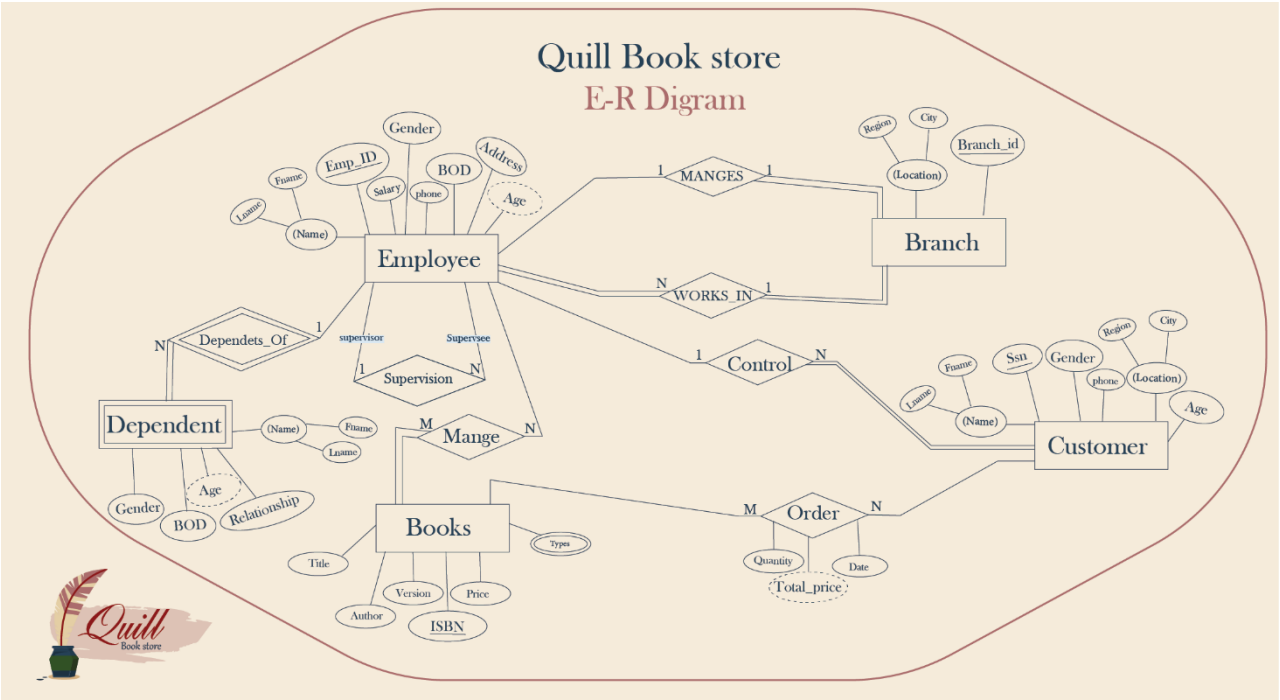
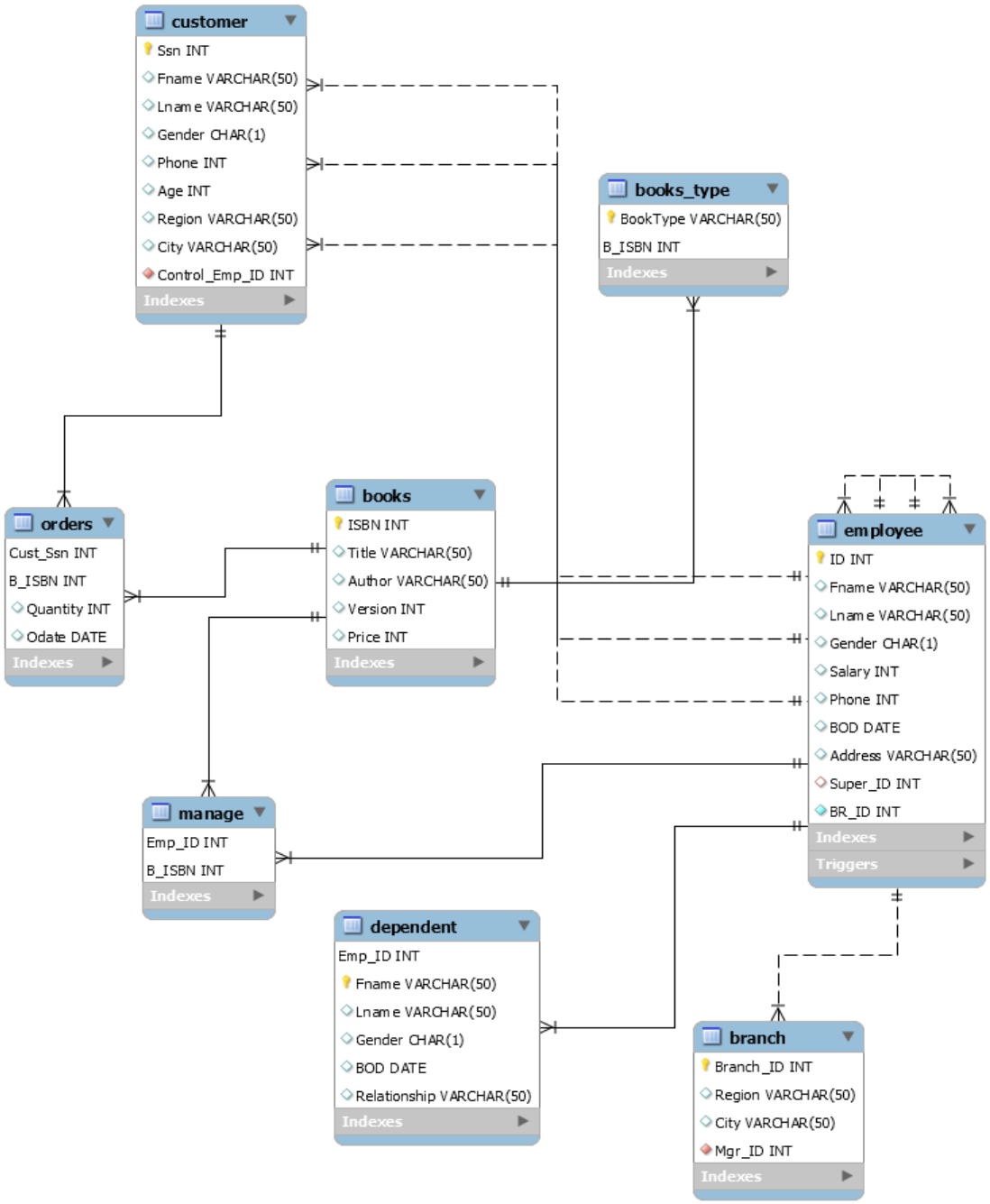

