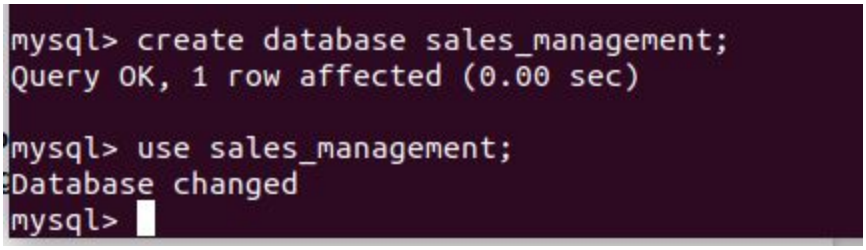
Problem Statement: There can be multiple customers, who can place multiple orders on the site. Now a sales person can handle these orders will distribute into multiple sales persons (One order will be assign to one salesperson only). So a sales person can have multiple orders of multiple customers

1. **Create Database**



2. **Design Schema**

   Relationship between :

   Customers to orders- one to many

   Salesperson and orders- one to many

```
mysql> desc orders;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| o_id       | varchar(3)  | NO   | PRI | NULL    |       |
| cid        | int(3)      | YES  | MUL | NULL    |       |
| order_name | varchar(25) | YES  |     | NULL    |       |
| quantity   | int(5)      | YES  |     | NULL    |       |
| price      | double(9,2) | YES  |     | NULL    |       |
| sales_id   | int(4)      | YES  | MUL | NULL    |       |
+------------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)

mysql>
```

```
mysql> desc salesperson;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| sales_id     | int(4)      | NO   | PRI | NULL    |       |
| sales_person | varchar(23) | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

```
mysql> desc customers;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| cid       | int(3)      | NO   | PRI | NULL    |       |
| cust_name | varchar(25) | YES  |     | NULL    |       |
| address   | varchar(20) | YES  |     | NULL    |       |
| phone     | int(10)     | NO   |     | NULL    |       |
| sales_id  | int(4)      | YES  | MUL | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

3. **Create tables**

```
mysql> use sales_management;
Database changed
mysql> create table customers(cid int(3) primary key, cust_name varchar(25), add
ress varchar(20),phone int(10) not null, sales_id int(4));
Query OK, 0 rows affected (0.39 sec)

mysql>
```

create table orders(o_id varchar(3) primary key,cid int(3), order_name varchar(25), quantity int(5), price double(9,2), sales_id int(4));

create table salesperson(sales_id int(4) primary key, sales_person varchar(23));

```
mysql> create table orders(o_id varchar(3) primary key,cid int(3), order_name va
rchar(25), quantity int(5), price double(9,2), sales_id int(4));
Query OK, 0 rows affected (0.29 sec)

mysql> create table salesperson(sales_id int(4) primary key, sales_person varcha
r(23));
Query OK, 0 rows affected (0.38 sec)

mysql> alter table customers add foreign key(sales_id) references salesperson(sa
les_id);
Query OK, 0 rows affected (0.84 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table orders add foreign key(cid) references customers(cid);
Query OK, 0 rows affected (0.90 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table orders add foreign key(sales_id) references salesperson(sales
_id);
Query OK, 0 rows affected (1.14 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql>
```

