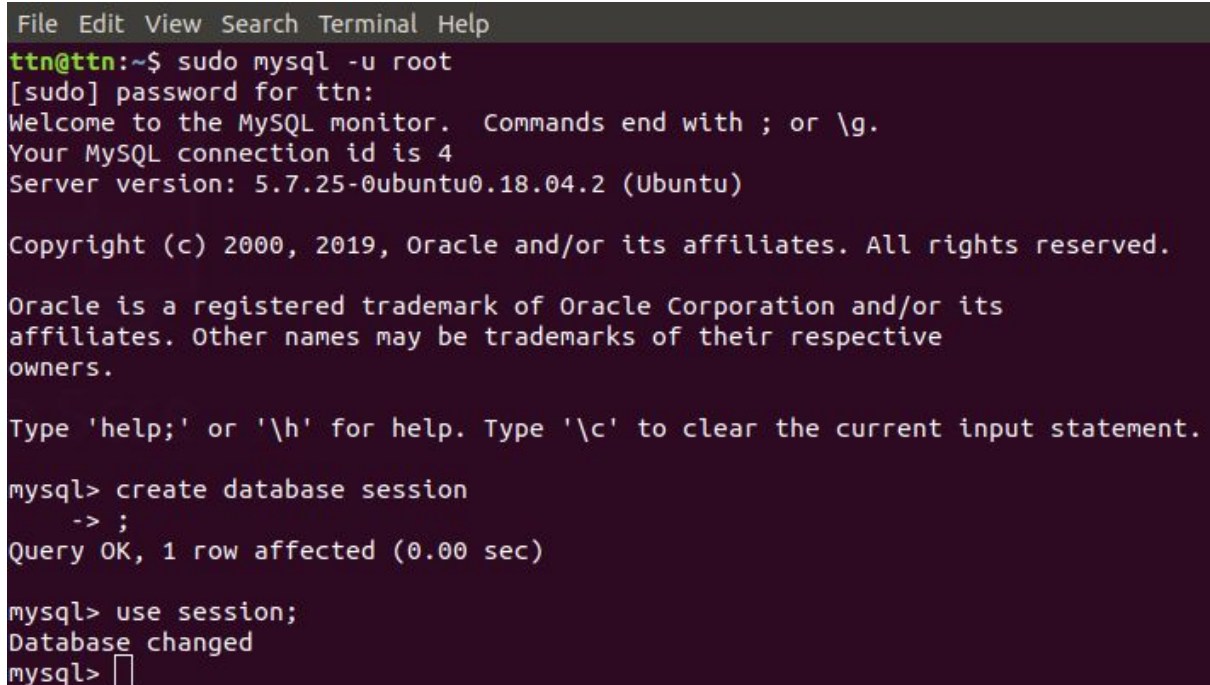**Exercise 3**

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


```
File  Edit  View  Search  Terminal  Help
ttn@ttn:~$ sudo mysql -u root
[sudo] password for ttn:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 4
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 session
    -> ;
Query OK, 1 row affected (0.00 sec)

mysql> use session;
Database changed
mysql>
```

2. Design Schema
3. Create tables

```
File  Edit  View  Search  Terminal  Help
mysql> use session;
Database changed
mysql> create table orders(o_id bigint(20) NOT NULL, cust_id bigint(20) NOT NULL
,cust_name varchar(20), s_id bigint(20) NOT NULL, primary key(o_id));
Query OK, 0 rows affected (0.36 sec)

mysql> create table sperson(s_id bigint(20) NOT NULL,s_name varchar(20),cust_id
bigint(20),o_id bigint(20),primary key(s_id));
Query OK, 0 rows affected (0.38 sec)

mysql> desc orders
    -> ;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| o_id      | bigint(20)  | NO   | PRI | NULL    |       |
| cust_id   | bigint(20)  | NO   |     | NULL    |       |
| cust_name | varchar(20) | YES  |     | NULL    |       |
| s_id      | bigint(20)  | NO   |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
4 rows in set (0.02 sec)

mysql> desc sperson;
+---------+-------------+------+-----+---------+-------+
```

```
File  Edit  View  Search  Terminal  Help
mysql> desc orders
    -> ;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| o_id      | bigint(20)  | NO   | PRI | NULL    |       |
| cust_id   | bigint(20)  | NO   |     | NULL    |       |
| cust_name | varchar(20) | YES  |     | NULL    |       |
| s_id      | bigint(20)  | NO   |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
4 rows in set (0.02 sec)

mysql> desc sperson;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| s_id    | bigint(20)  | NO   | PRI | NULL    |       |
| s_name  | varchar(20) | YES  |     | NULL    |       |
| cust_id | bigint(20)  | YES  |     | NULL    |       |
| o_id    | bigint(20)  | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql>
```

