Introduction to Databases
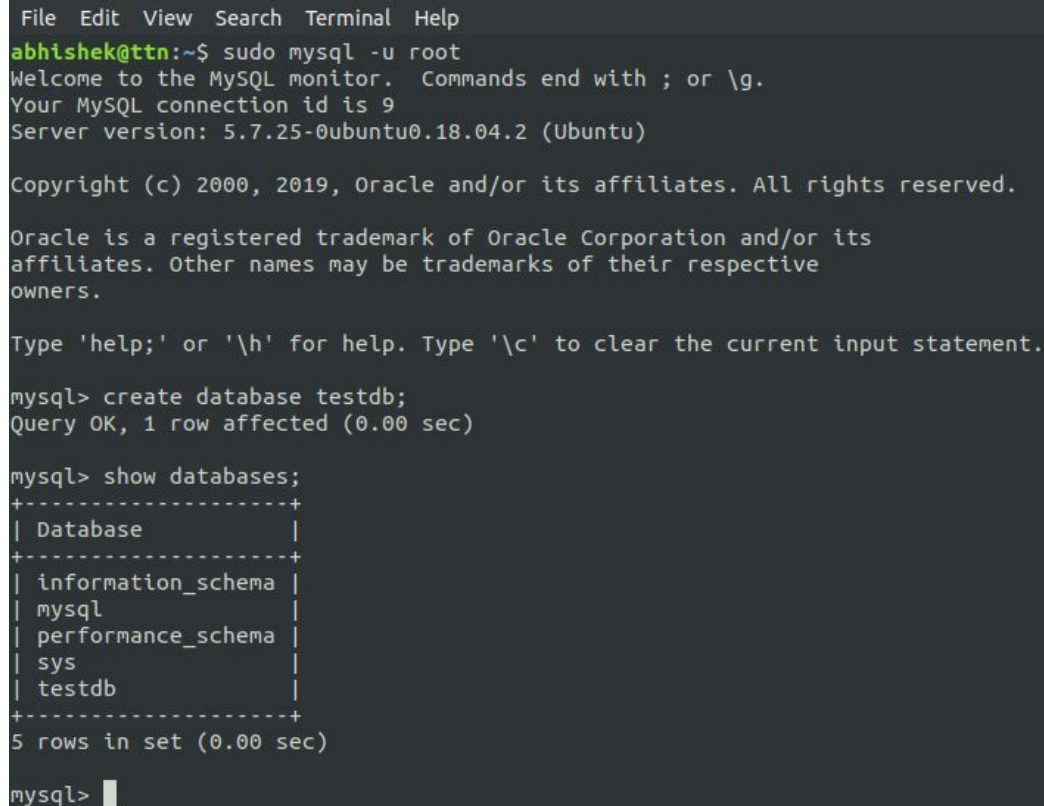
Exercise 3

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Problem Statement: There can be multiple customers, who can place multiple orders on the site. Now a sales person can handle these orders will distribute into multiple sales persons (One order will be assign to one salesperson only). So a sales person can have multiple orders of multiple customers.

1. **Create Database**
   > `create database testdb;`

```
File  Edit  View  Search  Terminal  Help
abhishek@ttn:~$ sudo mysql -u root
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 5.7.25-0ubuntu0.18.04.2 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database testdb;
Query OK, 1 row affected (0.00 sec)

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| sys                |
| testdb             |
+--------------------+
5 rows in set (0.00 sec)

mysql>
```

2. **Design Schema**

```
File  Edit  View  Search  Terminal  Help
mysql> describe sales;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| Sales_ID | int(11)     | NO   | PRI | NULL    |       |
| Sname    | varchar(30) | YES  |     | NULL    |       |
| Area     | varchar(30) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> describe customer;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| cust_ID   | int(11)     | NO   | PRI | NULL    |       |
| custName  | varchar(30) | YES  |     | NULL    |       |
| orderTime | datetime    | YES  |     | NULL    |       |
| Address   | varchar(60) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> describe orders;
+-----------+-------------+------+-----+-------------------+-----------------------------+
| Field     | Type        | Null | Key | Default           | Extra                       |
+-----------+-------------+------+-----+-------------------+-----------------------------+
| order_ID  | int(11)     | NO   | PRI | NULL              |                             |
| orderName | varchar(30) | YES  |     | NULL              |                             |
| cust_ID   | int(11)     | YES  |     | NULL              |                             |
| orderTime | timestamp   | NO   |     | CURRENT_TIMESTAMP | on update CURRENT_TIMESTAMP |
| Sales_ID  | int(11)     | YES  |     | NULL              |                             |
+-----------+-------------+------+-----+-------------------+-----------------------------+
5 rows in set (0.00 sec)

mysql>
```

