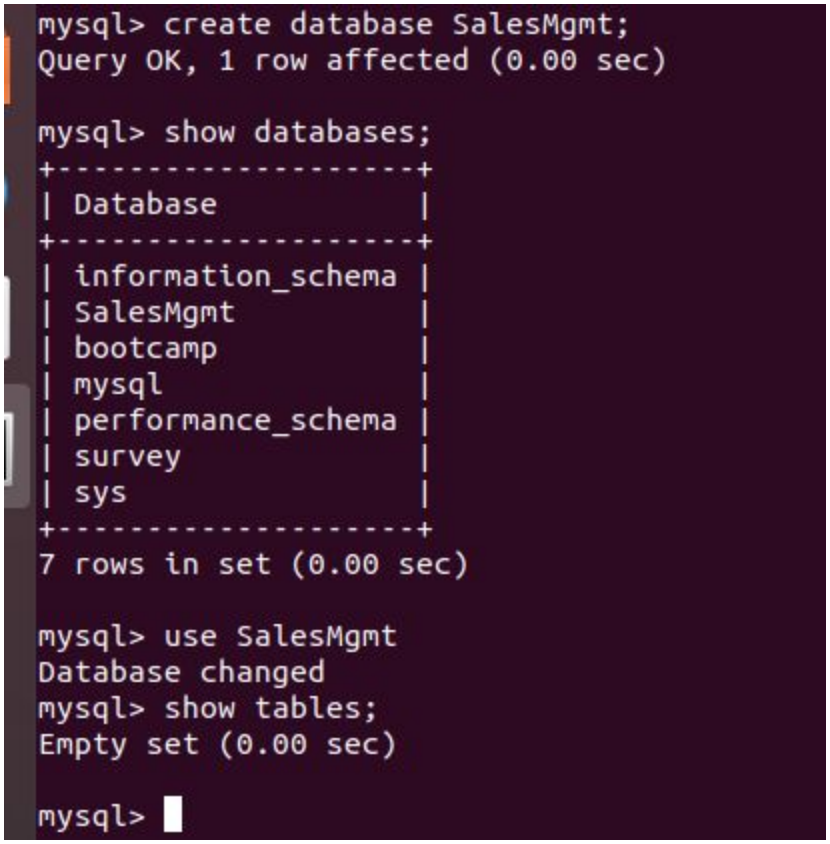
Problem Statement: There can be multiple customers, who can place multiple orders on the site. Now a sales person can handle these orders will distribute into multiple sales persons (One order will be assign to one salesperson only). So a sales person can have multiple orders of multiple customers

Question1: Create Database.

