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

Q1. Create Database

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

mysql> use t_db;
Database changed
```

Q2. Design Schema

```
mysql> desc customer;
+------------+-------------+------+-----+---------+----------------+
| Field      | Type        | Null | Key | Default | Extra          |
+------------+-------------+------+-----+---------+----------------+
| cust_id    | int(11)     | NO   | PRI | NULL    | auto_increment |
| cust_name  | varchar(10) | YES  |     | NULL    |                |
| cust_phone | bigint(20)  | YES  |     | NULL    |                |
| cust_email | varchar(10) | YES  |     | NULL    |                |
+------------+-------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql> desc salesman;
+---------------+-------------+------+-----+---------+----------------+
| Field         | Type        | Null | Key | Default | Extra          |
+---------------+-------------+------+-----+---------+----------------+
| salesman_id   | int(11)     | NO   | PRI | NULL    | auto_increment |
| salesman_name | varchar(10) | YES  | MUL | NULL    |                |
+---------------+-------------+------+-----+---------+----------------+
2 rows in set (0.00 sec)

mysql> desc orders;
+----------------+----------+------+-----+---------+----------------+
| Field          | Type     | Null | Key | Default | Extra          |
+----------------+----------+------+-----+---------+----------------+
| order_id       | int(11)  | NO   | PRI | NULL    | auto_increment |
| order_date     | datetime | YES  |     | NULL    |                |
| order_sales_id | int(11)  | YES  | MUL | NULL    |                |
| order_cust_id  | int(11)  | YES  | MUL | NULL    |                |
+----------------+----------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql>
```

Q3. Create tables

```
ERROR 1051 (42S02): Unknown table 't_db.orders'
mysql> create table salesman(salesman_id int auto_increment primary key,salesman_name varchar);
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 ')' at line 1
mysql> create table salesman(salesman_id int auto_increment primary key,salesman_name varchar(10));
Query OK, 0 rows affected (0.62 sec)

mysql> create table customer(cust_id int auto_increment primary key,cust_name varchar(10),cust_phone bigint,cust_email varchar(10));
Query OK, 0 rows affected (0.30 sec)

mysql> create table orders(order_id int auto_increment primary key,order_date datetime,order_sales_id int,order_cust_id int,foreign key (order
_sales_id) references salesman(salesman_id), foreign key (order_cust_id) references customer(customer_id));
ERROR 1215 (HY000): Cannot add foreign key constraint
mysql> create table orders(order_id int auto_increment primary key,order_date datetime,order_sales_id int,order_cust_id int,foreign key (order
_sales_id) references salesman(salesman_id), foreign key (order_cust_id) references customer(cust_id));
Query OK, 0 rows affected (0.34 sec)
```

Q4. Insert sample data

```
mysql> Insert into salesman values(1,'Henry');
Query OK, 1 row affected (0.06 sec)

mysql> Insert into customer values(1001,'Tushar',9718900520,'tushar.bansal@tothenew.com');
ERROR 1406 (22001): Data too long for column 'cust_email' at row 1
mysql> Insert into customer values(1001,'Tushar',9718900520,'tu@.com');
Query OK, 1 row affected (0.06 sec)

mysql> Insert into customer values(1002,'sam',971890644,'bv@.com');
Query OK, 1 row affected (0.05 sec)

mysql> Insert into customer values(1003,'Harry',9569890644,'bvrd@.com');
Query OK, 1 row affected (0.03 sec)
```

```
mysql> select * from orders;
+----------+---------------------+----------------+----------------+
| order_id | order_date          | order_sales_id | order_cust_id |
+----------+---------------------+----------------+----------------+
|        1 | 2020-02-06 23:02:05 |              2 |          1003 |
|        2 | 2020-02-06 22:59:57 |              4 |          1003 |
|        3 | 2020-02-06 23:00:17 |              2 |          1003 |
|      101 | 2020-02-06 22:59:04 |              1 |          1001 |
+----------+---------------------+----------------+----------------+
4 rows in set (0.00 sec)

mysql> select * from customer;
+---------+-----------+------------+------------+
| cust_id | cust_name | cust_phone | cust_email |
+---------+-----------+------------+------------+
|    1001 | Tushar    | 9718900520 | tu@.com    |
|    1002 | sam       |  971890644 | bv@.com    |
|    1003 | Harry     | 9569890644 | bvrd@.com  |
|    1004 | Harman    | 9564890644 | brd@.com   |
+---------+-----------+------------+------------+
4 rows in set (0.00 sec)

mysql> select * from salesman;
+-------------+---------------+
| salesman_id | salesman_name |
+-------------+---------------+
|           1 | Henry         |
|           2 | Swastik       |
|           3 | Ankit         |
|           4 | Charu         |
|           5 | Dheeraj       |
+-------------+---------------+
5 rows in set (0.00 sec)
```

Q5.Find the sales person have multiple orders.

