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Introduction to Database

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
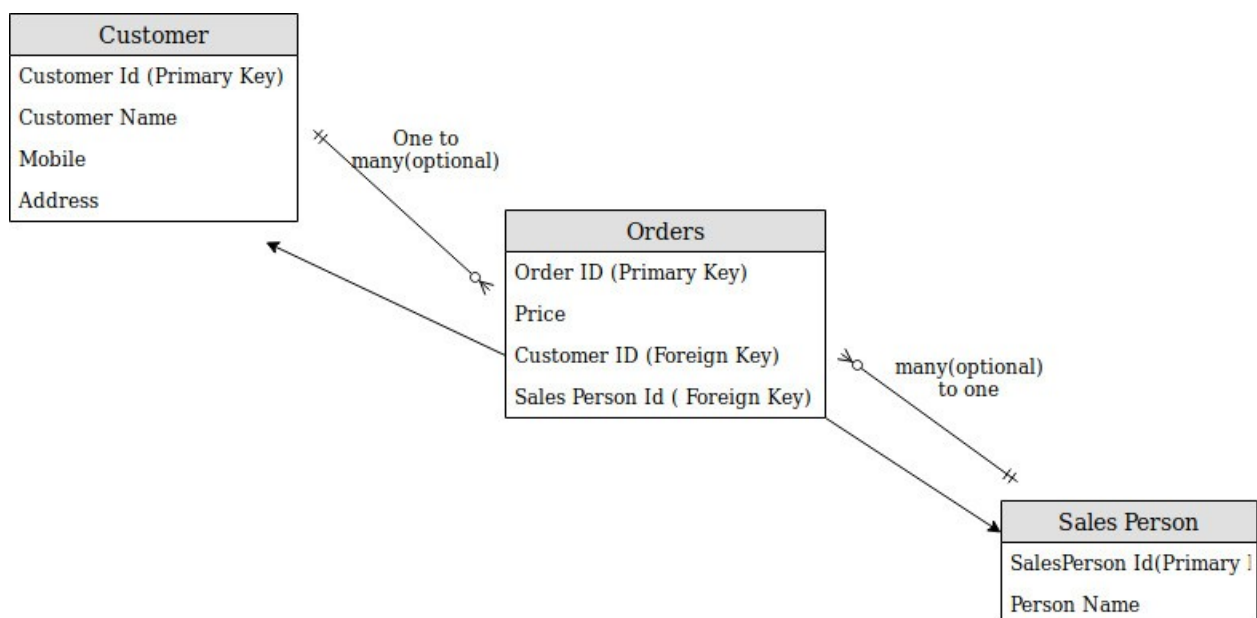
1. Create Database

```
mysql> create database exercise
    -> ;
Query OK, 1 row affected (0.01 sec)

mysql> use exercise
Database changed
mysql> select database()
    -> ;
+------------+
| database() |
+------------+
| exercise   |
+------------+
1 row in set (0.00 sec)

mysql>
```

2. Design Schema

Customer
Customer Id (Primary Key)
Customer Name
Mobile
Address

One to many(optional)

Orders
Order ID (Primary Key)
Price
Customer ID (Foreign Key)
Sales Person Id (Foreign Key)

many(optional) to one

Sales Person
SalesPerson Id(Primary
Person Name

3. Create tables

```
mysql> create table orders ( o_id int PRIMARY KEY, s_id int NOT NULL, c_id int(2
0) NOT NULL, o_name varchar(50),FOREIGN KEY (c_id) REFERENCES customer(cust_id),
 FOREIGN KEY (s_id) REFERENCES sellers(s_id) );
Query OK, 0 rows affected (0.73 sec)

mysql>
```

```
mysql> desc customer;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| cust_id   | int(20)     | NO   | PRI | NULL    |       |
| cust_name | char(50)    | YES  |     | NULL    |       |
| mobile_no | bigint(20)  | YES  |     | NULL    |       |
| address   | varchar(50) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> desc sellers;
+--------+----------+------+-----+---------+-------+
| Field  | Type     | Null | Key | Default | Extra |
+--------+----------+------+-----+---------+-------+
| s_id   | int(11)  | NO   | PRI | NULL    |       |
| s_name | char(50) | YES  |     | NULL    |       |
+--------+----------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> desc orders;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| o_id   | int(11)     | NO   | PRI | NULL    |       |
| s_id   | int(11)     | NO   | MUL | NULL    |       |
| c_id   | int(20)     | NO   | MUL | NULL    |       |
| o_name | varchar(50) | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

4. Insert sample data

```
mysql> insert into customer
    -> values(1,"Ritesh Singh",988888888,"a-32"),
    -> (2,"Vishal Sharma",720000000,"gzb"),
    -> (3,"Rishabh","999999999","greno");
Query OK, 3 rows affected (0.08 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> insert into sellers
    -> values(21,"Shiv"),
    -> (22,"Pratap");
Query OK, 2 rows affected (0.04 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> insert into orders
    -> values(1011,22,1,"cola"),
    -> (1012,21,2,"pepsi"),
    -> (1013,22,3,"cola");
Query OK, 3 rows affected (0.04 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql>
```

5. Find the sales person have multiple orders.

```
mysql> SELECT  o.s_id,   s.s_name, COUNT(*)  FROM  orders o,  sellers s  WHERE o.s
_id = s.s_id  GROUP BY  o.s_id  HAVING  COUNT(*) > 1;
+------+--------+----------+
| s_id | s_name | COUNT(*) |
+------+--------+----------+
|   22 | Pratap |        2 |
+------+--------+----------+
1 row in set (0.03 sec)
```

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

```
mysql> select * from sellers s, orders o  where o.s_id = s.s_id;
+------+--------+------+------+------+--------+
| s_id | s_name | o_id | s_id | c_id | o_name |
+------+--------+------+------+------+--------+
|   22 | Pratap | 1011 |   22 |    1 | cola   |
|   21 | Shiv   | 1012 |   21 |    2 | pepsi  |
|   22 | Pratap | 1013 |   22 |    3 | cola   |
+------+--------+------+------+------+--------+
3 rows in set (0.00 sec)
```

7. Create index

```
mysql> create index seller_id_index on orders(s_id);
Query OK, 0 rows affected (0.44 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 | Cardinality | Sub_part | Packed | Null
 | Index_type | Comment | Index_comment |
+--------+------------+----------------+--------------+-------------+-----------+-------------+----------+--------+------
-+------------+---------+---------------+
| orders |          0 | PRIMARY        |            1 | o_id        | A         |           3 |     NULL | NULL   |
 | BTREE      |         |               |
| orders |          1 | c_id           |            1 | c_id        | A         |           3 |     NULL | NULL   |
 | BTREE      |         |               |
| orders |          1 | seller_id_index |           1 | s_id        | A         |           2 |     NULL | NULL   |
 | BTREE      |         |               |
+--------+------------+----------------+--------------+-------------+-----------+-------------+----------+--------+------
-+------------+---------+---------------+
3 rows in set (0.00 sec)
```

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

```
mysql> select o.o_id AS order_number, s.s_name, c.cust_id, c.cust_name
from orders o, sellers s, customer c where o.s_id=s.s_id && o.c_id = c.
cust_id;
+--------------+--------+---------+---------------+
| order_number | s_name | cust_id | cust_name     |
+--------------+--------+---------+---------------+
|         1011 | Pratap |       1 | Ritesh Singh  |
|         1012 | Shiv   |       2 | Vishal Sharma |
|         1013 | Pratap |       3 | Rishabh       |
+--------------+--------+---------+---------------+
3 rows in set (0.00 sec)
```