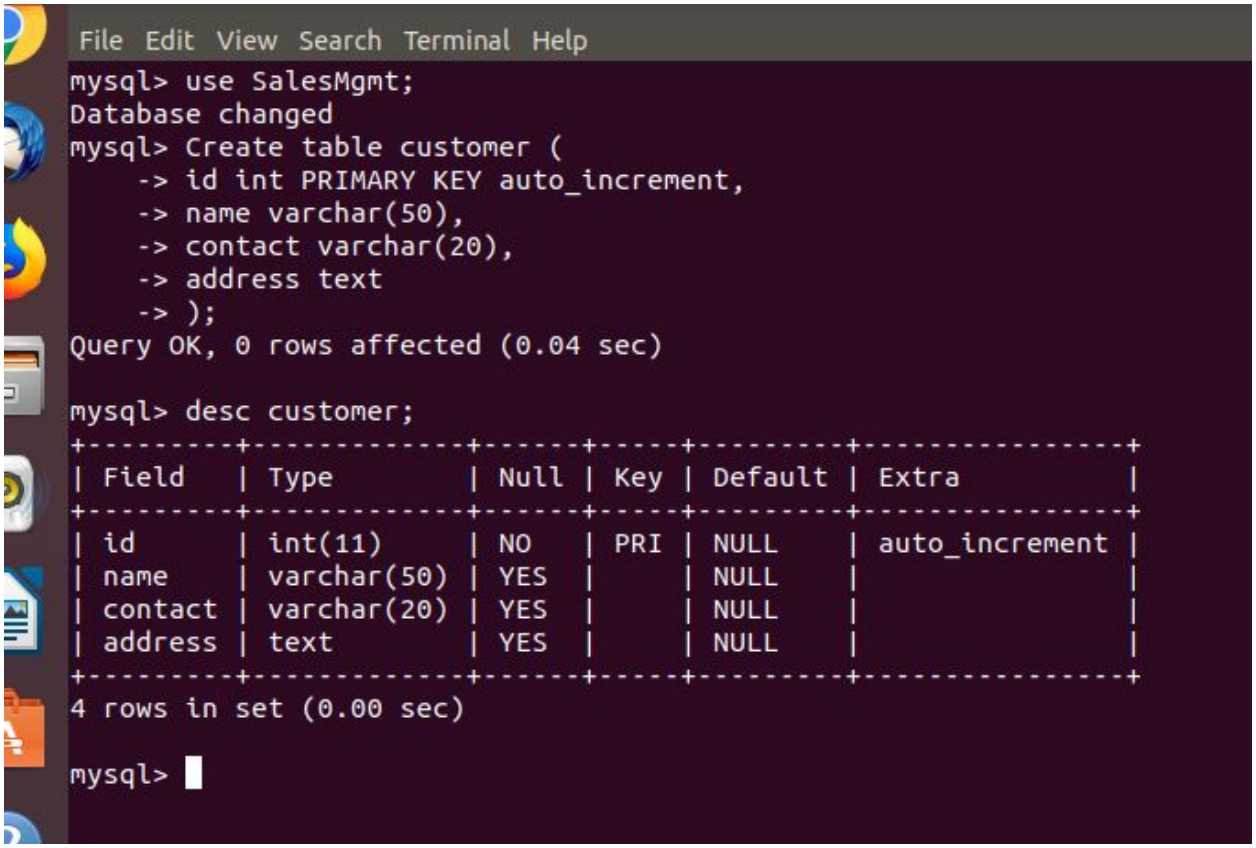


Question2: Design Schema.

There will be three tables -
1. customer
2. sales_person
3. orders

customer (one to many) orders
orders (many to one) sales_person

Question3: Create tables.



```
File  Edit  View  Search  Terminal  Help
mysql> use SalesMgmt;
Database changed
mysql> Create table customer (
    -> id int PRIMARY KEY auto_increment,
    -> name varchar(50),
    -> contact varchar(20),
    -> address text
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> desc customer;
+---------+-------------+------+-----+---------+----------------+
| Field   | Type        | Null | Key | Default | Extra          |
+---------+-------------+------+-----+---------+----------------+
| id      | int(11)     | NO   | PRI | NULL    | auto_increment |
| name    | varchar(50) | YES  |     | NULL    |                |
| contact | varchar(20) | YES  |     | NULL    |                |
| address | text        | YES  |     | NULL    |                |
+---------+-------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql>
```

```
mysql> Create table sales_person (
    -> id int PRIMARY KEY auto_increment,
    -> name varchar(50),
    -> contact varchar(20),
    -> address text
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> desc sales_person;
+---------+-------------+------+-----+---------+----------------+
| Field   | Type        | Null | Key | Default | Extra          |
+---------+-------------+------+-----+---------+----------------+
| id      | int(11)     | NO   | PRI | NULL    | auto_increment |
| name    | varchar(50) | YES  |     | NULL    |                |
| contact | varchar(20) | YES  |     | NULL    |                |
| address | text        | YES  |     | NULL    |                |
+---------+-------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql>
```

```
mysql> Create table orders (
    -> id int PRIMARY KEY auto_increment,
    -> quantity int,
    -> price int,
    -> customerId int,
    -> salesPersonId int,
    -> FOREIGN KEY (customerId) REFERENCES customer(id),
    -> FOREIGN KEY (salesPersonId) REFERENCES sales_person(id)
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> desc orders;
+---------------+---------+------+-----+---------+----------------+
| Field         | Type    | Null | Key | Default | Extra          |
+---------------+---------+------+-----+---------+----------------+
| id            | int(11) | NO   | PRI | NULL    | auto_increment |
| quantity      | int(11) | YES  |     | NULL    |                |
| price         | int(11) | YES  |     | NULL    |                |
| customerId    | int(11) | YES  | MUL | NULL    |                |
| salesPersonId | int(11) | YES  | MUL | NULL    |                |
+---------------+---------+------+-----+---------+----------------+
5 rows in set (0.00 sec)

mysql>
```

