

## MySQL and MySQL Workbench Lab

The goal of this lab is creating a database from an ERD automatically. First, MySQL should be ready and it will be set as follows:

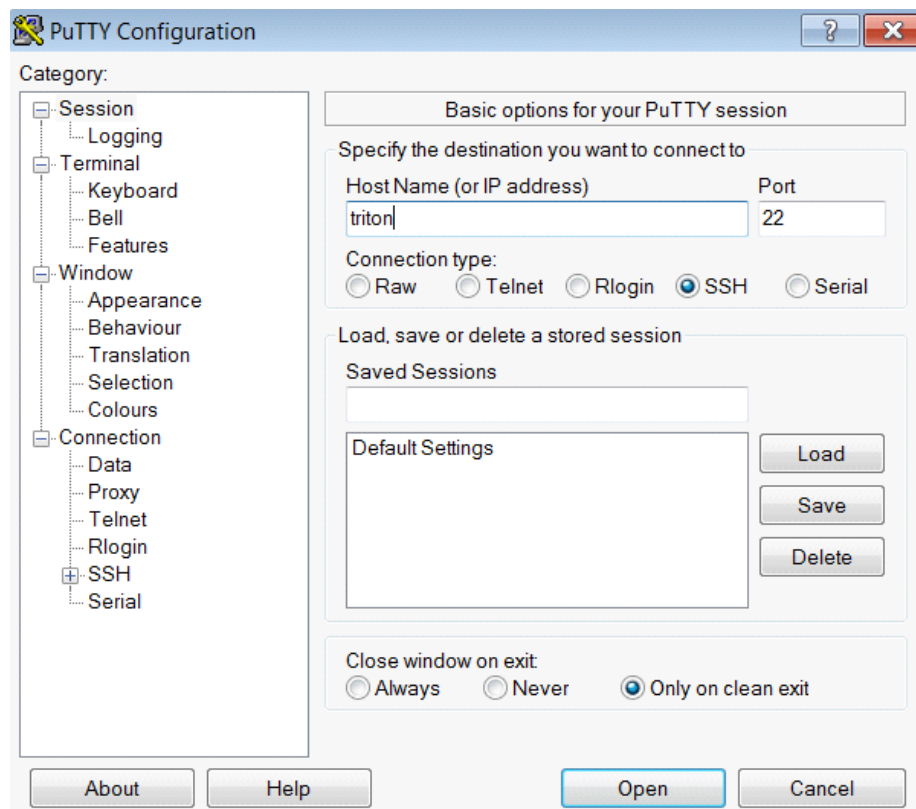
- MySQL preparation

Let's start putty program to connect to the triton server.

(start computer Science pgms ssh putty)

Host name: triton.towson.edu

Connect



You can login to the triton server by using your tiger user name and password.

Mac terminal

[shell](#)

[New remote connection](#)

[ssh -p 22 user-name@triton.towson.edu](#)

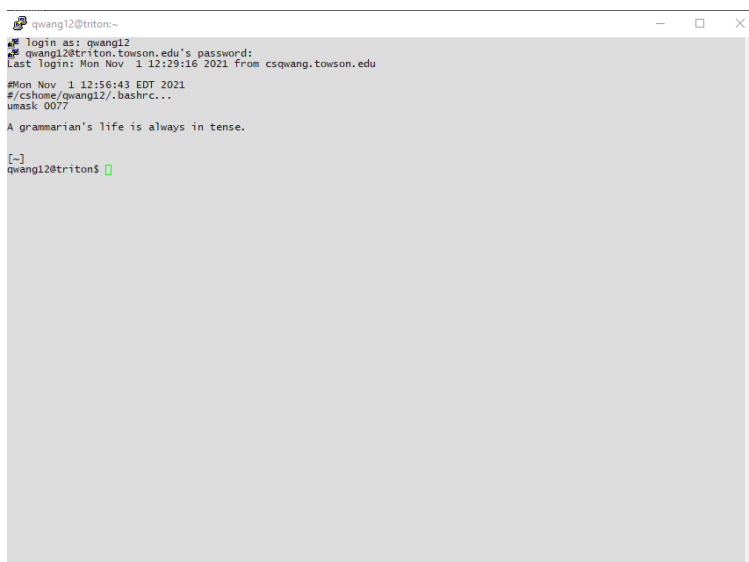
- Check your account status.

If you do not see your login name as a part of the prompt, you need to initialize your account.

(bsh\$>/usr/cis/bin/getbashrc )

Then type following for MySQL setting:

(/usr/cis/bin/getmycnf)

A terminal window titled 'qwang12@triton:~' showing the login process. The text in the terminal is: 'login as: qwang12', 'qwang12@triton.towson.edu's password:', 'Last login: Mon Nov 1 12:29:16 2021 from csqwang.towson.edu', '#Mon Nov 1 12:56:43 EDT 2021', '#/cshome/qwang12/.bashrc...', 'umask 0077', 'A grammarian's life is always in tense.', '[~]', 'qwang12@triton\$'.

```
qwang12@triton:~
login as: qwang12
qwang12@triton.towson.edu's password:
Last login: Mon Nov 1 12:29:16 2021 from csqwang.towson.edu
#Mon Nov 1 12:56:43 EDT 2021
#/cshome/qwang12/.bashrc...
umask 0077
A grammarian's life is always in tense.
[~]
qwang12@triton$
```

- Preparation for MySQL

Please type following code:

/usr/cis/etc/getbashrc

Then type following code:

**qwang12@triton\$** /usr/cis/etc/getmycnf

Note: **qwang12@triton\$** is my prompt.

If you see bsh\$> then please let me know.

If it does not work then do following:

```
cp /usr/cis/bin/getmycnf ${HOME}
```

Then edit getmycnf file. (nano getmycnf)

```
cp /usr/cis/etc/tritondb.cnf ${HOME}/.my.cnf
```

Now, you can run getmycnf script

```
./getmycnf
```

- Start MySQL

```
qwang12@triton$ mysql -u username -p
```

insert the MySQL password (that is distributed at beginning of this class).

If everything is o.k. then you will see **MySQL>** prompt.