Quill
Book store

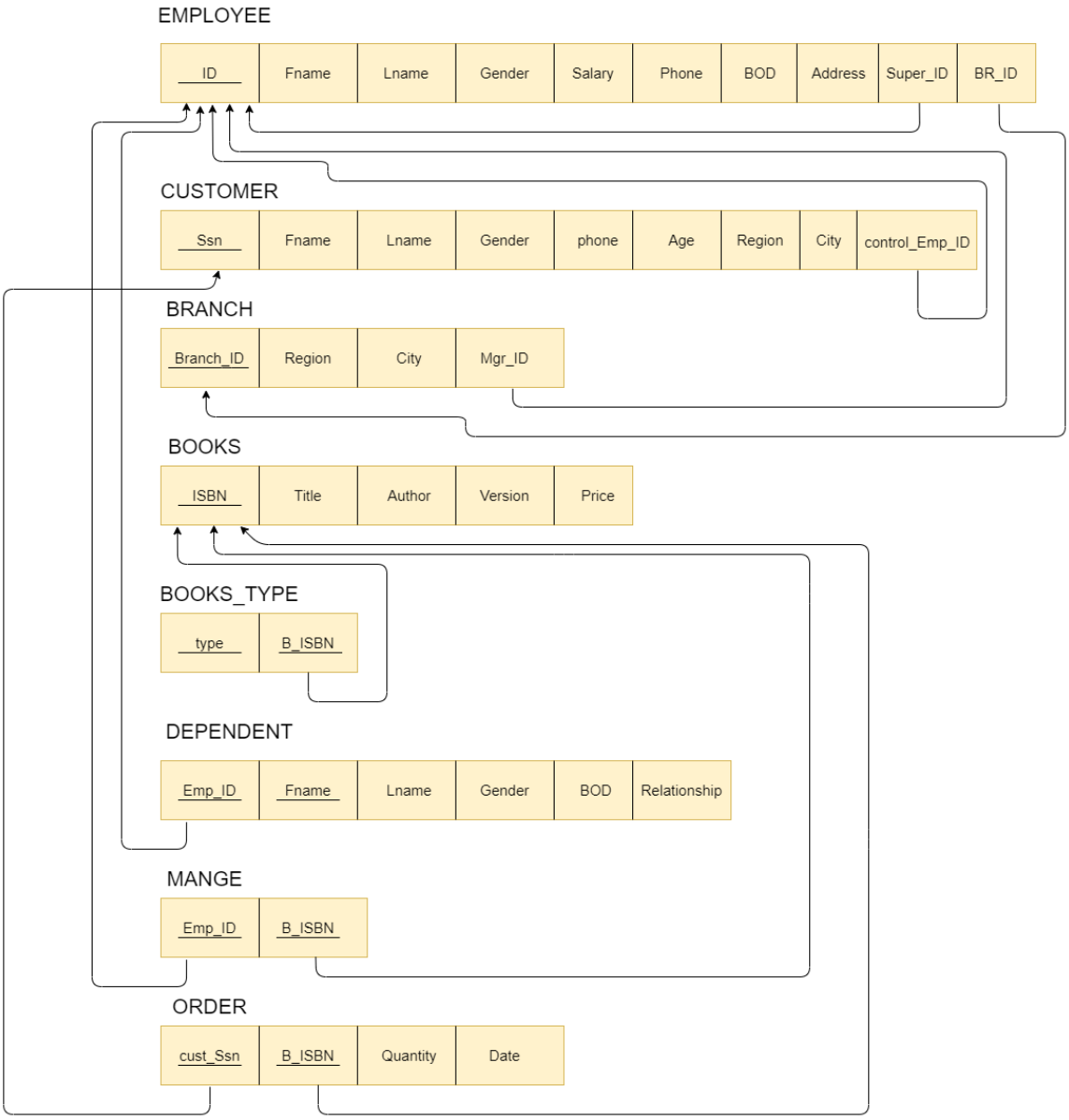
1. ER Diagram:


Quill Book store
E-R Digram
Gender
Emp_ID
Address
BOD
Fname
Salary
phone
Age
Lname
(Name)
Employee
1
MANGES
1
Region
City
Branch_id
(Location)
Branch
N
WORKS_IN
1
N
Dependets_Of
1
supervisor
Supervsee
1
Supervision
N
1
Control
N
Fname
Ssn
Gender
Region
City
Lname
phone
(Location)
(Name)
Age
Customer
Dependent
(Name)
Fname
Lname
M
Mange
N
Gender
Age
BOD
Relationship
Books
Types
Title
Version
Price
Author
ISBN
M
Order
N
Quantity
Date
Total_price

2-DATABASE DIAGRAM:



3-DATABASE SCHEMA:



4-Tables with full specification of data types for all fields, constrains and keys:

1. **Books Table:**

   (ISBN (int,PK), Title, Author, Version, Price)

2. **Employees Table:**

   (ID (int,PK), Fname, Lname, Gender, Salary, Phone, BOD, Address, Super_ID, BR_ID)

3. **Customer Table:**
   (Ssn(int,PK), Fname, Lname, Gender, Phone, Age, Region, City, Control_Emp_ID)

4. **Orders Table:**
   (Cust_Ssn(int,PK), B_ISBN(int,PK), Quantity, Odate)

5. **Book Types Table:**
   (BookType(int,PK), B_ISBN(int,PK))

6. **Dependent table:**
   (Emp_ID(int,PK), Fname, Lname, Gender, BOD, Relationship)

7. **Branch Table:**
   (Branch_ID(int,PK), Region, City, Mgr_ID)

8. **Mange table:**

   (Emp_ID(int,PK), B_ISBN(int,PK))