Question4: Insert sample data.

```
mysql> INSERT INTO
    ->     customer(name, contact, address)
    -> VALUES
    ->     ('Megha','9910123456','noida'),
    ->     ('Mansi','9920253456','delhi'),
    ->     ('Neetu','9930345456','gurgaon');
Query OK, 3 rows affected (0.03 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> select * from customer;
+----+-------+------------+---------+
| id | name  | contact    | address |
+----+-------+------------+---------+
|  1 | Megha | 9910123456 | noida   |
|  2 | Mansi | 9920253456 | delhi   |
|  3 | Neetu | 9930345456 | gurgaon |
+----+-------+------------+---------+
3 rows in set (0.00 sec)

mysql>
```

```
mysql> INSERT INTO
    ->     sales_person(name, contact, address)
    -> VALUES
    ->     ('Mohit','8010123456','noida'),
    ->     ('Karthick','8020253456','delhi'),
    ->     ('Dhanendra','8030345456','noida');
Query OK, 3 rows affected (0.03 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> select * from sales_person;
+----+-----------+------------+---------+
| id | name      | contact    | address |
+----+-----------+------------+---------+
|  1 | Mohit     | 8010123456 | noida   |
|  2 | Karthick  | 8020253456 | delhi   |
|  3 | Dhanendra | 8030345456 | noida   |
+----+-----------+------------+---------+
3 rows in set (0.00 sec)

mysql>
```

```
mysql> INSERT INTO
    ->     orders(quantity, price, customerId, salesPersonId)
    -> VALUES
    ->     (10, 800, 1, 1),
    ->     (20, 350, 1, 2),
    ->     (2, 8000, 2, 1),
    ->     (5, 5000, 3, 3),
    ->     (7, 700, 3, 2),
    ->     (3, 300, 1, 2),
    ->     (1, 600, 1, 3);
Query OK, 7 rows affected (0.04 sec)
Records: 7  Duplicates: 0  Warnings: 0

mysql> select * from orders;
+----+----------+-------+------------+---------------+
| id | quantity | price | customerId | salesPersonId |
+----+----------+-------+------------+---------------+
|  1 |       10 |   800 |          1 |             1 |
|  2 |       20 |   350 |          1 |             2 |
|  3 |        2 |  8000 |          2 |             1 |
|  4 |        5 |  5000 |          3 |             3 |
|  5 |        7 |   700 |          3 |             2 |
|  6 |        3 |   300 |          1 |             2 |
|  7 |        1 |   600 |          1 |             3 |
+----+----------+-------+------------+---------------+
7 rows in set (0.00 sec)

mysql>
```