- Create a database

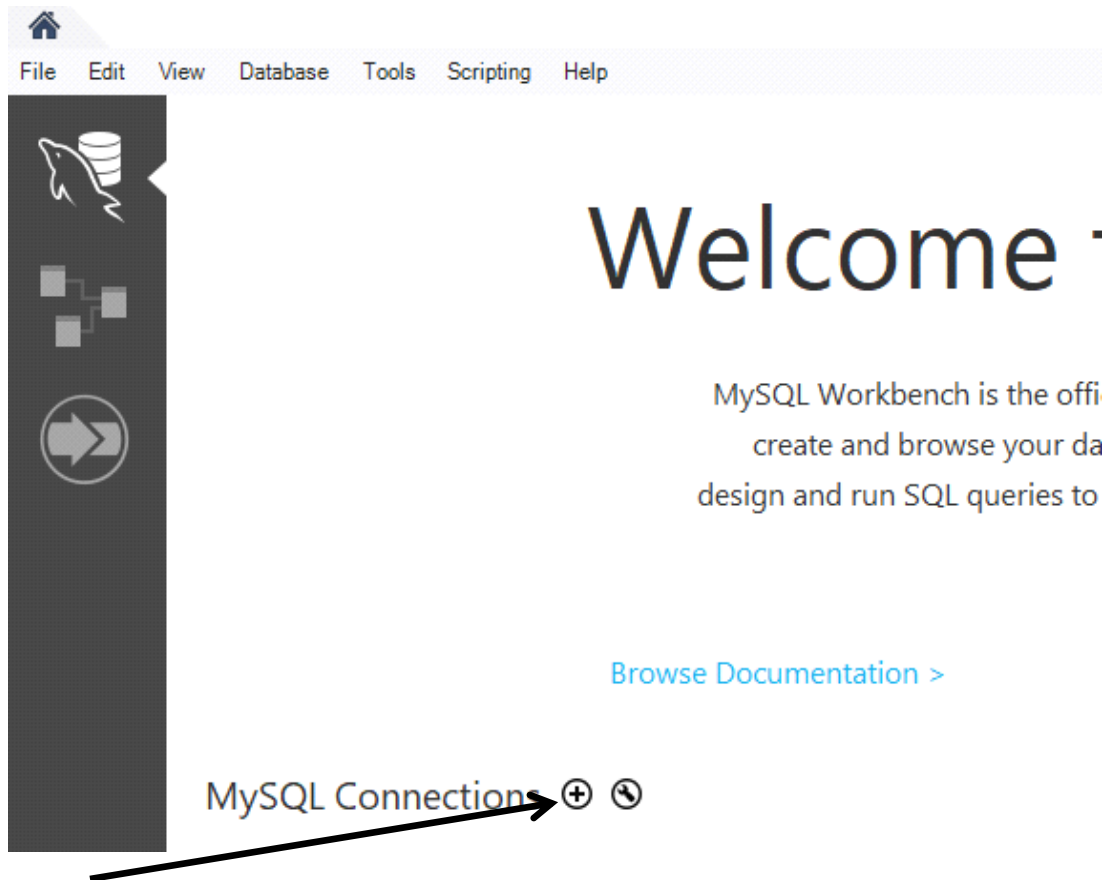
```
MySQL> create database databaseName; //you can find this databaseName in the distributed slip.
```

```
use databaseName;
```

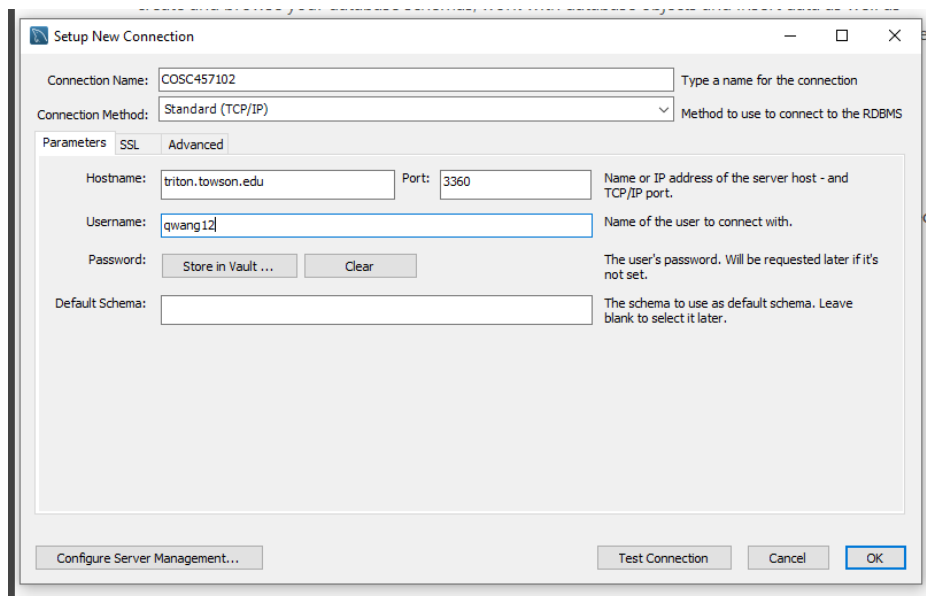
Now, let's start MySQL work bench.

- Open MySQL Work bench

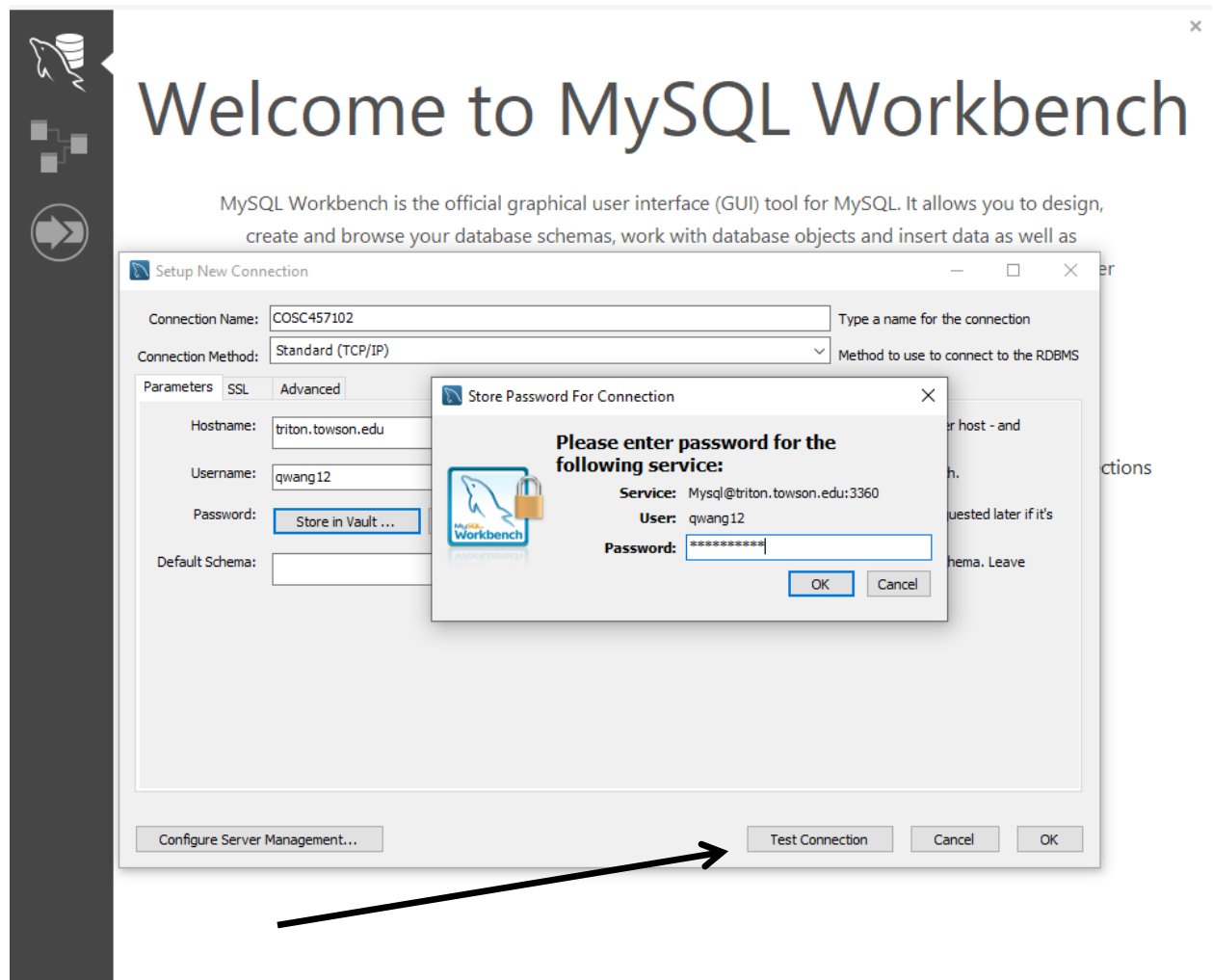
- Create a new connection (please press the + symbol)



Press this button.