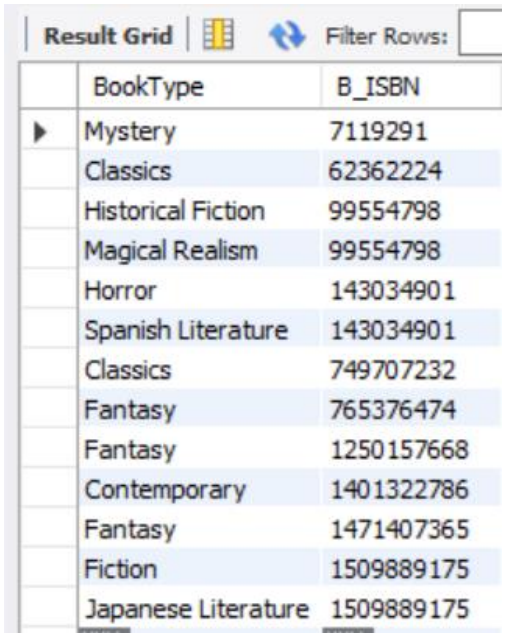
5-Fill Tables with records:

Book table:

Result Grid | Filter Rows: | Edit: | Export/Import:

ISBN	Title	Author	Version	Price
7119291	The ABC Murders	Agatha Christie	13	66
62362224	Peter Pan	J.M. Barrie	1	33
99554798	The Night Circus	Erin Morgenstern	1	30
143034901	The Shadow of the Wind	Carlos Ruiz Zafón	1	20
749707232	The Little Prince	Antoine de Saint-Exupéry	1	40
765376474	A Gathering of Shadows	V.E. Schwab	2	60
1250157668	Finale	Stephanie Garber	3	45
1401322786	The Time Keeper	Mitch Albom	1	50
1471407365	The Wicked King	Holly Black	2	100
1509889175	If Cats Disappeared from the World	Genki Kawamura	1	99
NULL	NULL	NULL	NULL	NULL

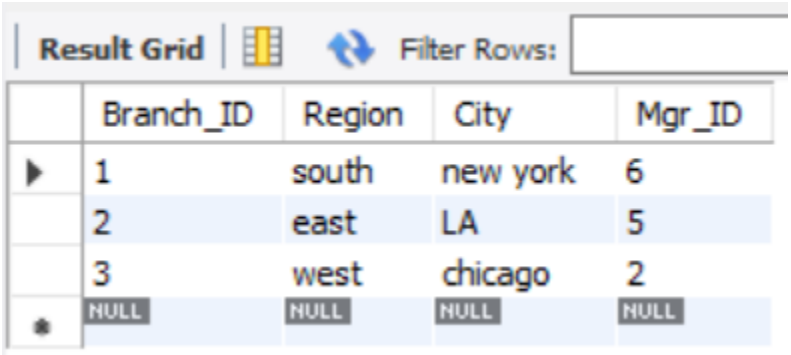
Book_type table:



Result Grid | Filter Rows:

BookType	B_ISBN
Mystery	7119291
Classics	62362224
Historical Fiction	99554798
Magical Realism	99554798
Horror	143034901
Spanish Literature	143034901
Classics	749707232
Fantasy	765376474
Fantasy	1250157668
Contemporary	1401322786
Fantasy	1471407365
Fiction	1509889175
Japanese Literature	1509889175

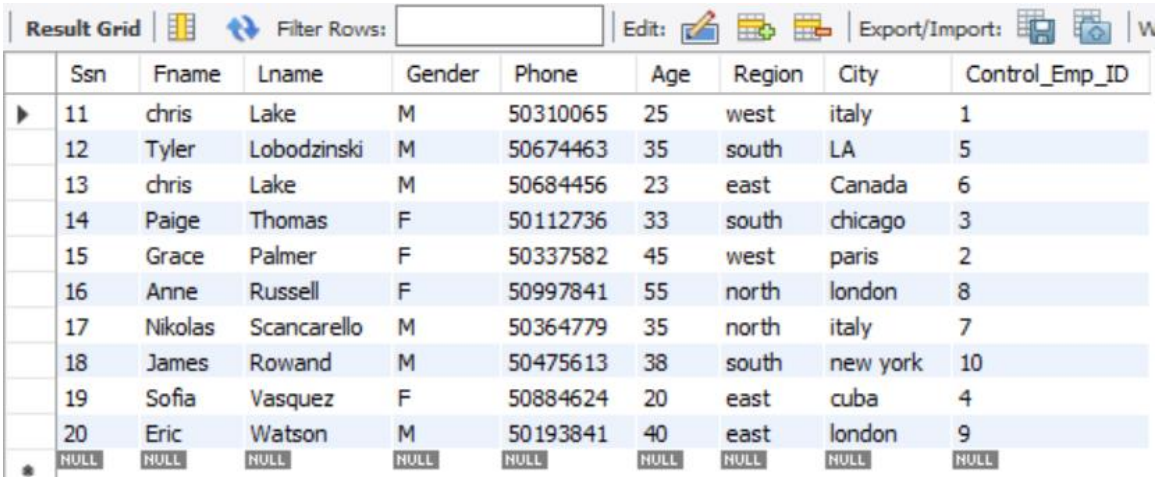
Branch table:



Result Grid | Filter Rows:

Branch_ID	Region	City	Mgr_ID
1	south	new york	6
2	east	LA	5
3	west	chicago	2
NULL	NULL	NULL	NULL

Customer table:



Result Grid | Filter Rows: | Edit: | Export/Import:

Ssn	Fname	Lname	Gender	Phone	Age	Region	City	Control_Emp_ID
11	chris	Lake	M	50310065	25	west	italy	1
12	Tyler	Lobodzinski	M	50674463	35	south	LA	5
13	chris	Lake	M	50684456	23	east	Canada	6
14	Paige	Thomas	F	50112736	33	south	chicago	3
15	Grace	Palmer	F	50337582	45	west	paris	2
16	Anne	Russell	F	50997841	55	north	london	8
17	Nikolas	Scancarello	M	50364779	35	north	italy	7
18	James	Rowand	M	50475613	38	south	new york	10
19	Sofia	Vasquez	F	50884624	20	east	cuba	4
20	Eric	Watson	M	50193841	40	east	london	9
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Dependent table:

