Introduction To Databases

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.

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

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| bootcamp           |
| health             |
| mysql              |
| performance_schema |
| sales_mgt          |
| sys                |
+--------------------+
7 rows in set (0.01 sec)
```

2.Design Schema.

```
mysql> describe customer;
+------------+-------------+------+-----+---------+----------------+
| Field      | Type        | Null | Key | Default | Extra          |
+------------+-------------+------+-----+---------+----------------+
| id         | int(11)     | NO   | PRI | NULL    | auto_increment |
| name       | varchar(40) | YES  |     | NULL    |                |
| contact_no | varchar(30) | YES  |     | NULL    |                |
| address    | text        | YES  |     | NULL    |                |
+------------+-------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql> describe sales_person;
+------------+-------------+------+-----+---------+----------------+
| Field      | Type        | Null | Key | Default | Extra          |
+------------+-------------+------+-----+---------+----------------+
| id         | int(11)     | NO   | PRI | NULL    | auto_increment |
| name       | varchar(40) | YES  |     | NULL    |                |
| contact_no | varchar(30) | YES  |     | NULL    |                |
| address    | text        | YES  |     | NULL    |                |
+------------+-------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

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

3.Create tables.

```
mysql> use sales_mgt;
Database changed
```

To create table customer:

```
mysql> create table customer(id int primary key auto_increment, name varch
ar(40), contact_no varchar(30), address text);
Query OK, 0 rows affected (0.03 sec)

mysql> desc customer;
+------------+-------------+------+-----+---------+----------------+
| Field      | Type        | Null | Key | Default | Extra          |
+------------+-------------+------+-----+---------+----------------+
| id         | int(11)     | NO   | PRI | NULL    | auto_increment |
| name       | varchar(40) | YES  |     | NULL    |                |
| contact_no | varchar(30) | YES  |     | NULL    |                |
| address    | text        | YES  |     | NULL    |                |
+------------+-------------+------+-----+---------+----------------+
4 rows in set (0.01 sec)
```

To create table sales_person:

```
mysql> create table sales_person(
    -> id int primary key auto_increment,
    -> name varchar(40),
    -> contact_no varchar(30),
    -> address text);
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> desc sales_person;
+------------+-------------+------+-----+---------+----------------+
| Field      | Type        | Null | Key | Default | Extra          |
+------------+-------------+------+-----+---------+----------------+
| id         | int(11)     | NO   | PRI | NULL    | auto_increment |
| name       | varchar(40) | YES  |     | NULL    |                |
| contact_no | varchar(30) | YES  |     | NULL    |                |
| address    | text        | YES  |     | NULL    |                |
+------------+-------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

To create table orders:

```
mysql> create table orders(id int primary key auto_increment, quantity int
, price int, customerId int, sales_personId int, FOREIGN KEY (customerId)
REFERENCES customer(id), FOREIGN KEY (sales_personId) REFERENCES sales_per
son(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    |                |
| sales_personId | int(11) | YES  | MUL | NULL    |                |
+----------------+---------+------+-----+---------+----------------+
5 rows in set (0.01 sec)
```

4.Insert sample data.

```
mysql> INSERT INTO customer(name,contact_no,address)
    -> VALUES
    -> ('ruhi',9546230123,'delhi'),
    -> ('rashi',9532231456,'delhi');
Query OK, 2 rows affected (0.01 sec)
```

```
mysql> select * from customer;
+----+-------+------------+---------+
| id | name  | contact_no | address |
+----+-------+------------+---------+
|  1 | ruhi  | 9546230123 | delhi   |
|  2 | rashi | 9532231456 | delhi   |
|  3 | sakhi | 9411237689 | noida   |
+----+-------+------------+---------+
3 rows in set (0.00 sec)
```

```
mysql> INSERT INTO sales_person(name,contact_no,address)
    -> VALUES
    -> ('steve',9766091236,'noida'),
    -> ('john',8834215679, 'delhi'),
    -> ('mohit', 8562314578,'noida');
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> select * from sales_person;
+----+-------+------------+---------+
| id | name  | contact_no | address |
+----+-------+------------+---------+
|  1 | steve | 9766091236 | noida   |
|  2 | john  | 8834215679 | delhi   |
|  3 | mohit | 8562314578 | noida   |
+----+-------+------------+---------+
3 rows in set (0.00 sec)
```