Fill the boxes and put your Database password to the “Store in Vault”



Connection Name: *connection-name* (You can name this connection.)

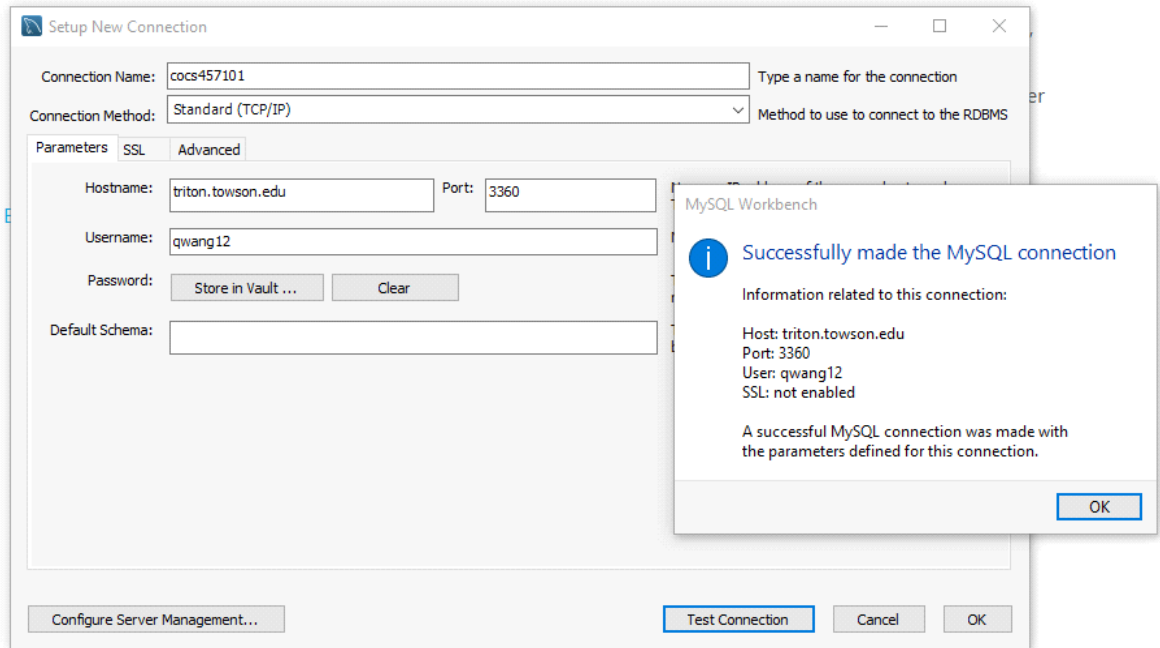
Host name: triton.towson.edu

Port: 3360

User name: *user name*

Password: *password* (Database Password)

- Store your password in a vault.