4. Insert sample data

```
File Edit View Search Terminal Help
mysql> insert into orders values(1002,2,"xyz",5002);
Query OK, 1 row affected (0.12 sec)

mysql> insert into orders values(1003,3,"jkl",5003);
Query OK, 1 row affected (0.10 sec)

mysql> insert into orders values(1004,4,"geet",5004);
Query OK, 1 row affected (0.09 sec)

mysql> insert into orders values(1005,5,"gagan",5005);
Query OK, 1 row affected (0.09 sec)

mysql> select * from orders;
+------+---------+-----------+------+
| o_id | cust_id | cust_name | s_id |
+------+---------+-----------+------+
| 1001 |       1 | abc       | 5001 |
| 1002 |       2 | xyz       | 5002 |
| 1003 |       3 | jkl       | 5003 |
| 1004 |       4 | geet      | 5004 |
| 1005 |       5 | gagan     | 5005 |
+------+---------+-----------+------+
5 rows in set (0.00 sec)
```

```
File  Edit  View  Search  Terminal  Help
mysql> insert into sperson values(5001,"john",1,1001);
Query OK, 1 row affected (0.12 sec)

mysql> insert into sperson values(5003,"mary",3,1003);
Query OK, 1 row affected (0.08 sec)

mysql> insert into sperson values(5002,"jane",2,1002);
Query OK, 1 row affected (0.09 sec)

mysql> insert into sperson values(5004,"kate",4,1004);
Query OK, 1 row affected (0.07 sec)

mysql> insert into sperson values(5005,"sandy",5,1005);
Query OK, 1 row affected (0.08 sec)

mysql> select * from sperson;
+------+--------+---------+------+
| s_id | s_name | cust_id | o_id |
+------+--------+---------+------+
| 5001 | john   |       1 | 1001 |
| 5002 | jane   |       2 | 1002 |
| 5003 | mary   |       3 | 1003 |
| 5004 | kate   |       4 | 1004 |
| 5005 | sandy  |       5 | 1005 |
```

5. Find the sales person have multiple orders.

```
| 5003 |  mary  |          3 |  1003 |
| 5004 |  kate  |          4 |  1004 |
| 5005 |  sandy |          5 |  1005 |
| 5001 |  john  |          1 |  1002 |
+------+--------+------------+-------+
6 rows in set (0.00 sec)

mysql> select s_name from sperson where count(s_name)>1;
ERROR 1111 (HY000): Invalid use of group function
mysql> select s_name from sperson group by s_name  where count(s_name)>1;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that
corresponds to your MySQL server version for the right syntax to use near 'where
 count(s_name)>1' at line 1
mysql> select s_name from sperson groupby s_name where count(s_name) > 1;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that
corresponds to your MySQL server version for the right syntax to use near 's_nam
e where count(s_name) > 1' at line 1
mysql> select s_name from sperson group by s_name having count(s_name)>1;
+--------+
| s_name |
+--------+
| john   |
+--------+
1 row in set (0.00 sec)
```