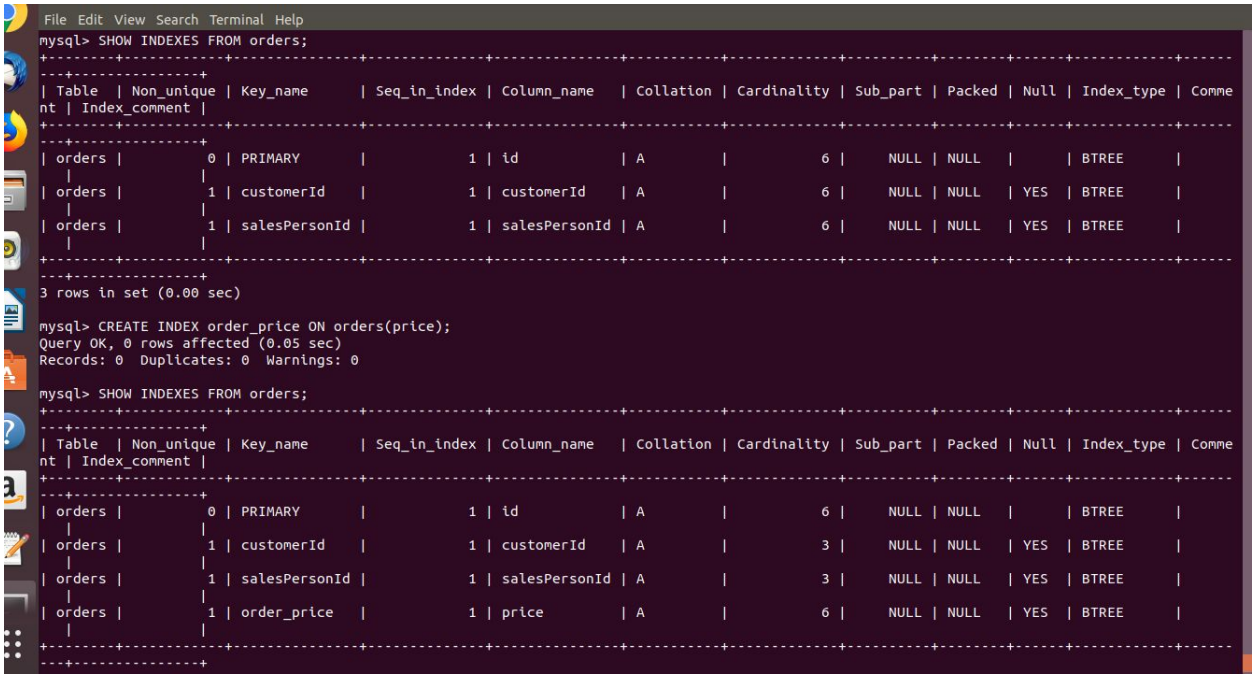
Question5: Find the sales person have multiple orders.

```
mysql> SELECT salesPersonId, name, contact, address, COUNT(salesPersonId) FROM
    -> (SELECT o.id orderId, salesPersonId, s.name, s.contact, s.address
    -> FROM orders as o LEFT JOIN sales_person as s ON o.salesPersonId = s.id) as a
    -> GROUP BY salesPersonId
    -> HAVING COUNT(salesPersonId) > 1;
+---------------+----------+------------+---------+----------------------+
| salesPersonId | name     | contact    | address | COUNT(salesPersonId) |
+---------------+----------+------------+---------+----------------------+
|             1 | Mohit    | 8010123456 | noida   |                    2 |
|             2 | Karthick | 8020253456 | delhi   |                    3 |
+---------------+----------+------------+---------+----------------------+
2 rows in set (0.00 sec)

mysql>
```

Question6: Find the all sales person details along with order details.