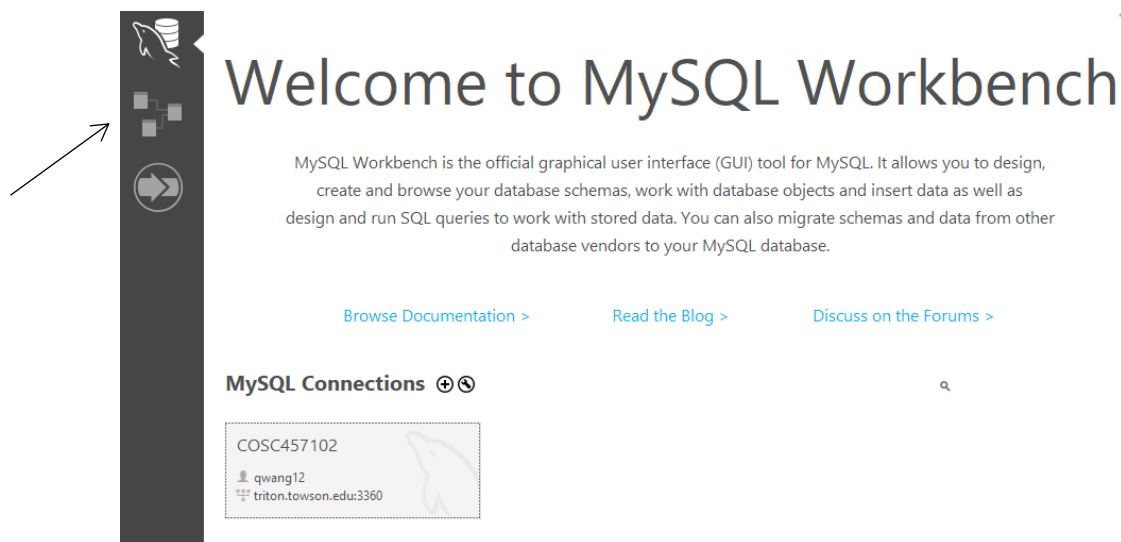


8.2 Test Connection (if it says o.k. then precede to ok)

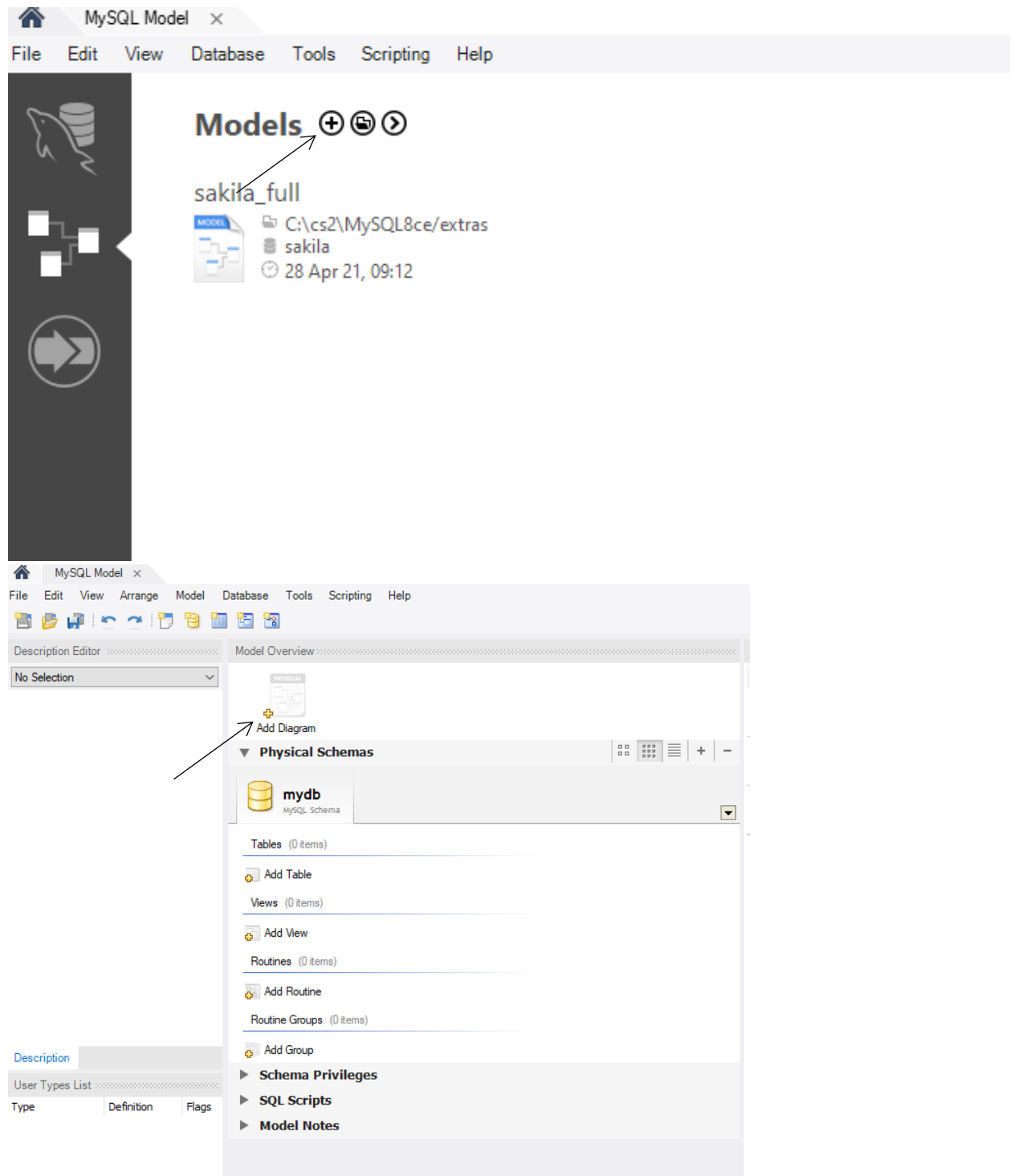
- Design an EERD

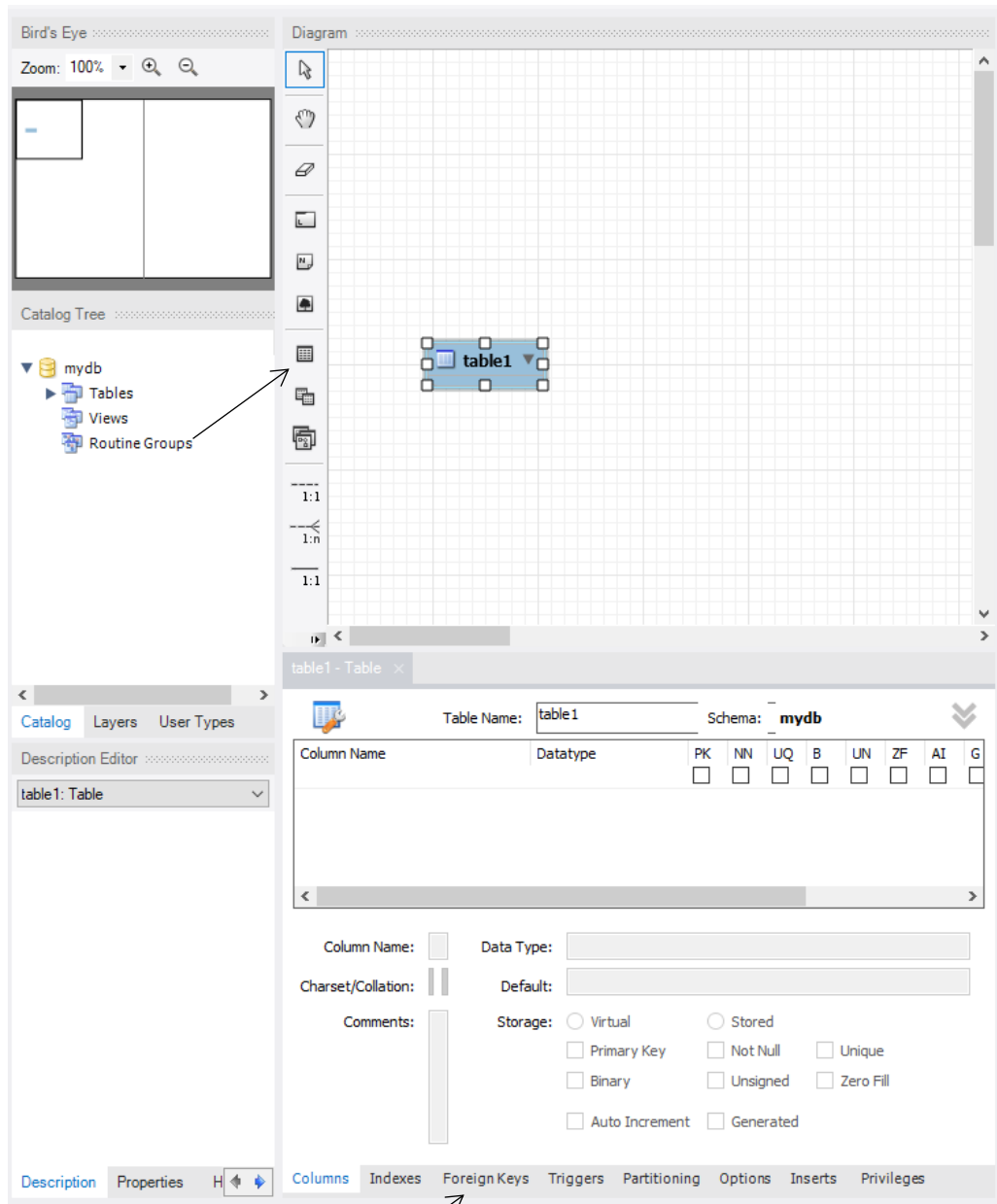
Please start an EERD with an existing database.

Press the “ERD symbol “ and then “Create EER model from a database”.



Then you will see a design screen. Using click and click (no dragging), create a table. Double click the table. Then insert attributes with type and length. Set up a primary key.





- Setup a foreign key

Using the foreign key tab (lower part of the screen) set up the foreign key.