Result Grid | Filter Rows: | Edit: | Exp

Emp_ID	Fname	Lname	Gender	BOD	Relationship
1	Amanda	Alexander	F	1955-05-03	sister
2	Zoey	Lake	F	1955-05-03	daughter
3	Richard	Abbatiello	M	1955-05-03	brother
4	Christopher	Bullerman	M	1955-05-03	son
5	Ryan	Baker	M	1955-05-03	son
6	William	Barnes	M	1955-05-03	Son
7	Rachel	Adam	F	1955-05-03	daughter
8	Ashley	Hope	F	1955-05-03	daughter
9	Caleb	Kalani	M	1955-05-03	brother
10	Isabella	Hunter	F	1955-05-03	sister
NULL	NULL	NULL	NULL	NULL	NULL

Employee table:

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Conte

ID	Fname	Lname	Gender	Salary	Phone	BOD	Address	Super_ID	BR_ID
1	Daniel	Alexander	M	12000000	50455993	1979-11-28	LA	1	11
2	chris	Lake	M	75000000	50310065	1979-05-05	LA	1	20
3	Nicole	Abbatiello	F	32000000	50785922	1982-06-12	LA	2	12
4	Elizabeth	Bullerman	F	50000000	50356763	1980-07-02	new york	3	13
5	Jacob	Baker	M	12000000	50682993	1983-11-11	chicago	4	14
6	Andrew	Barnes	M	15000000	50583759	1979-04-13	japan	5	15
7	June	Adam	F	20000000	50274655	1985-07-28	french	6	16
8	Michael	Hope	F	45000000	50733461	1958-03-22	LA	7	17
9	Isabell	Kalani	F	14000000	50667378	1945-01-04	new york	8	18
10	Noah	Hunter	M	34000000	50174660	1985-09-03	cuba	9	19
12	ASMA	alhajri	F	32000000	50785922	2000-03-07	LA	2	12

Mange table:

Result Grid | Filter R

Emp_ID	B_ISBN
7	7119291
10	62362224
1	99554798
3	143034901
2	749707232
8	765376474
9	1250157668
5	1401322786
4	1471407365
6	1509889175

Order table:

Result Grid | Filter Rows:

Cust_Ssn	B_ISBN	Quantity	Odate
11	143034901	1	2021-04-01
12	99554798	1	2021-04-02
13	749707232	1	2021-04-15
14	62362224	1	2021-04-02
14	765376474	1	2021-02-17
15	1250157668	1	2021-04-02
16	7119291	1	2021-03-01
17	1509889175	1	2021-01-25
18	1401322786	1	2021-03-25
19	7119291	1	2021-03-06
NULL	NULL	NULL	NULL

6-Write all SQL Queries required in your system to achieve all requirements (screenshot the result for each query):

- ## DML Language

1. insert:

```
262 •  Insert into Books(  ISBN,Title,Author, Version, Price)
263    Values (16485616, ' The Brain :The story of you ' ,' David Eagleman',1,30);
264
```

Result Grid | Filter Rows: | Edit: | Export/Import:

ISBN	Title	Author	Version	Price
7119291	The ABC Murders	Agatha Christie	13	66
16485616	The Brain :The story of you	David Eagleman	1	30
62362224	Peter Pan	J.M. Barrie	1	33
99554798	The Night Circus	Erin Morgenstern	1	30
143034901	The Shadow of the Wind	Carlos Ruiz Zafón	1	20

books 1 ×

2. Delete:

```
264
265 •  Delete from  Books where ISBN= 16485616  ;
266
```

Result Grid | Filter Rows: | Edit: | Export/Import:

ISBN	Title	Author	Version	Price
7119291	The ABC Murders	Agatha Christie	13	66
62362224	Peter Pan	J.M. Barrie	1	33
99554798	The Night Circus	Erin Morgenstern	1	30
143034901	The Shadow of the Wind	Carlos Ruiz Zafón	1	20
749707232	The Little Prince	Antoine de Saint-Exupéry	1	40
765376474	A Gathering of Shadows	V.E. Schwab	2	60
1250157668	Finale	Stephanie Garber	3	45
1401322786	The Time Keeper	Mitch Albom	1	50
1471407365	The Wicked King	Holly Black	2	100

books 1 ×

3. Update:

```
14
15 •    Update Employee
16      Set salary=5500000
17      Where ID=003;
18
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

ID	Fname	Lname	Gender	Salary	Phone	BOD	Address	Super_ID	BR_ID
1	Daniel	Alexander	M	12000000	50455993	1979-11-28	LA	1	11
2	chris	Lake	M	75000000	50310065	1979-05-05	LA	1	20
3	Nicole	Abbatiello	F	5500000	50785922	1982-06-12	LA	2	12
4	Elizabeth	Bullerman	F	50000000	50356763	1980-07-02	new york	3	13
5	Jacob	Baker	M	12000000	50682993	1983-11-11	chicago	4	14
6	Andrew	Barnes	M	15000000	50583759	1979-04-13	japan	5	15
7	June	Adam	F	20000000	50274655	1985-07-28	french	6	16
8	Michael	Hope	F	45000000	50733461	1958-03-22	LA	7	17
9	Isabell	Kalani	F	14000000	50667378	1945-01-04	new york	8	18
10	Noah	Hunter	M	34000000	50174660	1985-09-03	cuba	9	19
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

- **SIMPLE QUERY**

4. Between:

```
7 •    Select *
8      From Employee
9       Where   Salary between   12000000 and  15000000;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

ID	Fname	Lname	Gender	Salary	Phone	BOD	Address	Super_ID	BR_ID
1	Daniel	Alexander	M	12000000	50455993	1979-11-28	LA	1	11
5	Jacob	Baker	M	12000000	50682993	1983-11-11	chicago	4	14
6	Andrew	Barnes	M	15000000	50583759	1979-04-13	japan	5	15
9	Isabell	Kalani	F	14000000	50667378	1945-01-04	new york	8	18
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

5. Order By:

```
10
11 •  Select *
12    From Customer
13    Order by Fname ASC;
14
15
```

Result Grid | Filter Rows: | Edit: | Export/Import:

