Assessment -3

Introduction To Databases

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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

```
aditya@aditya:~$ sudo mysql -u root -p
[sudo] password for aditya:
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 7
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 ecommerce;
Query OK, 1 row affected (0.00 sec)

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| ecommerce          |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.00 sec)

mysql>
```

2. Design Schema

```
mysql> show create table customer;
+----------+-----------------------------------------------
-----------------------------------------------+
| Table    | Create Table
                                                |
+----------+-----------------------------------------------
-----------------------------------------------+
| customer | CREATE TABLE `customer` (
  `cid` int(11) NOT NULL,
  `cname` varchar(30) DEFAULT NULL,
  PRIMARY KEY (`cid`),
  KEY `newindex` (`cid`,`cname`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 |
+----------+-----------------------------------------------
-----------------------------------------------+
1 row in set (0.00 sec)

mysql> show create table sales;
+-------+-------------------------------------------------
------+
| Table | Create Table
      |
+-------+-------------------------------------------------
------+
| sales | CREATE TABLE `sales` (
  `sid` int(11) NOT NULL,
  `sname` varchar(30) DEFAULT NULL,
  PRIMARY KEY (`sid`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 |
+-------+-------------------------------------------------
------+
1 row in set (0.01 sec)
```

```
mysql> show create table orders;
+--------+-------------------------------------------------
--------+
| Table  | Create Table
       |
+--------+-------------------------------------------------
--------+
| orders | CREATE TABLE `orders` (
  `oid` int(11) NOT NULL,
  `oname` varchar(30) DEFAULT NULL,
  PRIMARY KEY (`oid`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 |
+--------+-------------------------------------------------
--------+
1 row in set (0.00 sec)
```

```
mysql> show create table customer_orders;
+----------------+-----------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------+
| Table          | Create Table

+----------------+-----------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------+
| customer_orders | CREATE TABLE `customer_orders` (
  `cid` int(11) DEFAULT NULL,
  `oid` int(11) DEFAULT NULL,
  KEY `cid` (`cid`),
  KEY `oid` (`oid`),
  CONSTRAINT `customer_orders_ibfk_2` FOREIGN KEY (`oid`) REFERENCES `orders` (`oid`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 |
+----------------+-----------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------+
1 row in set (0.00 sec)

mysql> show create table sales_orders;
+-------------+------------------------------------------------------------------------------------------------------
------------------------------------------------------------------------------------------------------------------------+
| Table       | Create Table

+-------------+------------------------------------------------------------------------------------------------------
------------------------------------------------------------------------------------------------------------------------+
| sales_orders | CREATE TABLE `sales_orders` (
  `sid` int(11) DEFAULT NULL,
  `oid` int(11) DEFAULT NULL,
  KEY `sid` (`sid`),
  KEY `oid` (`oid`),
  CONSTRAINT `sales_orders_ibfk_2` FOREIGN KEY (`oid`) REFERENCES `orders` (`oid`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 |
+-------------+------------------------------------------------------------------------------------------------------
------------------------------------------------------------------------------------------------------------------------+
1 row in set (0.00 sec)

mysql>
```

3. Create tables

```
mysql> create table customer(
    -> cid integer primary key,
    -> cname varchar(30));
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> create table orders(
    -> oid integer primary key,
    -> oname varchar(30));
Query OK, 0 rows affected (0.04 sec)

mysql> create table sales(
    -> sid integer primary key,
    -> sname varchar(30));
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> create table customer_orders(
    -> cid integer,
    -> oid integer);
Query OK, 0 rows affected (0.03 sec)

mysql> alter table customer_orders
    -> add foreign key (cid) references customer(cid);
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table customer_orders add foreign key (oid) references orders(oid);
Query OK, 0 rows affected (0.09 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> create table sales_orders(
    -> sid integer,
    -> oid integer);
Query OK, 0 rows affected (0.03 sec)

mysql> alter table sales_orders
    -> add foreign key (sid) references sales(sid);
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table sales_orders
    -> add foreign key (oid) references orders(oid);
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> show tables;
+----------------------+
| Tables_in_ecommerce  |
+----------------------+
| customer             |
| customer_orders      |
| orders               |
| sales                |
| sales_orders         |
+----------------------+
5 rows in set (0.00 sec)
```

```
mysql> show create table customer_orders;
+-----------------+--------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------------
----------------------------------------------------------------------+
| Table           | Create Table

                                                                      |
+-----------------+--------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------------
----------------------------------------------------------------------+
| customer_orders | CREATE TABLE `customer_orders` (
  `cid` int(11) DEFAULT NULL,
  `oid` int(11) DEFAULT NULL,
  KEY `cid` (`cid`),
  KEY `oid` (`oid`),
  CONSTRAINT `customer_orders_ibfk_1` FOREIGN KEY (`cid`) REFERENCES `customer` (`cid`),
  CONSTRAINT `customer_orders_ibfk_2` FOREIGN KEY (`oid`) REFERENCES `orders` (`oid`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 |
+-----------------+--------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------------
----------------------------------------------------------------------+
1 row in set (0.00 sec)

mysql> alter table customer_orders drop foreign key customer_orders_ibfk_1;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```