3. **Create tables**
   > create table sales (Sales_ID int, Sname varchar(30), Area varchar(30), primary key(Sales_ID));
   > create table customer (cust_ID int, custName varchar(30), orderTime datetime, Address varchar(60), primary key(cust_ID));
   > create table orders (order_ID int not null, orderName varchar(30), cust_ID int, orderTime timestamp, Sales_ID int, primary key (order_ID));

```
File  Edit  View  Search  Terminal  Help
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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> use testdb
Database changed
mysql> create table sales (Sales_ID int, Sname varchar(30), Area varchar(30), pr
imary key(Sales_ID));
Query OK, 0 rows affected (0.46 sec)

mysql>
mysql> create table customer (cust_ID int, custName varchar(30), orderTime datet
ime, Address varchar(60), primary key(cust_ID));
Query OK, 0 rows affected (0.29 sec)

mysql> create table orders (order_ID int not null, orderName varchar(30), cust_I
D int, orderTime timestamp, Sales_ID int, primary key (order_ID));
Query OK, 0 rows affected (0.40 sec)

mysql>
```

4. Insert sample data
> insert into sales values(109,"Suresh Kumar","Sector 26");

```
File  Edit  View  Search  Terminal  Help
mysql> insert into sales values(109,"Suresh Kumar","Sector 26");
Query OK, 1 row affected (0.08 sec)

mysql> insert into sales values(104,"Raju Shrivastav","Sector 57");
Query OK, 1 row affected (0.08 sec)

mysql> insert into sales values(112,"Raj Singh","Sector 32");
Query OK, 1 row affected (0.08 sec)

mysql> insert into sales values(107,"Raj Singh","Sector 57");
Query OK, 1 row affected (0.08 sec)

mysql> select * from sales;
+----------+-----------------+-----------+
| Sales_ID | Sname           | Area      |
+----------+-----------------+-----------+
|      104 | Raju Shrivastav | Sector 57 |
|      107 | Raj Singh       | Sector 57 |
|      109 | Suresh Kumar    | Sector 26 |
|      112 | Raj Singh       | Sector 32 |
+----------+-----------------+-----------+
4 rows in set (0.00 sec)

mysql>
```

5. **Find the sales person have multiple orders.**
    > select o.Sales_ID, s.Sname, count(o.order_ID) from sales s inner join
    orders o on o.Sales_ID=s.Sales_ID group by o.Sales_ID having
    count(order_ID)>1;

```
File  Edit  View  Search  Terminal  Help
mysql> mysql> * from orders;
+----------+------------+---------+---------------------+----------+
| order_ID | orderName  | cust_ID | orderTime           | Sales_ID |
+----------+------------+---------+---------------------+----------+
|     1001 | Sandwich   |    7201 | 2019-02-06 23:11:35 |      109 |
|     1002 | Cold Drink |    7201 | 2019-02-06 23:12:06 |      104 |
|     1003 | Patties    |    7236 | 2019-02-06 23:13:26 |      112 |
|     1004 | Burgur     |    7219 | 2019-02-06 23:14:27 |      109 |
|     1005 | Fries      |    7219 | 2019-02-06 23:15:41 |      107 |
|     1006 | Cold drink |    7219 | 2019-02-06 23:16:09 |      104 |
+----------+------------+---------+---------------------+----------+
6 rows in set (0.00 sec)

mysql> select * from sales;
+----------+-----------------+-----------+
| Sales_ID | Sname           | Area      |
+----------+-----------------+-----------+
|      104 | Raju Shrivastav | Sector 57 |
|      107 | Raj Singh       | Sector 57 |
|      109 | Suresh Kumar    | Sector 26 |
|      112 | Raj Singh       | Sector 32 |
+----------+-----------------+-----------+
4 rows in set (0.00 sec)

mysql> select o.Sales_ID, s.Sname, count(o.order_ID) from sales s inner join o
rders o on o.Sales_ID=s.Sales_ID group by o.Sales_ID having count(order_ID)>1;

+----------+-----------------+-------------------+
| Sales_ID | Sname           | count(o.order_ID) |
+----------+-----------------+-------------------+
|      104 | Raju Shrivastav |                 2 |
|      109 | Suresh Kumar    |                 2 |
+----------+-----------------+-------------------+
2 rows in set (0.00 sec)

mysql> _
```