4. **Insert sample data**

```
mysql> insert into salesperson values(101,'aarzu'),(102,'bosch'),(103,'charu');
Query OK, 3 rows affected (0.08 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> insert into customers values(1,'yukti','delhi',27383993,101),(2,'rishabh','hapur
', 8373638,101),(3,'shivam','meerut',37397393,102),(4,'sid','noida',3920383,103);
Query OK, 4 rows affected (0.10 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> insert into orders values('O1',1,'PEN',10,'40.0',101);
Query OK, 1 row affected (0.10 sec)
```

```
mysql> insert into orders values('O2',1,'GROCERY',1,'340.0',101),('O3',2,'CHOCOLATES',2
0,'394.34',101),('O4',2,'KITCHEN',5,'827.5',102),('O5',4,'DRINKS',3,'200.0',103);
Query OK, 4 rows affected (0.09 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql>
```

```
mysql> select * from orders;
+------+------+------------+----------+--------+----------+
| o_id | cid  | order_name | quantity | price  | sales_id |
+------+------+------------+----------+--------+----------+
| O1   |    1 | PEN        |       10 |  40.00 |      101 |
| O2   |    1 | GROCERY    |        1 | 340.00 |      101 |
| O3   |    2 | CHOCOLATES |       20 | 394.34 |      101 |
| O4   |    2 | KITCHEN    |        5 | 827.50 |      102 |
| O5   |    4 | DRINKS     |        3 | 200.00 |      103 |
+------+------+------------+----------+--------+----------+
5 rows in set (0.00 sec)

mysql> select * from customers;
+-----+-----------+---------+----------+----------+
| cid | cust_name | address | phone    | sales_id |
+-----+-----------+---------+----------+----------+
|   1 | yukti     | delhi   | 27383993 |      101 |
|   2 | rishabh   | hapur   |  8373638 |      101 |
|   3 | shivam    | meerut  | 37397393 |      102 |
|   4 | sid       | noida   |  3920383 |      103 |
+-----+-----------+---------+----------+----------+
4 rows in set (0.00 sec)

mysql> select * from salesperson;
+----------+--------------+
| sales_id | sales_person |
+----------+--------------+
|      101 | aarzu        |
|      102 | bosch        |
|      103 | charu        |
+----------+--------------+
3 rows in set (0.00 sec)
```

5. **Find the sales person have multiple orders.**

select salesperson.sales_id, sales_person from salesperson join orders on salesperson.sales_id=orders.sales_id group by sales_id having count(o_id)>1;

```
mysql> select salesperson.sales_id, sales_person from salesperson join orders on salesperson.sales_id=ord
ers.sales_id group by sales_id having count(o_id)>1;
+----------+--------------+
| sales_id | sales_person |
+----------+--------------+
|      101 | aarzu        |
+----------+--------------+
1 row in set (0.00 sec)

mysql>
```

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

```
mysql> select * from salesperson join orders on salesperson.sales_id=orders.sales_id;
+----------+--------------+------+------+------------+----------+--------+----------+
| sales_id | sales_person | o_id | cid  | order_name | quantity | price  | sales_id |
+----------+--------------+------+------+------------+----------+--------+----------+
|      101 | aarzu        | O1   |    1 | PEN        |       10 |  40.00 |      101 |
|      101 | aarzu        | O2   |    1 | GROCERY    |        1 | 340.00 |      101 |
|      101 | aarzu        | O3   |    2 | CHOCOLATES |       20 | 394.34 |      101 |
|      102 | bosch        | O4   |    2 | KITCHEN    |        5 | 827.50 |      102 |
|      103 | charu        | O5   |    4 | DRINKS     |        3 | 200.00 |      103 |
+----------+--------------+------+------+------------+----------+--------+----------+
5 rows in set (0.01 sec)

mysql>
```

7. **Create index**

```
mysql> alter table orders add INDEX order_index(o_id);
Query OK, 0 rows affected (0.41 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

8. **How to show index on a table**

```
mysql> show index from orders;
+--------+------------+-------------+--------------+-------------+-----------+---------
----+----------+--------+------+------------+---------+---------------+
| Table  | Non_unique | Key_name    | Seq_in_index | Column_name | Collation | Cardinal
ity | Sub_part | Packed | Null | Index_type | Comment | Index_comment |
+--------+------------+-------------+--------------+-------------+-----------+---------
----+----------+--------+------+------------+---------+---------------+
| orders |          0 | PRIMARY     |            1 | o_id        | A         |
  5 |     NULL | NULL   |      | BTREE      |         |               |
| orders |          1 | cid         |            1 | cid         | A         |
  3 |     NULL | NULL   | YES  | BTREE      |         |               |
| orders |          1 | sales_id    |            1 | sales_id    | A         |
  3 |     NULL | NULL   | YES  | BTREE      |         |               |
| orders |          1 | order_index |            1 | o_id        | A         |
  5 |     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**

```
mysql> select o_id, sales_person, cust_name from orders join customers on orders.cid=customers.c
id join salesperson on customers.sales_id = salesperson.sales_id;
+------+--------------+-----------+
| o_id | sales_person | cust_name |
+------+--------------+-----------+
| 01   | aarzu        | yukti     |
| 02   | aarzu        | yukti     |
| 03   | aarzu        | rishabh   |
| 04   | aarzu        | rishabh   |
| 05   | charu        | sid       |
+------+--------------+-----------+
5 rows in set (0.02 sec)

mysql>
```