Ssn	Fname	Lname	Gender	Phone	Age	Region	City	Control_Emp_ID
16	Anne	Russell	F	50997841	55	north	london	8
11	chris	Lake	M	50310065	25	west	italy	1
13	chris	Lake	M	50684456	23	east	Canada	6
20	Eric	Watson	M	50193841	40	east	london	9
15	Grace	Palmer	F	50337582	45	west	paris	2
18	James	Rowand	M	50475613	38	south	new york	10
17	Nikolas	Scancarello	M	50364779	35	north	italy	7
14	Paige	Thomas	F	50112736	33	south	chicago	3
55	sami	ali	M	NULL	23	west	italy	1
19	Sofia	Vasquez	F	50884624	20	east	cuba	4
12	Tyler	Lobodzinski	M	50674463	35	south	LA	5
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

6. Is Null:

```
3 •  Select *
4    From Customer
5    Where Phone IS NULL;
6
```

Result Grid | Filter Rows: | Edit: | Export/Import:

Ssn	Fname	Lname	Gender	Phone	Age	Region	City	Control_Emp_ID
55	sami	ali	M	NULL	23	west	italy	1
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

7. LIKE operator:

```
2 •  select Fname , Lname
3    from employee
4    where fname LIKE 'D%';
5
```

Result Grid | Filter Rows:

Fname	Lname
Daniel	Alexander

8. NOT IN

```
6 •  SELECT * FROM Customer
7    WHERE City NOT IN ('Canada', 'london', 'italy');
8
```

Result Grid | Filter Rows: | Edit: | Export/Import:

Ssn	Fname	Lname	Gender	Phone	Age	Region	City	Control_Emp_ID
12	Tyler	Lobodzinski	M	50674463	35	south	LA	5
14	Paige	Thomas	F	50112736	33	south	chicago	3
15	Grace	Palmer	F	50337582	45	west	paris	2
18	James	Rowand	M	50475613	38	south	new york	10
19	Sofia	Vasquez	F	50884624	20	east	cuba	4
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

- **COMPLEX QUERY**

9. Difference:

   if I want to show customers that does not have any orders:

```
269 •   SELECT * FROM customer
270     WHERE NOT EXISTS (SELECT * FROM Orders WHERE Cust_Ssn =Ssn);
```

Result Grid | Filter Rows: | Edit: | Export/Import:

Ssn	Fname	Lname	Gender	Phone	Age	Region	City	Control_Emp_ID
20	Eric	Watson	M	50193841	40	east	london	9
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

10. Group By:

    Show average salary depend on gender type:

```
264 •   Select gender ,avg(salary) as Average_salary
265     From EMPLOYEE
266     GROUP BY gender;
```

Result Grid | Filter Rows: | Export: | Wrap Cell

gender	Average_salary
M	29600000.0000
F	32200000.0000

11. Having:

    Show the customers who ordered many times:

```
272 •   select fname , lname
273     from customer , orders
274     where SSN=CUST_SSN
275     GROUP BY CUST_SSN
276     HAVING count(*)>1;
```

Result Grid | Filter Rows:

fname	lname
Paige	Thomas

12.comparison queries (ALL):

```
279 •   SELECT ALL Title , price
280     FROM books
281     WHERE price<50;
```

Result Grid | Filter Rows:

Title	price
Peter Pan	33
The Night Circus	30
The Shadow of the Wind	20
The Little Prince	40
Finale	45

13.Aggregation (CONT):

```
284 •   Select count(ISBN)
285     From BOOKS;
286
```

Result Grid | Filter Rows:

count(ISBN)
10

14.Join:

Show the book name and book type:

```
288
289 •  SELECT title ,BookType
290    FROM books JOIN BOOKS_TYPE ON ISBN=B_ISBN;
```

Result Grid | Filter Rows: | Export: | Wr

title	BookType
The ABC Murders	Mystery
Peter Pan	Classics
The Night Circus	Historical Fiction
The Night Circus	Magical Realism
The Shadow of the Wind	Horror
The Shadow of the Wind	Spanish Literature
The Little Prince	Classics
A Gathering of Shadows	Fantasy
Finale	Fantasy
The Time Keeper	Contemporary
The Wicked King	Fantasy
If Cats Disappeared fro...	Fiction

15.View:

```
create view Branch_employee AS
select *
from employee
where BR_ID=12;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

ID	Fname	Lname	Gender	Salary	Phone	BOD	Address	Super_ID	BR_ID
3	Nicole	Abbatiello	F	32000000	50785922	1982-06-12	LA	2	12
12	ASMA	alhajri	F	32000000	50785922	2000-03-07	LA	2	12

16. Trigger:

Before inserting in employee, it will set the first name to uppercase:

```
293 •   create trigger name_upercase
294     before insert on employee for each row
295     set new.Fname=upper(new.Fname);
296
297 •   insert into employee
298     values(012, 'asma','alhajri','F',32000000,050785922,'2000-03-7',
299     'LA',2,012);
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Conte

ID	Fname	Lname	Gender	Salary	Phone	BOD	Address	Super_ID	BR_ID
5	Jacob	Baker	M	12000000	50682993	1983-11-11	chicago	4	14
6	Andrew	Barnes	M	15000000	50583759	1979-04-13	japan	5	15
7	June	Adam	F	20000000	50274655	1985-07-28	french	6	16
8	Michael	Hope	F	45000000	50733461	1958-03-22	LA	7	17
9	Isabell	Kalani	F	14000000	50667378	1945-01-04	new york	8	18
10	Noah	Hunter	M	34000000	50174660	1985-09-03	cuba	9	19
12	ASMA	alhajri	F	32000000	50785922	2000-03-07	LA	2	12

17. Flow control IF statement:

```
309 •   select ID , gender, if(salary>15000000,"More","less")
310     from employee;
311
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

ID	gender	if(salary>15000000,"More","less")
1	M	less
2	M	More
3	F	More
4	F	More
5	M	less
6	M	less
7	F	More
8	F	More
9	F	less
10	M	More
12	F	More

18. Calculate derived value employee age:

```
316 •   SELECT ID,Fname, Lname, timestampdiff(year,BOD,curdate()) AS ag
317     from employee;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