```
mysql> show create table customer_orders;
+-----------------+--------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------------
----------------------------------------------------------------------+
| Table           | Create Table

                                                                      |
+-----------------+--------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------------
----------------------------------------------------------------------+
| customer_orders | CREATE TABLE `customer_orders` (
  `cid` int(11) DEFAULT NULL,
  `oid` int(11) DEFAULT NULL,
  KEY `cid` (`cid`),
  KEY `oid` (`oid`),
  CONSTRAINT `customer_orders_ibfk_1` FOREIGN KEY (`cid`) REFERENCES `customer` (`cid`),
  CONSTRAINT `customer_orders_ibfk_2` FOREIGN KEY (`oid`) REFERENCES `orders` (`oid`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1 |
+-----------------+--------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------------
----------------------------------------------------------------------+
1 row in set (0.00 sec)

mysql> alter table customer_orders drop foreign key customer_orders_ibfk_1;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

4. Insert sample data

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

mysql> insert into customer values(2, "Abhishek");
Query OK, 1 row affected (0.01 sec)

mysql> insert into customer values(3, "Shivansh");
Query OK, 1 row affected (0.01 sec)

mysql> insert into orders values(1, "Lenovo");
Query OK, 1 row affected (0.01 sec)

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

mysql> insert into orders values(3, "Dell"),(4, "HP"),(5, "Acer"),(6, "Razer"),(7, "Asus");
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

```
mysql> insert into sales values(1, "Ramesh"),(2, "Suresh"),(3, "Raghu"),(4, "Ekanshu");
Query OK, 4 rows affected (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> insert into customer_orders values(1, 1), (1, 2), (1, 3), (2, 4), (2, 5), (3, 6), (3, 7);
Query OK, 7 rows affected (0.01 sec)
Records: 7  Duplicates: 0  Warnings: 0

mysql> insert into sales_orders values(1, 1), (1, 2), (2, 3), (2, 4), (3, 5), (3, 6), (4, 7);
Query OK, 7 rows affected (0.02 sec)
Records: 7  Duplicates: 0  Warnings: 0
```

5. Find the sales person have multiple orders.

```
mysql> select sid, count(*) as c
    -> from sales_orders
    -> group by sid
    -> having c>1
    -> order by c;
+------+---+
| sid  | c |
+------+---+
|    1 | 2 |
|    2 | 2 |
|    3 | 2 |
+------+---+
3 rows in set (0.00 sec)
```

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

```
mysql> select s.sid, sname, o.oid, oname from sales s inner join sales_orders x on s.sid=x.sid inner join orders o on o.oid=x.oid;
+-----+---------+-----+---------+
| sid | sname   | oid | oname   |
+-----+---------+-----+---------+
|   1 | Ramesh  |   1 | Lenovo  |
|   1 | Ramesh  |   2 | Samsung |
|   2 | Suresh  |   3 | Dell    |
|   2 | Suresh  |   4 | HP      |
|   3 | Raghu   |   5 | Acer    |
|   3 | Raghu   |   6 | Razer   |
|   4 | Ekanshu |   7 | Asus    |
+-----+---------+-----+---------+
7 rows in set (0.00 sec)
```

7. Create index

```
mysql> create index newindex
    -> on customer(cid, cname);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

8. How to show index on a table

```
mysql> show indexes from customer;
+----------+------------+----------+--------------+------------+-----------+-------------+----------+--------+------+------------+---------+---------
------+
| Table    | Non_unique | Key_name | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Comment | Index_co
mment |
+----------+------------+----------+--------------+------------+-----------+-------------+----------+--------+------+------------+---------+---------
------+
| customer |          0 | PRIMARY  |            1 | cid         | A         |           2 |     NULL | NULL   |      | BTREE      |         |
      |
| customer |          1 | newindex |            1 | cid         | A         |           3 |     NULL | NULL   |      | BTREE      |         |
      |
| customer |          1 | newindex |            2 | cname       | A         |           3 |     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 cname, x.oid, sname from customer c inner join customer_orders x on c.cid=x.cid inner join sales_orders z on x.oid=z.oid inner join sale
s s on z.sid=s.sid;
+----------+------+---------+
| cname    | oid  | sname   |
+----------+------+---------+
| Aditya   |    1 | Ramesh  |
| Aditya   |    2 | Ramesh  |
| Aditya   |    3 | Suresh  |
| Abhishek |    4 | Suresh  |
| Abhishek |    5 | Raghu   |
| Shivansh |    6 | Raghu   |
| Shivansh |    7 | Ekanshu |
+----------+------+---------+
7 rows in set (0.00 sec)
```