```
mysql>
mysql> SELECT salesman_id,salesman_name FROM salesman a WHERE 1 < (SELECT COUNT(*) FROM customer inner join orders WHERE salesman_id=orders.or
der_sales_id);
+------------+--------------+
| salesman_id | salesman_name |
+------------+--------------+
|          4 | Charu        |
|          1 | Henry        |
|          2 | Swastik      |
+------------+--------------+
3 rows in set (0.00 sec)

mysql>
```

Q6.Find the all sales person details along with order details

```
mysql> select * from orders inner join salesman on orders.order_sales_id=salesman.salesman_id;
+----------+---------------------+---------------+--------------+------------+--------------+
| order_id | order_date          | order_sales_id | order_cust_id | salesman_id | salesman_name |
+----------+---------------------+---------------+--------------+------------+--------------+
|        1 | 2020-02-06 23:02:05 |             2 |          1003 |           2 | Swastik       |
|        2 | 2020-02-06 22:59:57 |             4 |          1003 |           4 | Charu         |
|        3 | 2020-02-06 23:00:17 |             2 |          1003 |           2 | Swastik       |
|      101 | 2020-02-06 22:59:04 |             1 |          1001 |           1 | Henry         |
+----------+---------------------+---------------+--------------+------------+--------------+
4 rows in set (0.00 sec)

mysql> create index tush_index on salesman(salesman_name);
Query OK, 0 rows affected (0.33 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Q7.Create index.

```
mysql> create index tush_index on salesman(salesman_name);
Query OK, 0 rows affected (0.33 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Q8. How to show index on a table

```
mysql> show index from salesman;
+----------+------------+-----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------
--+--------------+
| Table    | Non_unique | Key_name  | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Commen
t | Index_comment |
+----------+------------+-----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------
--+--------------+
| salesman |          0 | PRIMARY   |            1 | salesman_id | A         |           4 |     NULL | NULL   |      | BTREE      |
  |               |
| salesman |          1 | tush_index |           1 | salesman_name | A         |           5 |     NULL | NULL   | YES  | BTREE      |
  |               |
+----------+------------+-----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------
--+--------------+
2 rows in set (0.00 sec)

mysql> select * from orders inner join salesman inner join customer on orders.order_sales_id=salesman.salesman_id And orders.order_cust_id=cus
tomer.cust_id;
+----------+---------------------+--------------+--------------+------------+--------------+---------+-----------+------------+----------
--+
| order_id | order_date          | order_sales_id | order_cust_id | salesman_id | salesman_name | cust_id | cust_name | cust_phone | cust_emai
l |
+----------+---------------------+--------------+--------------+------------+--------------+---------+-----------+------------+----------
```

Q9.Find the order number, sale person name, along with the customer to whom that order belongs to.

```
mysql> select * from orders inner join salesman inner join customer on orders.order_sales_id=salesman.salesman_id And orders.order_cust_id=cus
tomer.cust_id;
+----------+---------------------+--------------+--------------+------------+--------------+---------+-----------+------------+----------
--+
| order_id | order_date          | order_sales_id | order_cust_id | salesman_id | salesman_name | cust_id | cust_name | cust_phone | cust_emai
l |
+----------+---------------------+--------------+--------------+------------+--------------+---------+-----------+------------+----------
--+
|        1 | 2020-02-06 23:02:05 |            2 |         1003 |          2 | Swastik      |    1003 | Harry     | 9569890644 | bvrd@.com
  |
|        2 | 2020-02-06 22:59:57 |            4 |         1003 |          4 | Charu        |    1003 | Harry     | 9569890644 | bvrd@.com
  |
|        3 | 2020-02-06 23:00:17 |            2 |         1003 |          2 | Swastik      |    1003 | Harry     | 9569890644 | bvrd@.com
  |
|      101 | 2020-02-06 22:59:04 |            1 |         1001 |          1 | Henry        |    1001 | Tushar    | 9718900520 | tu@.com
  |
+----------+---------------------+--------------+--------------+------------+--------------+---------+-----------+------------+----------
--+
4 rows in set (0.03 sec)
```

For getting only order_id , salesman_name,customer_name------>

```
mysql> select order_id,salesman_name,cust_name from orders inner join salesman inner join customer on orders.order_sales_id=salesman.salesman_
id And orders.order_cust_id=customer.cust_id;
+----------+--------------+-----------+
| order_id | salesman_name | cust_name |
+----------+--------------+-----------+
|        1 | Swastik      | Harry     |
|        2 | Charu        | Harry     |
|        3 | Swastik      | Harry     |
|      101 | Henry        | Tushar    |
+----------+--------------+-----------+
4 rows in set (0.00 sec)

mysql>
```