ID	Fname	Lname	age
3	Nicole	Abbatiello	38
4	Elizabeth	Bullerman	40
5	Jacob	Baker	37
6	Andrew	Barnes	41
7	June	Adam	35
8	Michael	Hope	63
9	Isabell	Kalani	76
10	Noah	Hunter	35
12	ASMA	alhajri	21

19. Calculate derived value dependent age:

```
320 •   SELECT Emp_ID,Fname, Lname, timestampdiff(year,BOD,curdate()) AS age
321     from dependent;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

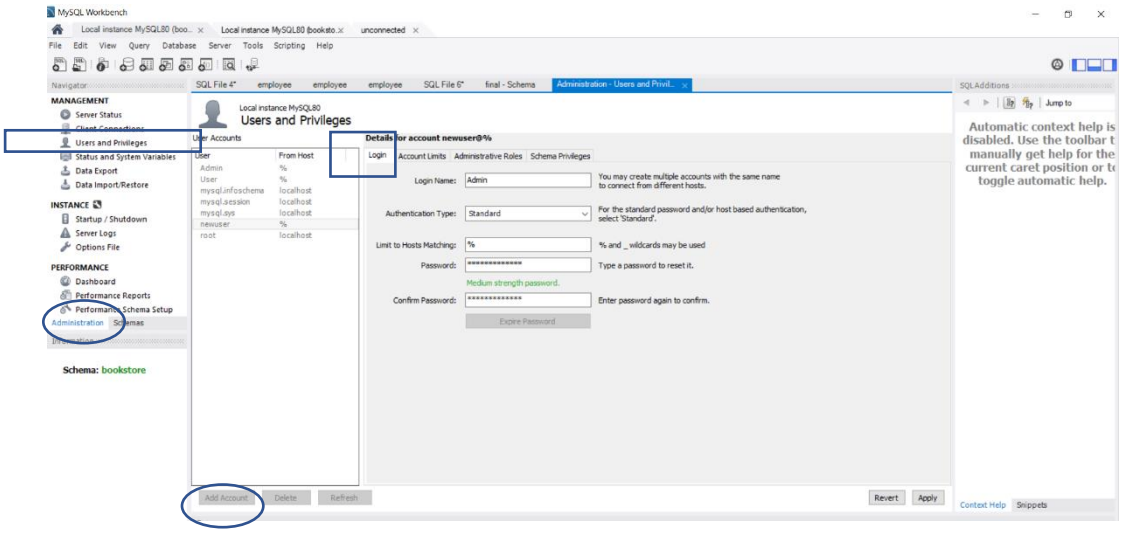
Emp_ID	Fname	Lname	age
1	Amanda	Alexander	65
2	Zoey	Lake	65
3	Richard	Abbatiello	65
4	Christopher	Bullerman	65
5	Ryan	Baker	65
6	William	Barnes	65
7	Rachel	Adam	65
8	Ashley	Hope	65
9	Caleb	Kalani	65
10	Isabella	Hunter	65

- **Privileges:**

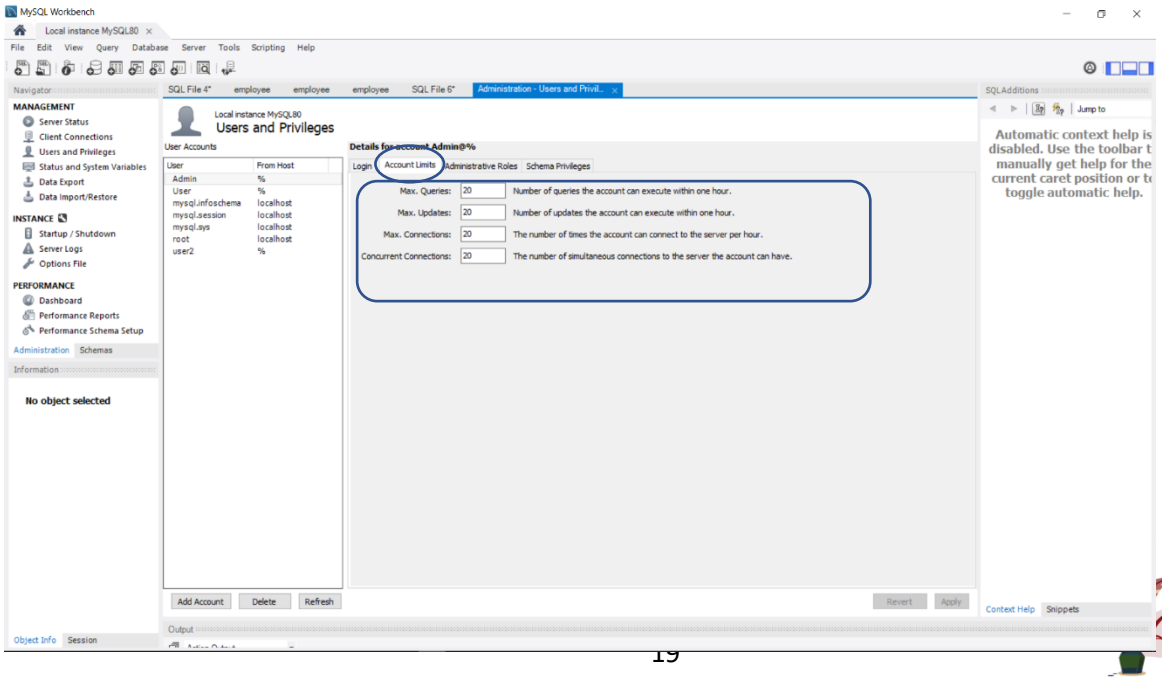
