

# Exercise for Introduction to Databases

## 1. Create Database

```
ttn@ttn: ~  
File Edit View Search Terminal Help  
ttn@ttn:~$ mysql -u ttn -p  
Enter password:  
Welcome to the MySQL monitor.  Commands end with ; or \g.  
Your MySQL connection id is 10  
Server version: 5.7.25-0ubuntu0.18.04.2 (Ubuntu)  
  
Copyright (c) 2000, 2019, Oracle and/or its affiliates. All rights reserved.  
  
Oracle is a registered trademark of Oracle Corporation and/or its  
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> create database bootcamp19;  
Query OK, 1 row affected (0.00 sec)  
  
mysql> show databases;  
+-----+  
| Database |  
+-----+  
| information_schema |  
| bootcamp |  
| bootcamp19 |  
| demo |  
| mysql |  
| performance_schema |  
| sys |  
+-----+  
7 rows in set (0.00 sec)
```

### 3. Create tables

```
ttn@ttn: ~  
File Edit View Search Terminal Help  
mysql> create table customer( customer_id int primary key auto_increment, name varchar(20) not null, age int not null, contact  
varchar(20) not null);  
Query OK, 0 rows affected (0.34 sec)  
  
mysql> create table sales( sales_id int primary key auto_increment, name varchar(20) not null);  
Query OK, 0 rows affected (0.38 sec)  
  
mysql> create table orders( orders_id int , name varchar(20) not null, id_customer int , id_sales int, foreign key (id_customer  
) references customer(customer_id), foreign key (id_sales) references sales(sales_id));  
Query OK, 0 rows affected (0.46 sec)  
  
mysql> show tables;  
+-----+  
| Tables_in_bootcamp19 |  
+-----+  
| customer              |  
| orders                |  
| sales                 |  
+-----+  
3 rows in set (0.00 sec)  
  
mysql> 
```

### 4. Insert sample data

```
ttn@ttn: ~
File Edit View Search Terminal Help
mysql> insert into customer(name,age,contact) values('amit' ,25, 764793476);
Query OK, 1 row affected (0.09 sec)

mysql> insert into customer(name,age,contact) values('abc' ,20, 9767793476);
Query OK, 1 row affected (0.10 sec)

mysql> insert into customer(name,age,contact) values('xyz' ,40, 87677793476);
Query OK, 1 row affected (0.09 sec)

mysql> select * from customer;
+-----+-----+-----+-----+
| customer_id | name | age | contact |
+-----+-----+-----+-----+
|          1 | amit | 25 | 764793476 |
|          2 | abc  | 20 | 9767793476 |
|          3 | xyz  | 40 | 87677793476 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> 
```

```
ttn@ttn: ~
File Edit View Search Terminal Help
mysql> insert into sales(name) values('rohit');
Query OK, 1 row affected (0.09 sec)

mysql> insert into sales(name) values('arun');
Query OK, 1 row affected (0.09 sec)

mysql> insert into sales(name) values('ankit');
Query OK, 1 row affected (0.09 sec)

mysql> select * from sales;
+-----+-----+
| sales_id | name |
+-----+-----+
|          1 | rohit |
|          2 | arun  |
|          3 | ankit |
+-----+-----+
3 rows in set (0.00 sec)

mysql> 
```

```
ttn@ttn: ~  
File Edit View Search Terminal Help  
mysql> insert into orders(name, id_customer, id_sales) values('pen', 1,1);  
Query OK, 1 row affected (0.13 sec)  
  
mysql> insert into orders(name, id_customer, id_sales) values('book', 1,2);  
Query OK, 1 row affected (0.06 sec)  
  
mysql> insert into orders(name, id_customer, id_sales) values('pencil', 2,3);  
Query OK, 1 row affected (0.11 sec)  
  
mysql> insert into orders(name, id_customer, id_sales) values('eraser', 3,3);  
Query OK, 1 row affected (0.09 sec)  
  
mysql> select * from orders;  
+-----+-----+-----+-----+  
| orders_id | name  | id_customer | id_sales |  
+-----+-----+-----+-----+  
| 1 | pen  | 1 | 1 |  
| 2 | book | 1 | 2 |  
| 3 | pencil | 2 | 3 |  
| 4 | eraser | 3 | 3 |  
+-----+-----+-----+-----+  
4 rows in set (0.00 sec)  
  
mysql>  
mysql>  
mysql>  
mysql>  
mysql>  
mysql>  
mysql>  
mysql>
```