Branch			
branchNo	street	city	postcode
B002	56 Clover Dr	London	NW10 6EU
B003	163 Main St	Glasgow	G11 9QX
B004	32 Manse Rd	Bristol	BS99 1NZ
B005	22 Deer Rd	London	SW1 4EH

B007	16 Argyll St	Aberdeen	AB2 3SU
------	--------------	----------	---------

Staff							
staffNo	fName	lName	position	sex	DOB	salary	branchNO
SA9	Mary	Howe	Assistant	F	2/19/1970	9000	B007
SG14	David	Ford	Supervisor	M	3/24/1958	18000	B003
SG37	Ann	Beech	Assistant	F	11/10/1960	12000	B003
SG5	Susan	Brand	Manager	F	6/3/1940	24000	B003
SL21	John	White	Manager	M	10/1/1945	30000	B005
SL41	Julie	Lee	Assistant	F	6/13/1965	9000	B005

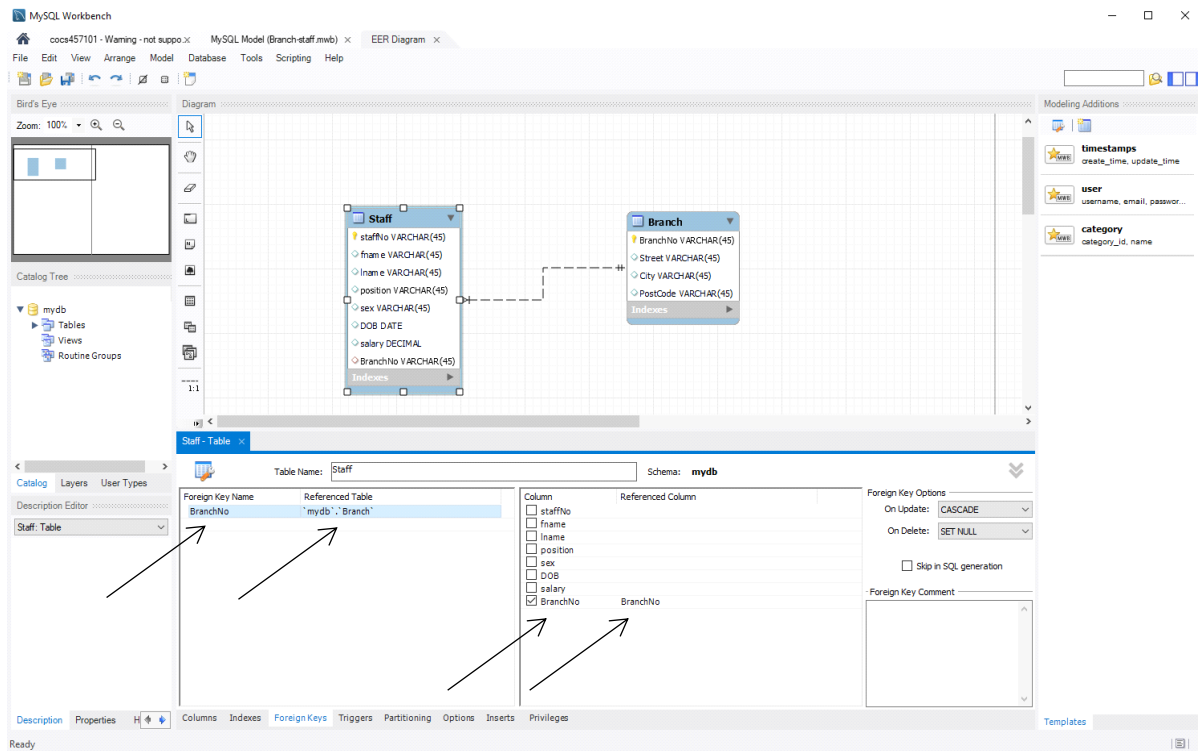
Select Staff entity. Then select the foreign key tab.

The screenshot shows a database management interface with a 'Diagram' tab. It displays two tables: 'Staff' and 'Branch'. The 'Staff' table has columns: staffNo (VARCHAR(45), PK), fName (VARCHAR(45)), lName (VARCHAR(45)), position (VARCHAR(45)), sex (VARCHAR(45)), DOB (DATE), salary (DECIMAL), and BranchNo (VARCHAR(45), FK). The 'Branch' table has columns: BranchNo (VARCHAR(45), PK), Street (VARCHAR(45)), City (VARCHAR(45)), and PostCode (VARCHAR(45)). A foreign key relationship is shown between the 'BranchNo' column in the 'Staff' table and the 'BranchNo' column in the 'Branch' table, with a 1:n cardinality.

Below the diagram, the 'Staff - Table' tab is selected, showing the table structure for 'Staff' in the 'mydb' schema. The columns are listed with their data types, primary key status, and other attributes.

Column Name	Datatype	PK	NN	UQ	B	UN	ZF	AI	G	Default/Expression
staffNo	VARCHAR(45)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
fName	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
lName	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
position	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
sex	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

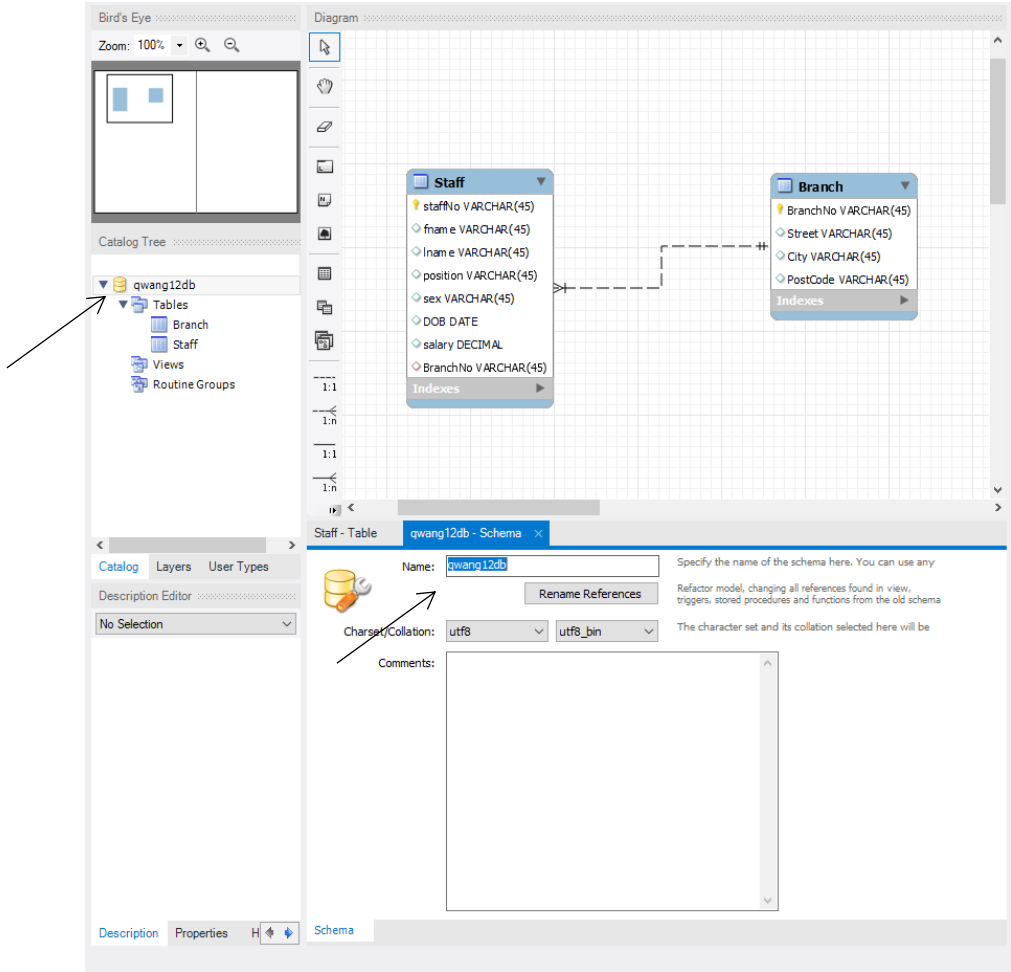
The 'Columns' tab is selected, showing the column details for 'staffNo'. The 'Data Type' is 'VARCHAR(45)'. The 'Storage' options are 'Virtual' and 'Stored'. The 'Primary Key' checkbox is checked. The 'Not Null' checkbox is checked. The 'Unique' checkbox is checked. The 'Binary' checkbox is unchecked. The 'Unsigned' checkbox is unchecked. The 'Zero Fill' checkbox is unchecked. The 'Auto Increment' checkbox is unchecked. The 'Generated' checkbox is unchecked.