. **Admin**: people who have full privileges of accessing data and running operations.

Steps :

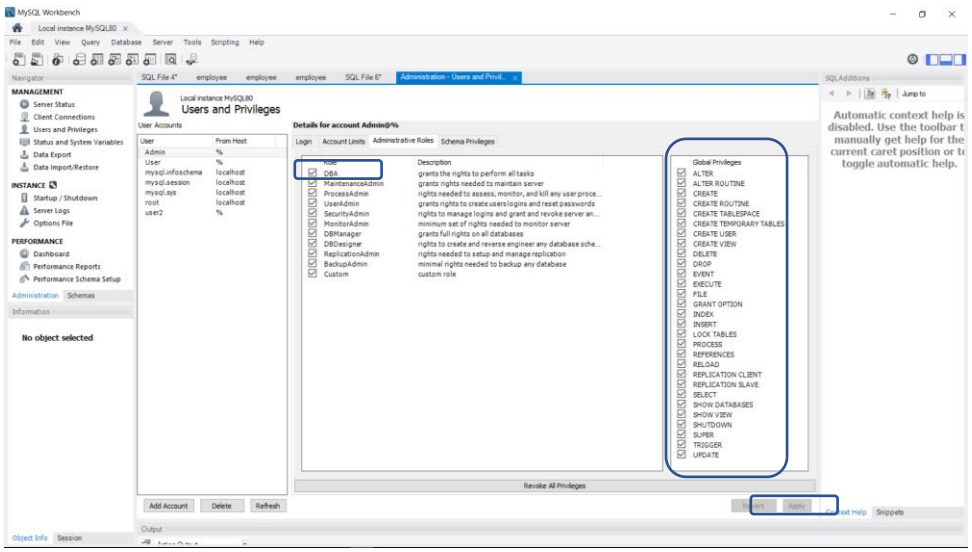
create account by Add account then, adding the login name "Admin "and password in (login).



Then (Account limits) to add the maximum query ,update, and connection , and concurrent connection that user can do it in database .



Then choose the privilege the admin can do it by (choose administrative Roles) . choose DBA and it automatically choose everything then (Apply).



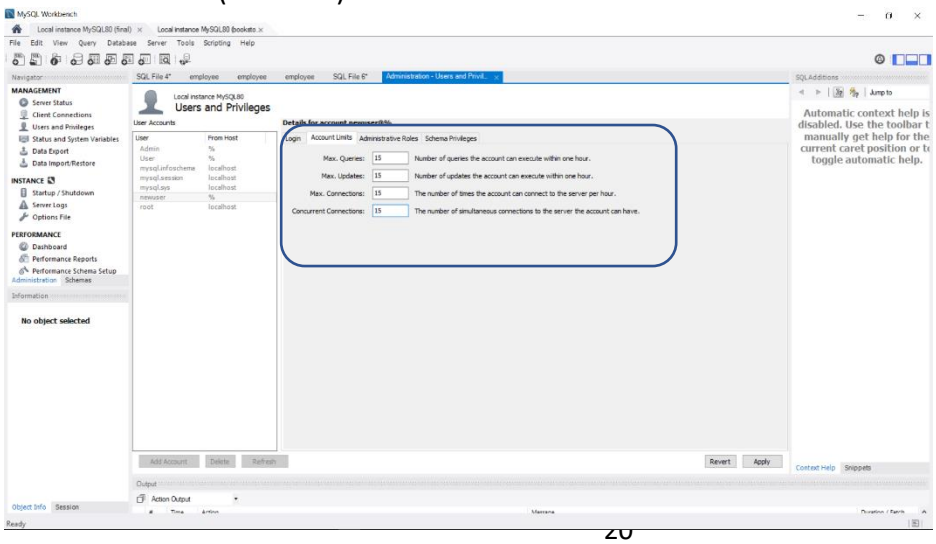
b. **Users**: Individuals/Organizations who have limited privileges to access data and run data.

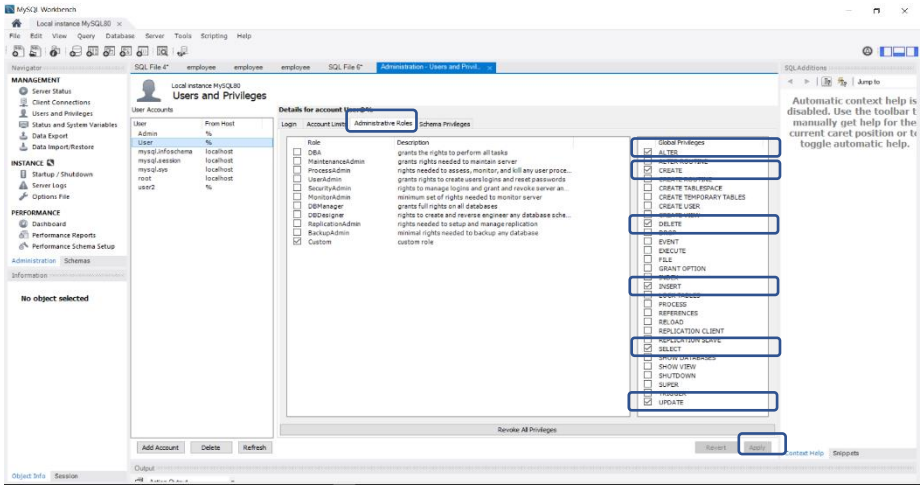
