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 assigned to one salesperson only). So a sales person can have multiple orders of multiple customers.

1. Create Database

Solution : - create database sales;

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

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| exercise           |
| health             |
| mysql              |
| performance_schema |
| sales              |
| sys                |
+--------------------+
7 rows in set (0.00 sec)

mysql>
```

2. Design Schema

Solution : -

1. desc customer;
2. desc salesperson;
3. desc orders;

```
mysql> select * from customer;
+----+----------+---------------+------+
| id | name     | address       | s_id |
+----+----------+---------------+------+
|  1 | Bhupesh  | Zolo Xavier's |    3 |
|  2 | Vipul    | Zolo Xavier's |    2 |
|  3 | Siddhant | Zolo Xavier's |    2 |
|  4 | Devansh  | Zolo Xavier's |    1 |
|  5 | Jay      | Zolo Xavier's |    4 |
+----+----------+---------------+------+
5 rows in set (0.01 sec)

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

mysql> desc orders;
+-------------+---------+------+-----+---------+----------------+
| Field       | Type    | Null | Key | Default | Extra          |
+-------------+---------+------+-----+---------+----------------+
| id          | int(11) | NO   | PRI | NULL    | auto_increment |
| customer_id | int(11) | YES  | MUL | NULL    |                |
| sales_id    | int(11) | YES  | MUL | NULL    |                |
| quantity    | int(11) | YES  |     | NULL    |                |
+-------------+---------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

3. Create tables

Solution : -

1. create table customer(id int primary key auto_increment,name varchar(40),address varchar(40),s_id int, foreign key(s_id));
2. create table salesperson(id int primary key auto_increment,name varchar(40),contact int);
3. create table orders(id int primary key auto_increment,customer_id int,sales_id int,quantity int,foreign key(customer_id)references customer(id),foreign key(sales_id)references salesperson(id));

```
mysql> create table customer(id int primary key auto_increment,name varchar(40),address varchar(40), s_id int,foreign key(s_id) references sal
esperson(id));
```

```
mysql> create table salesperson(id int primary key auto_increment,name varchar(40),contact int);
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> create table orders(id int primary key auto_increment,customer_id int,sales_id int,quantity int,foreign key(customer_id)references cust
omer(id),foreign key(sales_id)references salesperson(id));
Query OK, 0 rows affected (0.04 sec)

mysql> show tables;
+----------------+
| Tables_in_sales |
+----------------+
| customer       |
| orders         |
| salesperson    |
+----------------+
3 rows in set (0.00 sec)
```

4. Insert sample data

Solution : -

1. insert into customer(name,address,s_id) values(“Bhupesh”,”XYZ”,1);
2. insert into salesperson(name,contact) values(“Siddhant”,0987654321);
3. insert into orders(customer_id,sales_id,quantity) values(1,2,10);

```
mysql> insert into customer(name,address,s_id) values("Bhupesh","Zolo Xavier's",4);
Query OK, 1 row affected (0.00 sec)

mysql> insert into customer(name,address,s_id) values("Bhupesh","Zolo Xavier's",1);
Query OK, 1 row affected (0.01 sec)

mysql> insert into customer(name,address,s_id) values("Bhupesh","Zolo Xavier's",2);
Query OK, 1 row affected (0.01 sec)

mysql> insert into customer(name,address,s_id) values("Bhupesh","Zolo Xavier's",3);
Query OK, 1 row affected (0.02 sec)
```

```
mysql> insert into salesperson(name,contact) values("Devansh",1234567890);
Query OK, 1 row affected (0.01 sec)

mysql> insert into salesperson(name,contact) values("Vipul",098765421);
Query OK, 1 row affected (0.01 sec)

mysql> insert into salesperson(name,contact) values("Siddhant",0912345678);
Query OK, 1 row affected (0.01 sec)

mysql> insert into salesperson(name,contact) values("Jay",0912345678);
Query OK, 1 row affected (0.01 sec)
```

```
mysql> insert into orders(customer_id,sales_id,quantity) values(1,1,21);
Query OK, 1 row affected (0.01 sec)

mysql> insert into orders(customer_id,sales_id,quantity) values(3,1,21);
Query OK, 1 row affected (0.02 sec)

mysql> insert into orders(customer_id,sales_id,quantity) values(3,4,21);
Query OK, 1 row affected (0.00 sec)

mysql> insert into orders(customer_id,sales_id,quantity) values(4,3,21);
Query OK, 1 row affected (0.01 sec)

mysql> insert into orders(customer_id,sales_id,quantity) values(5,3,21);
Query OK, 1 row affected (0.01 sec)
```