5. Find the sales person have multiple orders.

```
ttn@ttn: ~  
File Edit View Search Terminal Help  
mysql> select * from orders;  
+-----+-----+-----+-----+  
| orders_id | name  | id_customer | id_sales |  
+-----+-----+-----+-----+  
| 1 | pen  | 1 | 1 |  
| 2 | book | 1 | 2 |  
| 3 | pencil | 2 | 3 |  
| 4 | eraser | 3 | 3 |  
+-----+-----+-----+-----+  
4 rows in set (0.00 sec)  
  
mysql> select sales.name from sales,orders where orders.id_sales=sales.sales_id group by orders.id_sales having count(orders.id_sales)>1;  
+-----+  
| name |  
+-----+  
| ankit |  
+-----+  
1 row in set (0.00 sec)  
  
mysql>
```

## 6. Find the all sales person details along with order details

```
ttn@ttn: ~  
File Edit View Search Terminal Help  
mysql> select sales.sales_id, sales.name, orders.orders_id, orders.name, orders.id_customer from orders left join sales on order  
s.id_sales=sales.sales_id;  
+-----+-----+-----+-----+-----+  
| sales_id | name | orders_id | name | id_customer |  
+-----+-----+-----+-----+-----+  
| 1 | rohit | 1 | pen | 1 |  
| 2 | arun | 2 | book | 1 |  
| 3 | ankit | 3 | pencil | 2 |  
| 3 | ankit | 4 | eraser | 3 |  
+-----+-----+-----+-----+-----+  
4 rows in set (0.00 sec)  
  
mysql>
```

## 7. Create index

```
ttn@ttn: ~  
File Edit View Search Terminal Help  
mysql> select * from orders;  
+-----+-----+-----+-----+  
| orders_id | name | id_customer | id_sales |  
+-----+-----+-----+-----+  
| 1 | pen | 1 | 1 |  
| 2 | book | 1 | 2 |  
| 3 | pencil | 2 | 3 |  
| 4 | eraser | 3 | 3 |  
+-----+-----+-----+-----+  
4 rows in set (0.00 sec)  
  
mysql> create index orders_index on orders(name);  
Query OK, 0 rows affected (0.36 sec)  
Records: 0 Duplicates: 0 Warnings: 0  
  
mysql> show index from orders;  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
| Table | Non_unique | Key_name | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Comment |  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
| orders | 0 | PRIMARY | 1 | orders_id | A | 4 | NULL | NULL | | BTREE | |  
| orders | 1 | id_customer | 1 | id_customer | A | 3 | NULL | NULL | YES | BTREE | |  
| orders | 1 | id_sales | 1 | id_sales | A | 3 | NULL | NULL | YES | BTREE | |  
| orders | 1 | orders_index | 1 | name | A | 4 | NULL | NULL | | BTREE | |  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
4 rows in set (0.00 sec)  
  
mysql>  
mysql>  
mysql>  
mysql>
```

## 8. How to show index on a table

```
ttn@ttn: ~  
File Edit View Search Terminal Help  
mysql> show index from orders;  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
| Table | Non_unique | Key_name | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type |  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
| orders | 0 | PRIMARY | 1 | orders_id | A | 4 | NULL | NULL | | BTREE |  
| orders | 1 | id_customer | 1 | id_customer | A | 3 | NULL | NULL | YES | BTREE |  
| orders | 1 | id_sales | 1 | id_sales | A | 3 | NULL | NULL | YES | BTREE |  
| orders | 1 | orders_index | 1 | name | A | 4 | NULL | NULL | | BTREE |  
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
4 rows in set (0.00 sec)  
  
mysql> 
```

## 9. Find the order number, sale person name, along with the customer to whom that order belongs to

```
ttn@ttn: ~  
File Edit View Search Terminal Help  
mysql> select orders.orders_id, sales.name, orders.id_customer from orders left join sales on orders.id_sales=sales.sales_id;  
+-----+-----+-----+  
| orders_id | name | id_customer |  
+-----+-----+-----+  
| 1 | rohit | 1 |  
| 2 | arun | 1 |  
| 3 | ankit | 2 |  
| 4 | ankit | 3 |  
+-----+-----+-----+  
4 rows in set (0.00 sec)  
  
mysql>
```