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

Question: 1:
Create Database

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

Question: 2:
Design Schema

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

```
mysql> desc salesperson;
+-------+--------------+------+-----+---------+----------------+
| Field | Type         | Null | Key | Default | Extra          |
+-------+--------------+------+-----+---------+----------------+
| s_id  | bigint(20)   | NO   | PRI | NULL    | auto_increment |
| name  | varchar(100) | YES  |     | NULL    |                |
+-------+--------------+------+-----+---------+----------------+
2 rows in set (0.00 sec)
```

```
mysql> desc customer;
+-------+--------------+------+-----+---------+----------------+
| Field | Type         | Null | Key | Default | Extra          |
+-------+--------------+------+-----+---------+----------------+
| cname | varchar(100) | YES  |     | NULL    |                |
| c_id  | bigint(20)   | NO   | PRI | NULL    | auto_increment |
+-------+--------------+------+-----+---------+----------------+
2 rows in set (0.00 sec)
```

```
mysql> desc orders;
+-------+------------+------+-----+---------+----------------+
| Field | Type       | Null | Key | Default | Extra          |
+-------+------------+------+-----+---------+----------------+
| o_id  | bigint(20) | NO   | PRI | NULL    | auto_increment |
| s_id  | bigint(20) | YES  | MUL | NULL    |                |
| c_id  | bigint(20) | YES  | MUL | NULL    |                |
+-------+------------+------+-----+---------+----------------+
3 rows in set (0.01 sec)
```

Question: 3:
Create tables

```
mysql> create table salesperson(
    -> s_id bigint not null auto_increment,
    -> name varchar(100),
    -> primary key(s_id)
    -> );
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> create table customer(
    -> cname varchar(100),
    -> c_id bigint not null auto_increment,
    -> primary key(c_id)
    -> );
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> create table orders(
    -> o_id bigint not null auto_increment,
    ->
    -> s_id bigint,
    -> c_id bigint,
    -> primary key(o_id),
    -> foreign key(s_id) references salesperson(s_id),
    -> foreign key(c_id) references customer(c_id)
    -> );
Query OK, 0 rows affected (0.04 sec)
```

Question: 4:
Insert sample data

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

mysql> insert into salesperson(name) values("S_Y");
Query OK, 1 row affected (0.00 sec)

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

mysql> select * from salesperson
    -> ;
+------+------+
| s_id | name |
+------+------+
|    1 | S_X  |
|    2 | S_Y  |
|    3 | S_Z  |
+------+------+
3 rows in set (0.00 sec)
```

```
mysql> insert into customer(cname) values("C_A");
Query OK, 1 row affected (0.01 sec)

mysql> insert into customer(cname) values("C_B");
Query OK, 1 row affected (0.00 sec)

mysql> insert into customer(cname) values("C_C");
Query OK, 1 row affected (0.02 sec)

mysql> insert into customer(cname) values("C_D");
Query OK, 1 row affected (0.00 sec)

mysql> insert into customer(cname) values("C_E");
Query OK, 1 row affected (0.02 sec)

mysql> select * from customer;
+-------+------+
| cname | c_id |
+-------+------+
| C_A   |    1 |
| C_B   |    2 |
| C_C   |    3 |
| C_D   |    4 |
| C_E   |    5 |
+-------+------+
5 rows in set (0.00 sec)
```

```
mysql>
mysql> insert into orders(c_id,s_id) values(1,2);
Query OK, 1 row affected (0.01 sec)

mysql> insert into orders(c_id,s_id) values(2,2);
Query OK, 1 row affected (0.01 sec)

mysql> insert into orders(c_id,s_id) values(2,1);
Query OK, 1 row affected (0.02 sec)

mysql> insert into orders(c_id,s_id) values(5,3);
Query OK, 1 row affected (0.01 sec)

mysql> insert into orders(c_id,s_id) values(3,1);
Query OK, 1 row affected (0.01 sec)

mysql> insert into orders(c_id,s_id) values(4,2);
Query OK, 1 row affected (0.01 sec)

mysql> select * from orders;
+------+------+------+
| o_id | s_id | c_id |
+------+------+------+
|    1 |    2 |    1 |
|    2 |    2 |    2 |
|    3 |    1 |    2 |
|    4 |    3 |    5 |
|    5 |    1 |    3 |
|    6 |    2 |    4 |
+------+------+------+
6 rows in set (0.00 sec)
```

Question: 5:
Find the sales person have multiple orders.

```
mysql> select * from salesperson where s_id IN
    -> (select s_id from orders
    -> group by s_id
    -> having count(*)>1
    -> );
+------+------+
| s_id | name |
+------+------+
|    1 | S_X  |
|    2 | S_Y  |
+------+------+
2 rows in set (0.00 sec)
```

Question: 6:
Find the all sales person details along with order details

```
mysql> select * from salesperson
    -> join orders on
    -> salesperson.s_id = orders.s_id;
+------+------+------+------+------+
| s_id | name | o_id | s_id | c_id |
+------+------+------+------+------+
|    1 | S_X  |    3 |    1 |    2 |
|    1 | S_X  |    5 |    1 |    3 |
|    2 | S_Y  |    1 |    2 |    1 |
|    2 | S_Y  |    2 |    2 |    2 |
|    2 | S_Y  |    6 |    2 |    4 |
|    3 | S_Z  |    4 |    3 |    5 |
+------+------+------+------+------+
6 rows in set (0.00 sec)
```

Question: 7:
Create index

```
mysql> alter table orders add index s_id(s_id);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

Question: 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         |           6 | NULL     | NULL   |      | BTREE      |         |               |
| orders |          1 | c_id     |            1 | c_id        | A         |           5 | NULL     | NULL   | YES  | BTREE      |         |               |
| orders |          1 | s_id     |            1 | s_id        | A         |           3 | NULL     | NULL   | YES  | BTREE      |         |               |
+--------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+
3 rows in set (0.00 sec)
```

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

```
mysql> select o_id,name,cname from salesperson S join orders O
    -> on S.s_id = O.s_id
    -> join customer C on C.c_id=O.c_id;
+------+------+-------+
| o_id | name | cname |
+------+------+-------+
|    1 | S_Y  | C_A   |
|    2 | S_Y  | C_B   |
|    3 | S_X  | C_B   |
|    4 | S_Z  | C_E   |
|    5 | S_X  | C_C   |
|    6 | S_Y  | C_D   |
+------+------+-------+
6 rows in set (0.00 sec)
```