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

```
File  Edit  View  Search  Terminal  Help
|  5003 |  mary    |        3 |  1003 |
|  5004 |  kate    |        4 |  1004 |
|  5005 |  sandy   |        5 |  1005 |
|  5001 |  john    |        1 |  1002 |
|  5001 |  john    |        6 |  1006 |
+------+---------+---------+------+
7 rows in set (0.00 sec)

mysql> select * from orders left join sperson on orders.s_id=sperson.s_id union
select * from orders right join sperson on orders.s_id=sperson.s_id;
+------+---------+-----------+------+------+---------+---------+------+
| o_id | cust_id | cust_name | s_id | s_id | s_name  | cust_id | o_id |
+------+---------+-----------+------+------+---------+---------+------+
| 1001 |       1 | abc       | 5001 | 5001 | john    |       1 | 1001 |
| 1002 |       2 | xyz       | 5002 | 5002 | jane    |       2 | 1002 |
| 1003 |       3 | jkl       | 5003 | 5003 | mary    |       3 | 1003 |
| 1004 |       4 | geet      | 5004 | 5004 | kate    |       4 | 1004 |
| 1005 |       5 | gagan     | 5005 | 5005 | sandy   |       5 | 1005 |
| 1001 |       1 | abc       | 5001 | 5001 | john    |       1 | 1002 |
| 1001 |       1 | abc       | 5001 | 5001 | john    |       6 | 1006 |
+------+---------+-----------+------+------+---------+---------+------+
7 rows in set (0.00 sec)

mysql>
```

7. Create index

```
File  Edit  View  Search  Terminal  Help
7 rows in set (0.00 sec)

mysql> create index ind on orders (cust_name,cust_id);
Query OK, 0 rows affected (0.42 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> show index from orders;
+--------+------------+----------+--------------+-------------+-----------+------+-----
--------+----------+--------+------+-------------+---------+---------------+
| Table  | Non_unique | Key_name | Seq_in_index | Column_name | Collation | Card
inality | Sub_part | Packed | Null | Index_type  | Comment | Index_comment |
+--------+------------+----------+--------------+-------------+-----------+------+-----
--------+----------+--------+------+-------------+---------+---------------+
| orders |          0 | PRIMARY  |            1 | o_id        | A         |
      4 |     NULL   | NULL     |      | BTREE       |         |               |
| orders |          1 | ind      |            1 | cust_name   | A         |
      5 |     NULL   | NULL     | YES  | BTREE       |         |               |
| orders |          1 | ind      |            2 | cust_id     | A         |
      5 |     NULL   | NULL     |      | BTREE       |         |               |
+--------+------------+----------+--------------+-------------+-----------+------+-----
--------+----------+--------+------+-------------+---------+---------------+
3 rows in set (0.00 sec)

mysql>
```

8. How to show index on a table

```
File  Edit  View  Search  Terminal  Help
7 rows in set (0.00 sec)

mysql> create index ind on orders (cust_name,cust_id);
Query OK, 0 rows affected (0.42 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> show index from orders;
+---------+------------+----------+--------------+-------------+------------+------
--------+----------+--------+------+------------+---------+---------------+
| Table   | Non_unique | Key_name | Seq_in_index | Column_name | Collation  | Card
inality | Sub_part | Packed | Null | Index_type | Comment | Index_comment |
+---------+------------+----------+--------------+-------------+------------+------
--------+----------+--------+------+------------+---------+---------------+
| orders  |          0 | PRIMARY  |            1 | o_id        | A          |
      4 |     NULL | NULL   |      | BTREE      |         |               |
| orders  |          1 | ind      |            1 | cust_name   | A          |
      5 |     NULL | NULL   | YES  | BTREE      |         |               |
| orders  |          1 | ind      |            2 | cust_id     | A          |
      5 |     NULL | NULL   |      | BTREE      |         |               |
+---------+------------+----------+--------------+-------------+------------+------
--------+----------+--------+------+------------+---------+---------------+
3 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

```
File  Edit  View  Search  Terminal  Help
mysql> select sperson.o_id,sperson.s_name,orders.cust_name from orders left join
 sperson on orders.s_id=sperson.s_id union select sperson.o_id,sperson.s_name,or
ders.cust_name from orders right join sperson on orders.s_id=sperson.s_id;
+------+--------+-----------+
| o_id | s_name | cust_name |
+------+--------+-----------+
| 1001 | john   | abc       |
| 1002 | jane   | xyz       |
| 1003 | mary   | jkl       |
| 1004 | kate   | geet      |
| 1005 | sandy  | gagan     |
| 1002 | john   | abc       |
| 1006 | john   | abc       |
+------+--------+-----------+
7 rows in set (0.00 sec)

mysql>
```