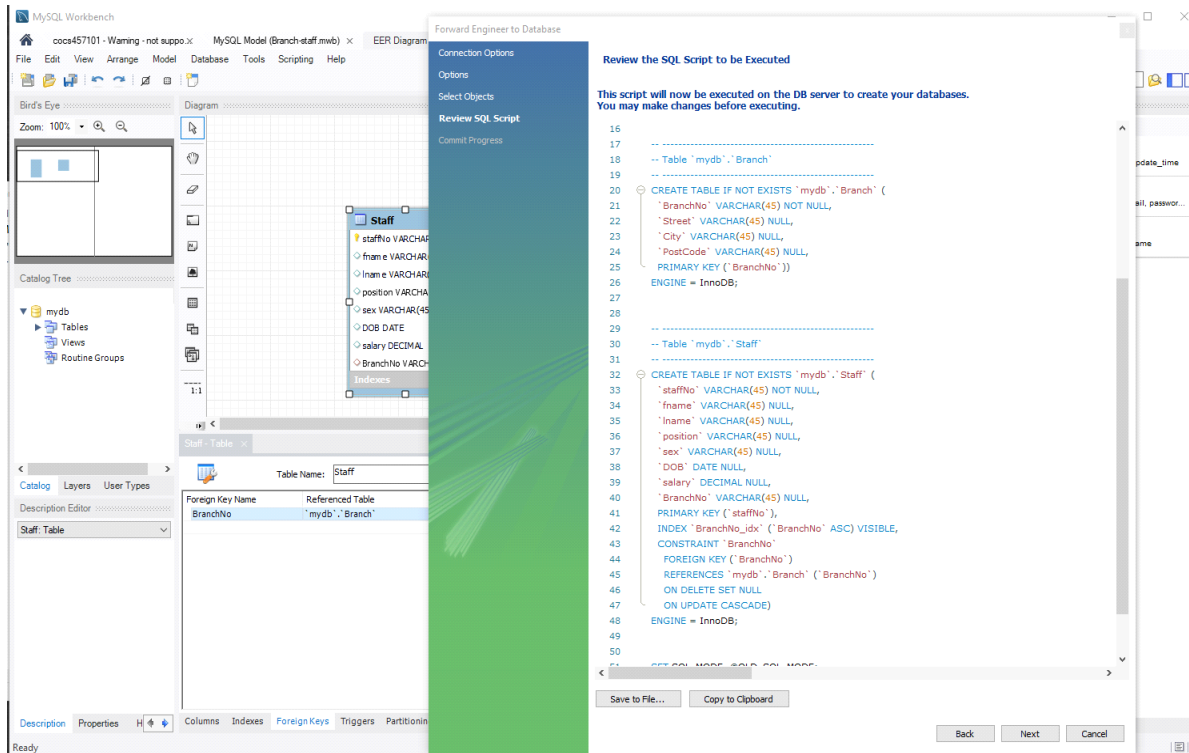
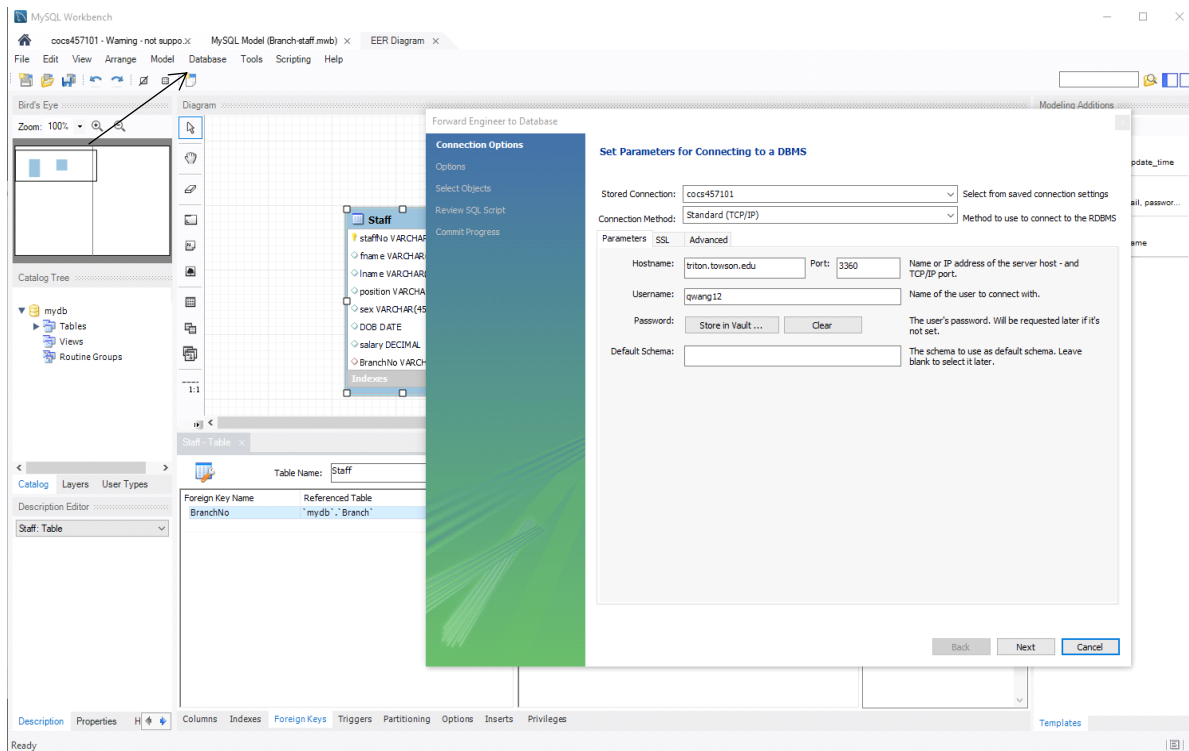