6. **Find the all sales person details along with order details**
    > select s.sname, s.Sales_ID, s.Area, o.order_ID, o.orderName from orders o
    inner join sales s on o.Sales_ID=s.Sales_ID order by s.sname;

```
File  Edit  View  Search  Terminal  Help
mysql> select s.sname, s.Sales_ID, s.Area, o.order_ID, o.orderName from orders o
 inner join sales s on o.Sales_ID=s.Sales_ID order by s.sname;
+-----------------+----------+-----------+----------+-----------+
| sname           | Sales_ID | Area      | order_ID | orderName |
+-----------------+----------+-----------+----------+-----------+
| Raj Singh       |      107 | Sector 57 |     1005 | Fries     |
| Raj Singh       |      112 | Sector 32 |     1003 | Patties   |
| Raju Shrivastav |      104 | Sector 57 |     1002 | Cold Drink|
| Raju Shrivastav |      104 | Sector 57 |     1006 | Cold drink|
| Suresh Kumar    |      109 | Sector 26 |     1001 | Sandwich  |
| Suresh Kumar    |      109 | Sector 26 |     1004 | Burgur    |
+-----------------+----------+-----------+----------+-----------+
6 rows in set (0.00 sec)

mysql>
mysql>
mysql>
```

7. **Create index**
   > create index oid on orders (order_ID);

```
File  Edit  View  Search  Terminal  Help
mysql> create index oid on orders (order_ID);
Query OK, 0 rows affected (0.34 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql>
mysql>
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mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
```

8. **How to show index on a table**
   > show index from others;

```
File  Edit  View  Search  Terminal  Help
mysql> create index oid on orders (order_ID);
Query OK, 0 rows affected (0.22 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 | Index_comment |
+--------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+
| orders |          0 | PRIMARY  |            1 | order_ID    | A         |           6 |     NULL | NULL   |      | BTREE      |         |               |
| orders |          1 | oid      |            1 | order_ID    | A         |           6 |     NULL | NULL   |      | BTREE      |         |               |
+--------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+
2 rows in set (0.00 sec)

mysql>
```

9. Find the order number, salesperson name, along with the customer to whom that order belongs to

> select o.order_ID, s.sname, c.custName, o.orderName from orders o inner
join sales s inner join customer c on o.Sales_ID=s.Sales_ID and
o.cust_ID=c.cust_ID;

```
File  Edit  View  Search  Terminal  Help

mysql> select o.order_ID, s.sname, c.custName, o.orderName from orders o inner j
oin sales s inner join customer c on o.Sales_ID=s.Sales_ID and o.cust_ID=c.cust_
ID;
+----------+-----------------+--------------+------------+
| order_ID | sname           | custName     | orderName  |
+----------+-----------------+--------------+------------+
|     1001 | Suresh Kumar    | Rahul Sharma | Sandwich   |
|     1002 | Raju Shrivastav | Rahul Sharma | Cold Drink |
|     1003 | Raj Singh       | Akaash Yaduv | Patties    |
|     1004 | Suresh Kumar    | Priya Singh  | Burgur     |
|     1005 | Raj Singh       | Priya Singh  | Fries      |
|     1006 | Raju Shrivastav | Priya Singh  | Cold drink |
+----------+-----------------+--------------+------------+
6 rows in set (0.00 sec)

mysql>
```

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