```
mysql> INSERT INTO orders(quantity,price,customerId,sales_personId)
    -> VALUES
    -> (2,400,1,1),
    -> (7,300,1,2),
    -> (10,800,2,1),
    -> (10,1000,3,2),
    -> (5,3500,3,3),
    -> (12,4000,1,2),
    -> (3,5000,1,3);
Query OK, 7 rows affected (0.03 sec)
Records: 7  Duplicates: 0  Warnings: 0

mysql> select * from orders;
+----+----------+-------+------------+----------------+
| id | quantity | price | customerId | sales_personId |
+----+----------+-------+------------+----------------+
|  1 |        2 |   400 |          1 |              1 |
|  2 |        7 |   300 |          1 |              2 |
|  3 |       10 |   800 |          2 |              1 |
|  4 |       10 |  1000 |          3 |              2 |
|  5 |        5 |  3500 |          3 |              3 |
|  6 |       12 |  4000 |          1 |              2 |
|  7 |        3 |  5000 |          1 |              3 |
+----+----------+-------+------------+----------------+
7 rows in set (0.00 sec)
```

5.Find the sales person have multiple orders.

```
mysql> mysql> select salesid,salesname,contact_no,address,COUNT(salesid) from
o.id as orderid,s.id as salesid,s.name as salesname,s.contact_no,s.address fro
m orders as o left join sales_person as s on o.sales_personId=s.id) as a GROUP
 BY salesid HAVING COUNT(salesid)>1;
+---------+-----------+------------+---------+----------------+
| salesid | salesname | contact_no | address | COUNT(salesid) |
+---------+-----------+------------+---------+----------------+
|       1 | steve     | 9766091236 | noida   |              2 |
|       2 | john      | 8834215679 | delhi   |              3 |
|       3 | mohit     | 8562314578 | noida   |              2 |
+---------+-----------+------------+---------+----------------+
3 rows in set (0.00 sec)
```

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

```
mysql> SELECT s.name,o.id as orderid FROM sales_person as s LEFT JOIN orders as o ON s.id=o.id;
+-------+---------+
| name  | orderid |
+-------+---------+
| steve |       1 |
| john  |       2 |
| mohit |       3 |
+-------+---------+
3 rows in set (0.00 sec)
```

7.Question7: Create index.
8: How to show index on a table.
Ans.7 and Ans.8 are in the same screenshot.

```
mysql> SHOW INDEXES from orders;
+--------+------------+--------------+-------------+--------------+----------+------------+---------+--------+------+------------+----
-----+--------------+
| Table  | Non_unique | Key_name     | Seq_in_index | Column_name  | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Com
ment | Index_comment |
+--------+------------+--------------+-------------+--------------+----------+------------+---------+--------+------+------------+----
-----+--------------+
| orders |          0 | PRIMARY      |           1 | id           | A         |           7 |     NULL | NULL   |      | BTREE      |
     |               |
| orders |          1 | customerId   |           1 | customerId   | A         |           7 |     NULL | NULL   | YES  | BTREE      |
     |               |
| orders |          1 | sales_personId |           1 | sales_personId | A         |           7 |     NULL | NULL   | YES  | BTREE      |
     |               |
+--------+------------+--------------+-------------+--------------+----------+------------+---------+--------+------+------------+----
-----+--------------+
3 rows in set (0.00 sec)
```

```
mysql> SHOW INDEXES from orders;
+--------+------------+---------------+-------------+---------------+----------+------------+---------+--------+------+------------+---
-----+--------------+
| Table  | Non_unique | Key_name      | Seq_in_index | Column_name   | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Com
ment | Index_comment |
+--------+------------+---------------+-------------+---------------+----------+------------+---------+--------+------+------------+---
-----+--------------+
| orders |          0 | PRIMARY       |           1 | id            | A         |           7 |     NULL | NULL   |      | BTREE      |
     |              |
| orders |          1 | customerId    |           1 | customerId    | A         |           3 |     NULL | NULL   | YES  | BTREE      |
     |              |
| orders |          1 | sales_personId |           1 | sales_personId | A         |           3 |     NULL | NULL   | YES  | BTREE      |
     |              |
| orders |          1 | order_quantity |           1 | quantity      | A         |           6 |     NULL | NULL   | YES  | BTREE      |
     |              |
+--------+------------+---------------+-------------+---------------+----------+------------+---------+--------+------+------------+---
-----+--------------+
4 rows in set (0.00 sec)
```

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

```
mysql> SELECT o.id as order_no,s.name as sales_person_name,c.name as customer_name
 FROM orders as o LEFT JOIN sales_person as s ON o.sales_personId=s.id LEFT JOIN c
ustomer as c ON o.customerId = c.id;
+----------+--------------------+---------------+
| order_no | sales_person_name | customer_name |
+----------+--------------------+---------------+
|        1 | steve              | ruhi          |
|        3 | steve              | rashi         |
|        2 | john               | ruhi          |
|        4 | john               | sakhi         |
|        6 | john               | ruhi          |
|        5 | mohit              | sakhi         |
|        7 | mohit              | ruhi          |
+----------+--------------------+---------------+
7 rows in set (0.00 sec)
```