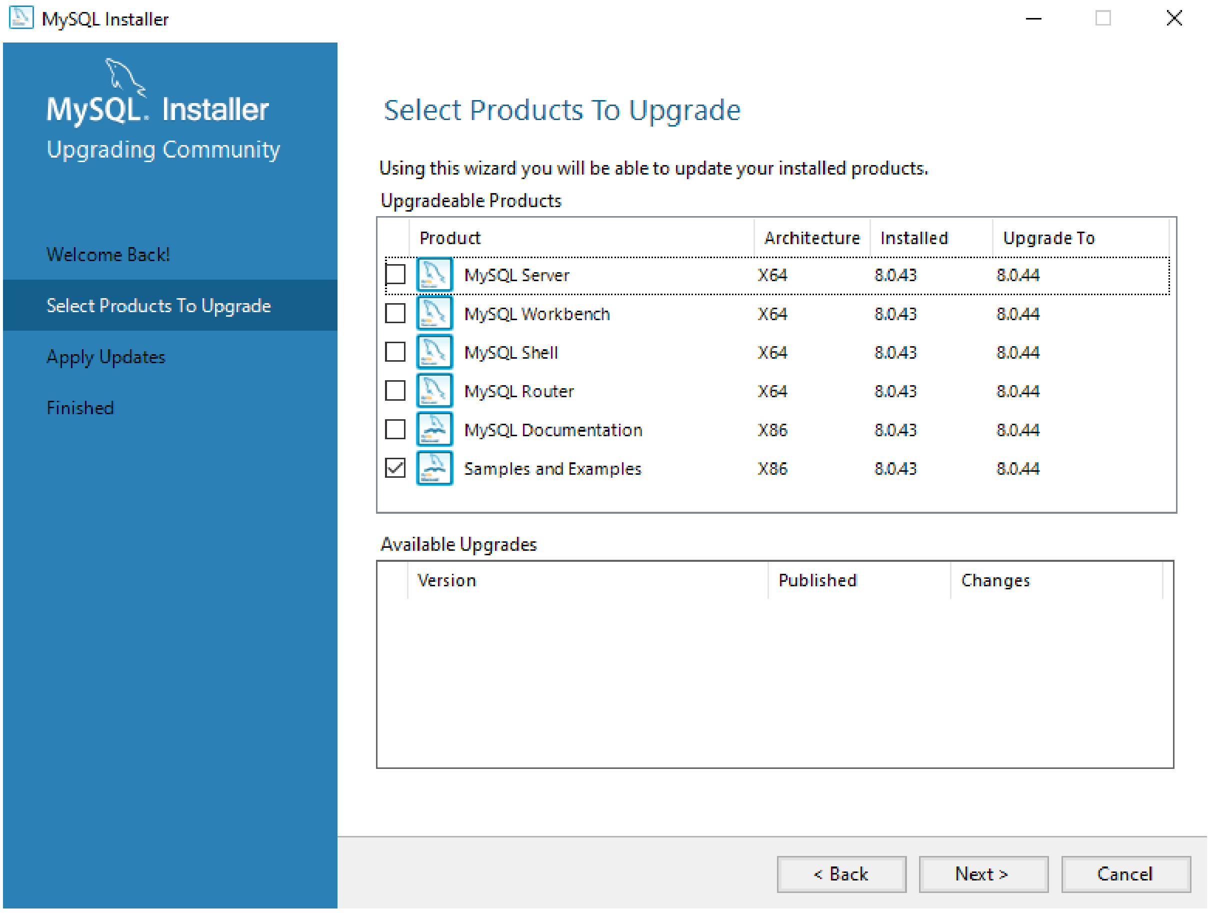


Welcome Back!

Thank you for downloading and installing an updated MySQL Installer for Windows bundle.

With this wizard you will be able to identify and install any upgrades for installed packages.

Simply click Next when you are ready to proceed.



Select Products To Upgrade

Using this wizard you will be able to update your installed products.

Upgradeable Products

	Product	Architecture	Installed	Upgrade To
☐	MySQL Server	X64	8.0.43	8.0.44
☐	MySQL Workbench	X64	8.0.43	8.0.44
☐	MySQL Shell	X64	8.0.43	8.0.44
☐	MySQL Router	X64	8.0.43	8.0.44
☐	MySQL Documentation	X86	8.0.43	8.0.44
☑	Samples and Examples	X86	8.0.43	8.0.44

Available Upgrades

Version	Published	Changes

################# Done #####################