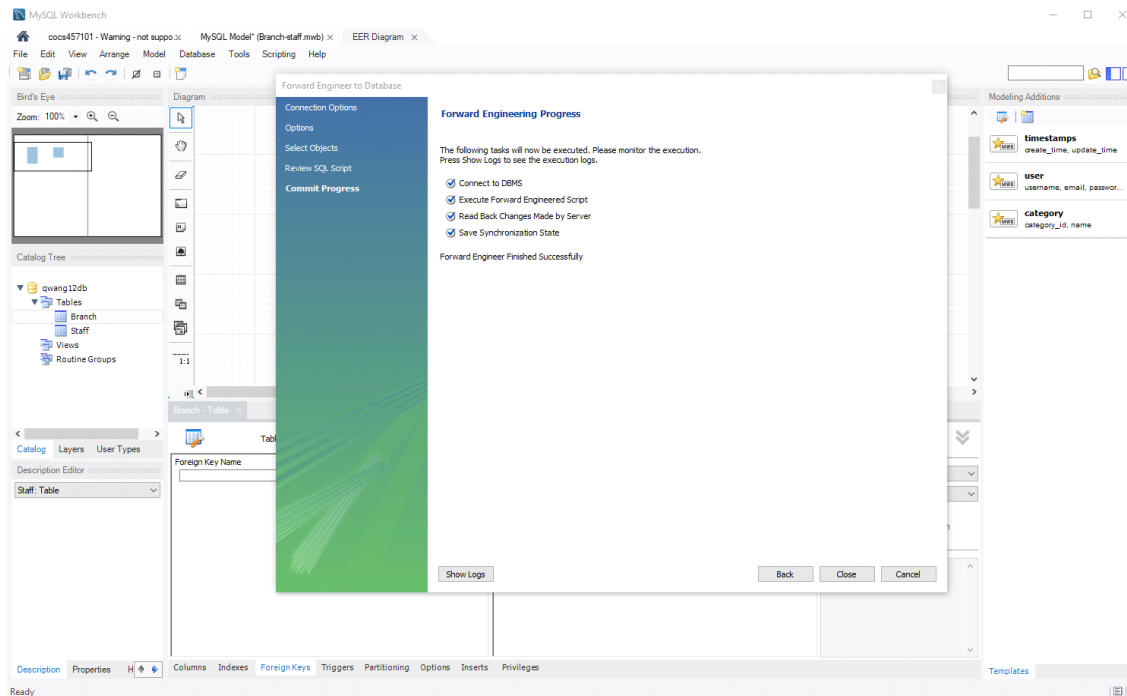
- Synchronize Database: forward engineering (create tables from an ERD), reverse engineering (Create an ERD from the database tables), and synchronize model (create or update ERD and create tables from an ERD at the same time)

Database Forward engineering

(Follow the wizard)







- Check out the tables in MySQL (Putty)

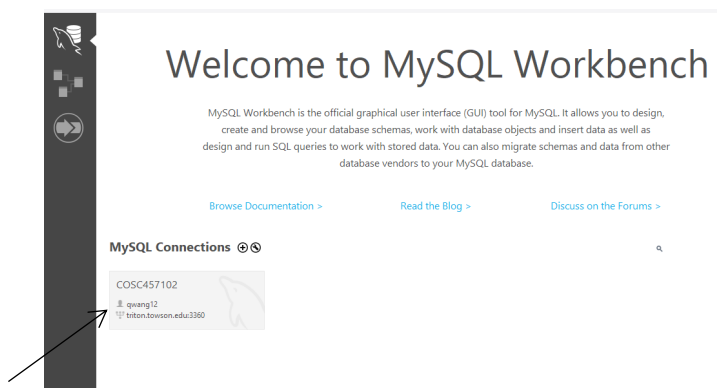
If the automatic process is successful then you will see the tables that are created in Workbench.

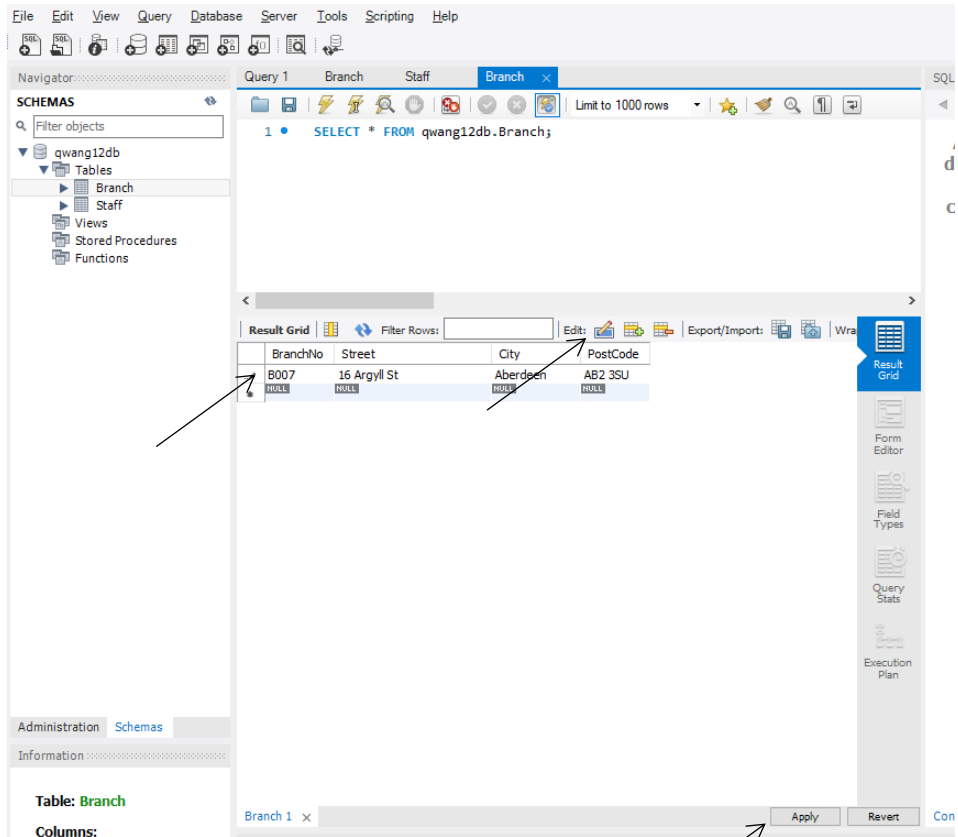
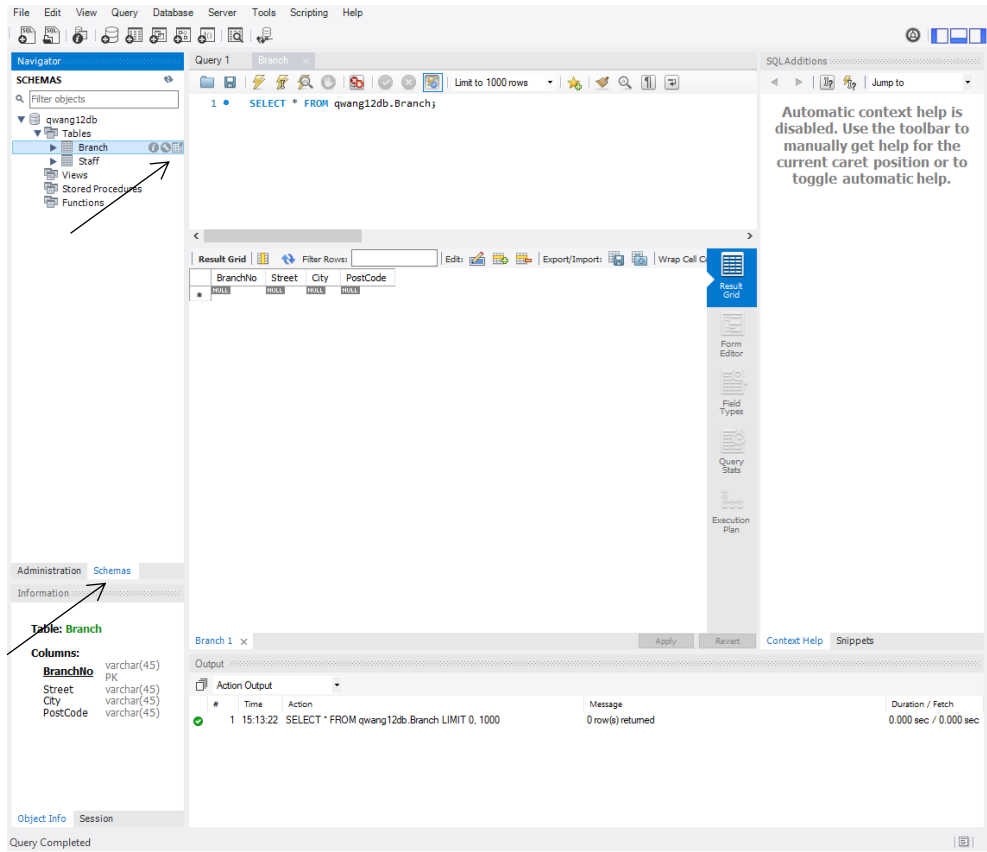
MySQL>use *database\_nme*