5. Find the sales person have multiple orders.

Solution : - select name ,contact, count(orders.sales_id) as totalOrders from salesperson join orders on (orders.sales_id=salesperson.id) group by orders.sales_id having count(orders.sales_id)>1;

```
mysql> select name ,contact, count(orders.sales_id) as totalOrders from salesperson join orders on (orders.sales_id=salesperson.id) group by o
rders.sales_id having count(orders.sales_id)>1;
+----------+------------+-------------+
| name     | contact    | totalOrders |
+----------+------------+-------------+
| Devansh  | 1234567890 |           3 |
| Siddhant |  912345678 |           2 |
+----------+------------+-------------+
2 rows in set (0.00 sec)
```

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

Solution : - select * from salesperson left outer join orders on salesperson.id=orders.sales_id;

```
mysql> select * from salesperson left outer join orders on salesperson.id=orders.sales_id;
+----+----------+------------+------+-------------+----------+----------+
| id | name     | contact    | id   | customer_id | sales_id | quantity |
+----+----------+------------+------+-------------+----------+----------+
|  1 | Devansh  | 1234567890 |    1 |           2 |        1 |       21 |
|  1 | Devansh  | 1234567890 |    2 |           1 |        1 |       21 |
|  1 | Devansh  | 1234567890 |    3 |           3 |        1 |       21 |
|  2 | Vipul    |   98765421 | NULL |        NULL |     NULL |     NULL |
|  3 | Siddhant |  912345678 |    5 |           4 |        3 |       21 |
|  3 | Siddhant |  912345678 |    6 |           5 |        3 |       21 |
|  4 | Jay      |  912345678 |    4 |           3 |        4 |       21 |
+----+----------+------------+------+-------------+----------+----------+
7 rows in set (0.00 sec)

mysql>
```

7. Create index

Solution : - create index sales on orders(id);

```
mysql> create index sales on orders(id);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

8. How to show index on a table

Solution : - show index from orders;

```
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 | id          | A         |           6 |     NULL | NULL   |      | BTREE      |         |
               |
| orders |          1 | customer_id |            1 | customer_id | A         |           5 |     NULL | NULL   | YES  | BTREE      |         |
               |
| orders |          1 | sales_id   |            1 | sales_id    | A         |           3 |     NULL | NULL   | YES  | BTREE      |         |
               |
| orders |          1 | sales      |            1 | id          | A         |           6 |     NULL | NULL   |      | BTREE      |         |
               |
+--------+------------+------------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+
---------------+
4 rows in set (0.00 sec)

mysql>
```

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

Solution : - select o.id as "Order No", s.name as "Salesperson name", c.* from orders o left join salesperson s on s.id=o.sales_id left join customer c on o.customer_id=c.id;

```
mysql> select o.id as "Order No", s.name as "Salesperson name", c.* from orders o left join salesperson s on s.id=o.sales_id left join custome
r c on o.customer_id=c.id;
+----------+-----------------+------+----------+--------------+------+
| Order No | Salesperson name | id   | name     | address      | s_id |
+----------+-----------------+------+----------+--------------+------+
|        1 | Devansh         |    2 | Vipul    | Zolo Xavier's |    2 |
|        2 | Devansh         |    1 | Bhupesh  | Zolo Xavier's |    3 |
|        3 | Devansh         |    3 | Siddhant | Zolo Xavier's |    2 |
|        5 | Siddhant        |    4 | Devansh  | Zolo Xavier's |    1 |
|        6 | Siddhant        |    5 | Jay      | Zolo Xavier's |    4 |
|        4 | Jay             |    3 | Siddhant | Zolo Xavier's |    2 |
+----------+-----------------+------+----------+--------------+------+
6 rows in set (0.00 sec)
```