DBMS EXERCISE

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

```
Terminal
File  Edit  View  Search  Terminal  Help
Welcome
suraj@suraj:~ $ sudo mysql --defaults-file=/etc/mysql/debian.cnf
[sudo] password for suraj:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.29-0ubuntu0.18.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database exercise1
    -> ;
Query OK, 1 row affected (0.00 sec)

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| db_session         |
| exercise           |
| exercise1          |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
7 rows in set (0.00 sec)
```

2. Design Schema (i) Orders table Schema

```
mysql> desc orders;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| oid        | int(20)      | NO   | PRI | NULL    | auto_increment |
| order_item | varchar(200) | YES  |     | NULL    |                |
| cid        | int(20)      | YES  | MUL | NULL    |                |
| sid        | int(20)      | YES  | MUL | NULL    |                |
+------------+--------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql> show tables;
+---------------------+
```

(ii) Sales table schema

```
mysql> desc sales;
+-------+-------------+------+-----+---------+----------------+
| Field | Type        | Null | Key | Default | Extra          |
+-------+-------------+------+-----+---------+----------------+
| sid   | int(20)     | NO   | PRI | NULL    | auto_increment |
| sname | varchar(200)| YES  |     | NULL    |                |
+-------+-------------+------+-----+---------+----------------+
2 rows in set (0.00 sec)
```

(iii) Customers table schema

```
mysql> desc customers;
+-------+-------------+------+-----+---------+----------------+
| Field | Type        | Null | Key | Default | Extra          |
+-------+-------------+------+-----+---------+----------------+
| cid   | int(20)     | NO   | PRI | NULL    | auto_increment |
| cname | varchar(200)| YES  |     | NULL    |                |
+-------+-------------+------+-----+---------+----------------+
2 rows in set (0.02 sec)
```

3. Create tables

(i) Order Table

```
mysql> create table orders(oid int(20) PRIMARY KEY AUTO_INCREMENT,
    -> order_item varchar(200),
    -> cid int(20),foreign key(cid) REFERENCES customers(cid), sid int(20),foreign key(sid) REFERENCES sales(sid))
    -> ;
Query OK, 0 rows affected (0.02 sec)
```

(ii) SalesTABLE

```
mysql> create table sales(sid int(20) PRIMARY KEY AUTO_INCREMENT,
    -> sname varchar(200));
Query OK, 0 rows affected (0.02 sec)
```

(iii) Customers Table

```
mysql> create table customers(cid int(20) NOT NULL AUTO_INCREMENT,cname varchar(200), primary key(cid));
Query OK, 0 rows affected (0.02 sec)
```

4. Insert sample data

(i) Order Table

```
mysql> INSERT into orders(oid,order_item,cid,sid) values(1,"XYZ",101,10);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT into orders(oid,order_item,cid,sid) values(1,"ABC",102,11);
ERROR 1062 (23000): Duplicate entry '1' for key 'PRIMARY'
mysql> INSERT into orders(oid,order_item,cid,sid) values(2,"ABC",102,11);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT into orders(oid,order_item,cid,sid) values(3,"DEF",103,12);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT into orders(oid,order_item,cid,sid) values(4,"PQR",104,13);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT into orders(oid,order_item,cid,sid) values(5,"MNO",105,13);
Query OK, 1 row affected (0.00 sec)
```

```
mysql> select * from orders;
+-----+-------------+------+------+
| oid | order_item  | cid  | sid  |
+-----+-------------+------+------+
|   1 | XYZ         |  101 |   10 |
|   2 | ABC         |  102 |   11 |
|   3 | DEF         |  103 |   12 |
|   4 | PQR         |  104 |   13 |
|   5 | MNO         |  105 |   13 |
+-----+-------------+------+------+
5 rows in set (0.00 sec)
```

(ii) SALES TABLE

```
mysql> INSERT INTO sales(sid,sname) values(10,"Rohit");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO sales(sid,sname) values(11,"Himanshu");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO sales(sid,sname) values(12,"Hanish");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO sales(sid,sname) values(13,"Harish");
Query OK, 1 row affected (0.01 sec)
```

```
mysql> select * from sales;
+------+-----------+
| sid  | sname     |
+------+-----------+
|   10 | Rohit     |
|   11 | Himanshu  |
|   12 | Hanish    |
|   13 | Harish    |
+------+-----------+
4 rows in set (0.00 sec)
```

(iii) Customers Table

```
mysql> INSERT INTO customers(cid,cname) values(101,"Rahul");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customers(cid,cname) values(102,"Sunny");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customers(cid,cname) values(103,"Ashutosh");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO customers(cid,cname) values(104,"John");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customers(cid,cname) values(105,"Vishal");
Query OK, 1 row affected (0.00 sec)
```

```
mysql> select * from customers;
+------+------------+
| cid  | cname      |
+------+------------+
|  101 | Rahul      |
|  102 | Sunny      |
|  103 | Ashutosh   |
|  104 | John       |
|  105 | Vishal     |
+------+------------+
5 rows in set (0.00 sec)
```

5. Find the sales person have multiple orders.

```
mysql> select * from sales where sid in(select sid from orders group by sid having count(sid)>1);
+-----+--------+
| sid | sname  |
+-----+--------+
|  13 | Harish |
+-----+--------+
1 row in set (0.00 sec)
```

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

```
mysql> select oid,order_item,sales.sid,sname from orders LEFT JOIN sales on orders.sid = sales.sid;
+-----+------------+------+----------+
| oid | order_item | sid  | sname    |
+-----+------------+------+----------+
|   1 | XYZ        |   10 | Rohit    |
|   2 | ABC        |   11 | Himanshu |
|   3 | DEF        |   12 | Hanish   |
|   4 | PQR        |   13 | Harish   |
|   5 | MNO        |   13 | Harish   |
+-----+------------+------+----------+
5 rows in set (0.00 sec)
```

7. Create index

```
mysql> create index newindex on customers(cid,cname);
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

8. How to show index on a table

```
mysql> show indexes from customers;
+-----------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+
---------------+
| Table     | Non_unique | Key_name | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Comment |
 Index_comment |
+-----------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+
---------------+
| customers |          0 | PRIMARY  |            1 | cid         | A         |           4 |     NULL | NULL   |      | BTREE      |         |
               |
| customers |          1 | newindex |            1 | cid         | A         |           5 |     NULL | NULL   |      | BTREE      |         |
               |
| customers |          1 | newindex |            2 | cname       | A         |           5 |     NULL | NULL   | YES  | 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 oid,sname,cname from sales join orders on sales.sid = orders.sid join customers on orders.cid = customers.cid;
+-----+---------+---------+
| oid | sname   | cname   |
+-----+---------+---------+
|   1 | Rohit   | Rahul   |
|   2 | Himanshu | Sunny  |
|   3 | Hanish  | Ashutosh |
|   4 | Harish  | John    |
|   5 | Harish  | Vishal  |
+-----+---------+---------+
5 rows in set (0.00 sec)
```