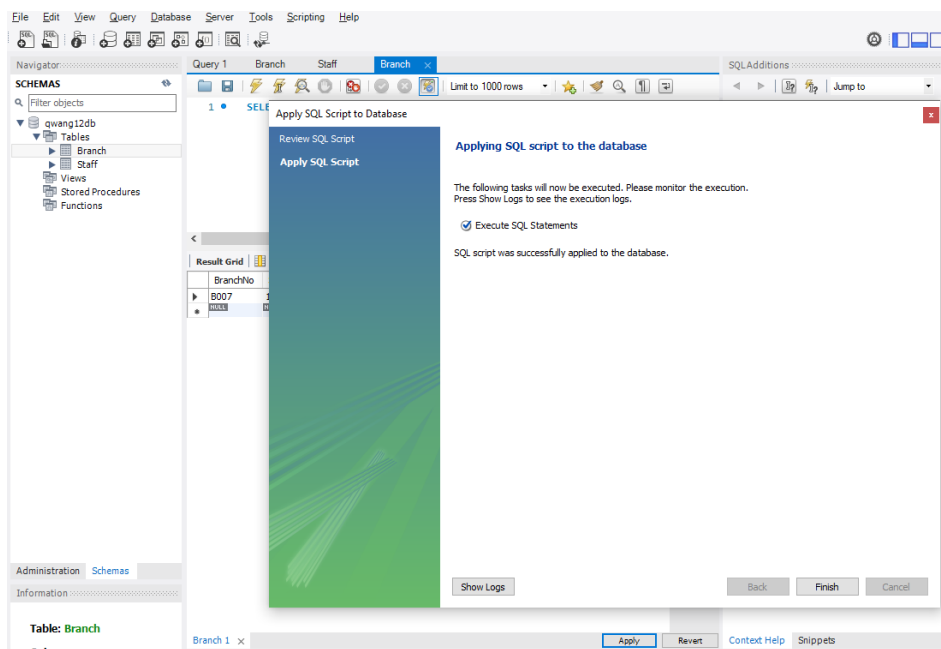
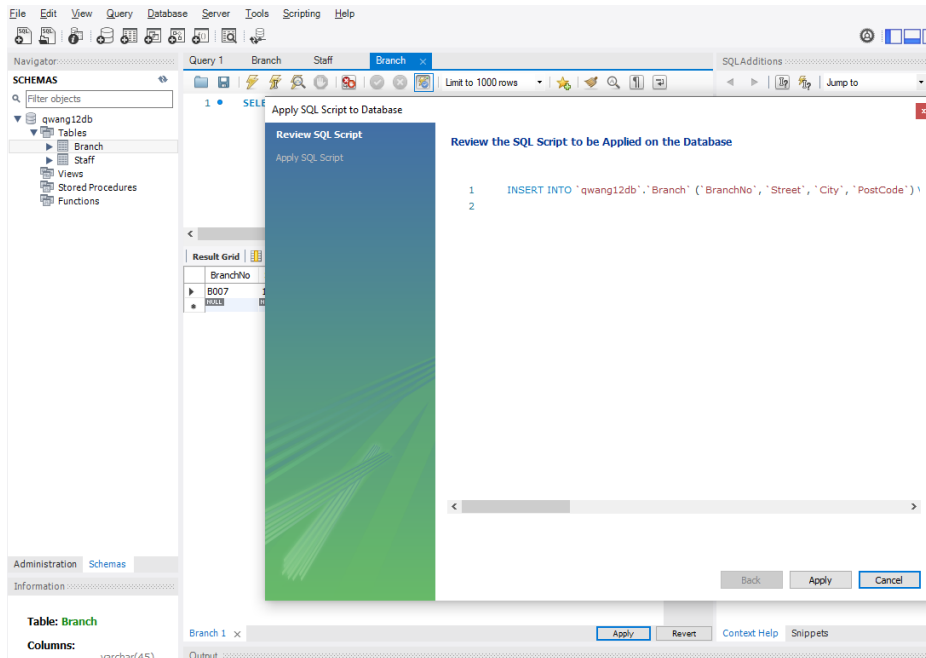
MySQL>show tables;

- Data Input (Please do not insert data from your EERD design. It does not save the entries)

Database Connect database, (right click the table in left side table tree), Select rows edit (when you finish entering data), click 'apply' in the right bottom







- Query Database

Database connect database

Connect to the database. Then you will see the query editor.

Check out the content of the tables.

File Edit View Query Database Server Tools Scripting Help

Navigator: Query 1 Branch Staff Branch Branch

SCHEMAS

Filter objects

qwang12db

Tables

Branch

Staff

Views

Stored Procedures

Functions

1 SELECT \* FROM qwang12db.Branch;

Limit to 1000 rows

Result Grid

BranchNo	Street	City	PostCode
B007	16 Argyll St	Aberdeen	AB2 3SU
NULL	NULL	NULL	NULL

Form Editor

Field Types

Query Stats

Execution Plan

Administration Schemas

Information

Table: Branch

Columns:

Branch 1 x Apply Revert Co