two types of user.

- User(Sub-Staff).
- user2(Main Staff).

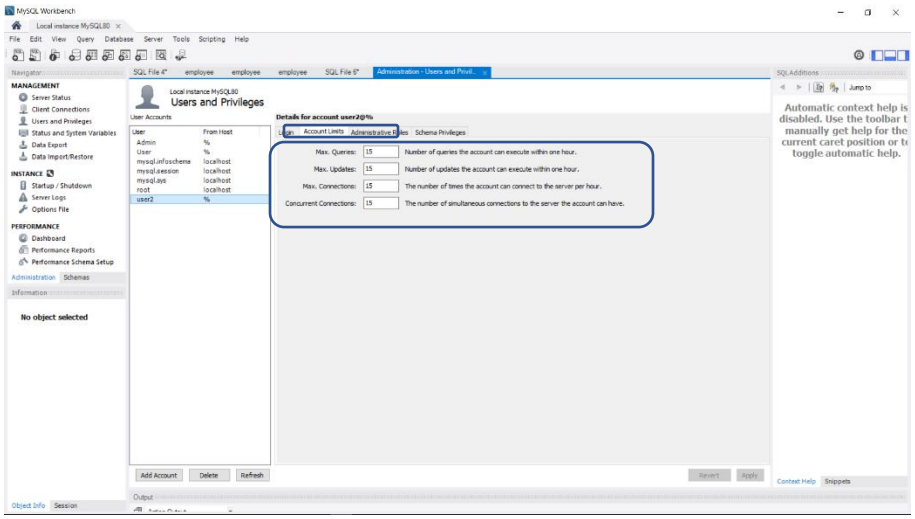
The steps it same as what we did with Admin, but the different is it will be in privilege in each user, and the maximum query, update, and connection , and concurrent connection that user can do it in database .

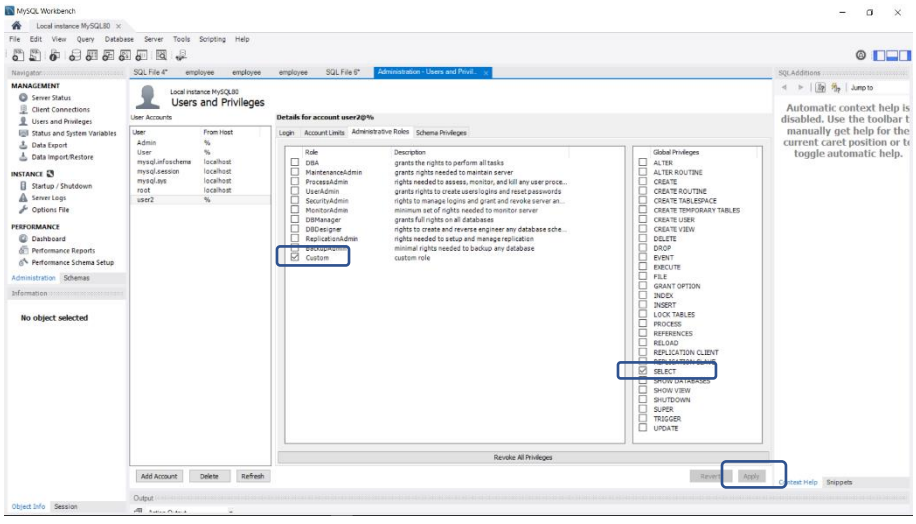
1. For User (Sub-Staff).





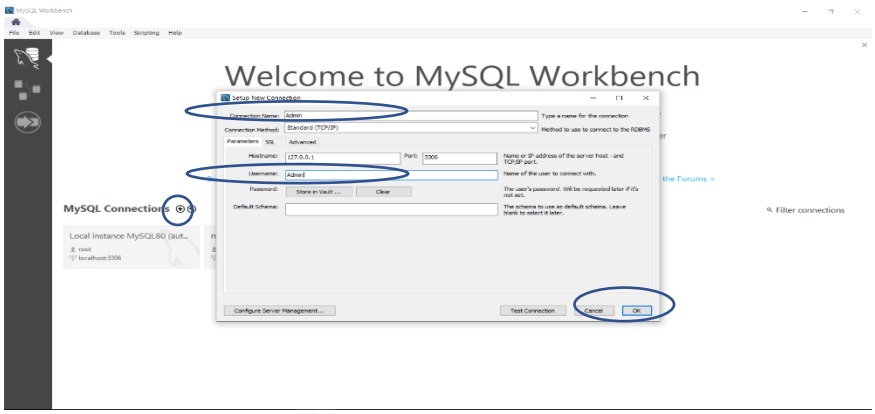
2. For user2(Main Staff)



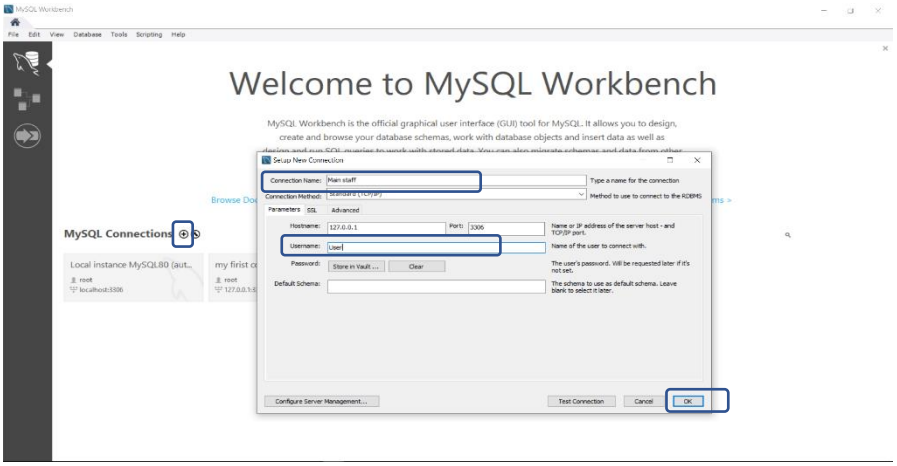


- Part 2 is making connection to MYSQL connection.

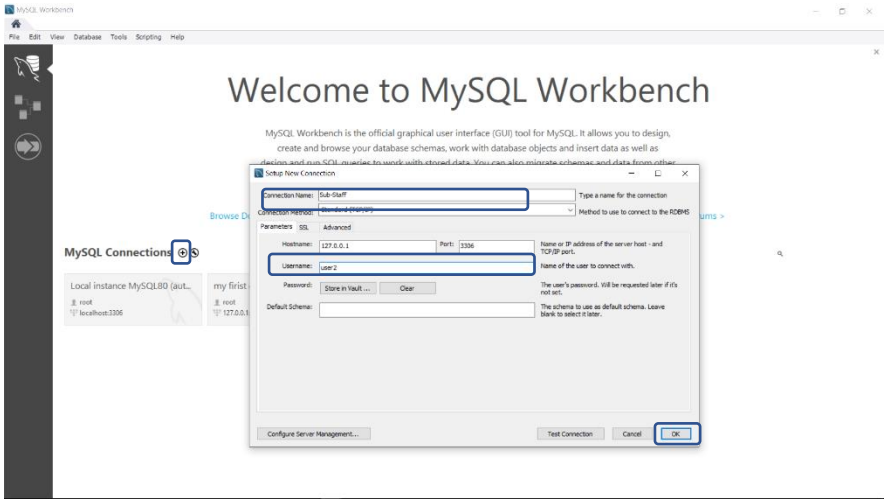
1. For Admin:



2. For User (Mian Staff):



3. For user2 (Sub-Staff):



- The final result :