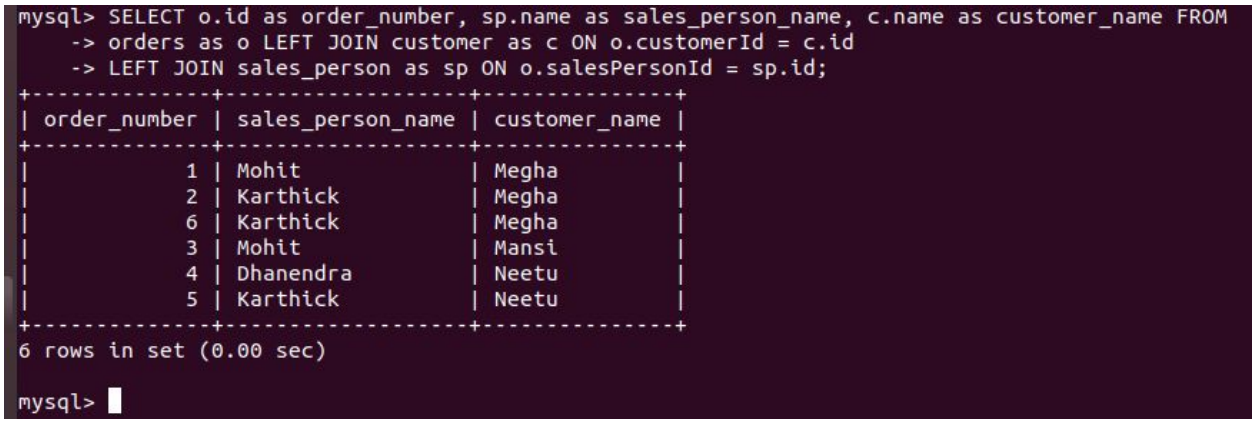
```
mysql> SELECT * FROM
    -> orders as o RIGHT JOIN sales_person as sp
    -> ON o.salesPersonId = sp.id;
+------+----------+-------+------------+---------------+----+----------+------------+---------+
| id   | quantity | price | customerId | salesPersonId | id | name     | contact    | address |
+------+----------+-------+------------+---------------+----+----------+------------+---------+
|    1 |       10 |   800 |          1 |             1 |  1 | Mohit    | 8010123456 | noida   |
|    3 |        2 |  8000 |          2 |             1 |  1 | Mohit    | 8010123456 | noida   |
|    2 |       20 |   350 |          1 |             2 |  2 | Karthick | 8020253456 | delhi   |
|    5 |        7 |   700 |          3 |             2 |  2 | Karthick | 8020253456 | delhi   |
|    6 |        3 |   300 |          1 |             2 |  2 | Karthick | 8020253456 | delhi   |
|    4 |        5 |  5000 |          3 |             3 |  3 | Dhanendra| 8030345456 | noida   |
+------+----------+-------+------------+---------------+----+----------+------------+---------+
6 rows in set (0.00 sec)

mysql>
```

Question7: Create index.
Question8: How to show index on a table.
Ans - Q7 and Q8 in the same screenshot.



```
File  Edit  View  Search  Terminal  Help
mysql> SHOW INDEXES 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 | id           | A         |           6 |     NULL | NULL   |      | BTREE      |         |               |
| orders |          1 | customerId   |            1 | customerId   | A         |           6 |     NULL | NULL   | YES  | BTREE      |         |               |
| orders |          1 | salesPersonId |           1 | salesPersonId | A        |           6 |     NULL | NULL   | YES  | BTREE      |         |               |
+--------+------------+--------------+--------------+--------------+-----------+-------------+----------+--------+------+------------+---------+---------------+
3 rows in set (0.00 sec)

mysql> CREATE INDEX order_price ON orders(price);
Query OK, 0 rows affected (0.05 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SHOW INDEXES 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 | id           | A         |           6 |     NULL | NULL   |      | BTREE      |         |               |
| orders |          1 | customerId   |            1 | customerId   | A         |           3 |     NULL | NULL   | YES  | BTREE      |         |               |
| orders |          1 | salesPersonId |           1 | salesPersonId | A        |           3 |     NULL | NULL   | YES  | BTREE      |         |               |
| orders |          1 | order_price  |            1 | price        | A         |           6 |     NULL | NULL   | YES  | BTREE      |         |               |
+--------+------------+--------------+--------------+--------------+-----------+-------------+----------+--------+------+------------+---------+---------------+
```

Question9: Find the order number, sale person name, along with the customer to whom that order belongs to.



```
mysql> SELECT o.id as order_number, sp.name as sales_person_name, c.name as customer_name FROM
    -> orders as o LEFT JOIN customer as c ON o.customerId = c.id
    -> LEFT JOIN sales_person as sp ON o.salesPersonId = sp.id;
+--------------+-------------------+---------------+
| order_number | sales_person_name | customer_name |
+--------------+-------------------+---------------+
|            1 | Mohit             | Megha         |
|            2 | Karthick          | Megha         |
|            6 | Karthick          | Megha         |
|            3 | Mohit             | Mansi         |
|            4 | Dhanendra         | Neetu         |
|            5 | Karthick          | Neetu         |
+--------------+-------------------+---------------+
6 rows in set (0.00 sec)

mysql>
```