Topic :- Introduction To Database

1. Create Database

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

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| cart               |
| mysql              |
| performance_schema |
| sys                |
| users              |
+--------------------+
6 rows in set (0.00 sec)

mysql>
```

2. Design Schema

```
aman@Aman-Khandelwal: ~

File  Edit  View  Search  Terminal  Help
mysql> desc orders
    -> ;
+----------+--------------+------+-----+---------+----------------+
| Field    | Type         | Null | Key | Default | Extra          |
+----------+--------------+------+-----+---------+----------------+
| oID      | int(11)      | NO   | PRI | NULL    | auto_increment |
| oDetails | varchar(255) | YES  |     | NULL    |                |
| custID   | int(11)      | YES  | MUL | NULL    |                |
| spID     | int(11)      | YES  | MUL | NULL    |                |
+----------+--------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql> desc customers;
+-------+--------------+------+-----+---------+----------------+
| Field | Type         | Null | Key | Default | Extra          |
+-------+--------------+------+-----+---------+----------------+
| cID   | int(11)      | NO   | PRI | NULL    | auto_increment |
| cName | varchar(255) | YES  |     | NULL    |                |
+-------+--------------+------+-----+---------+----------------+
2 rows in set (0.00 sec)

mysql> desc salesPerson;
+-------+--------------+------+-----+---------+----------------+
| Field | Type         | Null | Key | Default | Extra          |
+-------+--------------+------+-----+---------+----------------+
| sID   | int(11)      | NO   | PRI | NULL    | auto_increment |
| sName | varchar(255) | YES  |     | NULL    |                |
+-------+--------------+------+-----+---------+----------------+
2 rows in set (0.00 sec)
```

3. Create tables

```
                           aman@Aman-Khandelwal: ~

 File  Edit  View  Search  Terminal  Help
mysql> create table customers ( cID int primary key auto_increment, cName varchar(255));
Query OK, 0 rows affected (0.04 sec)

mysql> create table salesPerson ( sID int primary key auto_increment, sName varchar(255));
Query OK, 0 rows affected (0.03 sec)

mysql> create table orders ( oID int primary key auto_increment, oDetails varchar(255), custID i
nt, foreign key(custID) references customers(cID), spID int, foreign key(spID) references salesP
erson(sID));
Query OK, 0 rows affected (0.04 sec)

mysql>
```

4. Insert sample data

```
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 File  Edit  View  Search  Terminal  Help
Query OK, 0 rows affected (0.04 sec)

mysql> insert into customers (cName) values ('aman');
Query OK, 1 row affected (0.01 sec)

mysql> insert into salesPerson (sName) values ('ankit');
Query OK, 1 row affected (0.02 sec)

mysql> insert into orders (oDetails, custID, spID) values ('dslr',1,1);
Query OK, 1 row affected (0.01 sec)

mysql>
```

5. Find the sales person have multiple orders.

```
                           aman@Aman-Khandelwal: ~

 File  Edit  View  Search  Terminal  Help
ine 1
mysql> select sName from salesPerson inner join (select spID from orders group by spID having co
unt(spID) > 1) as out1 on out1.spID=salesPerson.sID;
+---------+
| sName   |
+---------+
| ankit   |
| saurabh |
+---------+
2 rows in set (0.00 sec)

mysql>
```

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


```
mysql> select sID, sName, od.oID, od.oDetails from salesPerson left join orders as od on od.spID
=salesPerson.sID;
+-----+----------+------+----------+
| sID | sName    | oID  | oDetails |
+-----+----------+------+----------+
|   1 | ankit    |    1 | dslr     |
|   1 | ankit    |    3 | lamp     |
|   2 | ajit     |    4 | table    |
|   3 | saurabh  |    2 | table    |
|   3 | saurabh  |    5 | TV       |
|   4 | ajay     | NULL | NULL     |
|   5 | harry    | NULL | NULL     |
+-----+----------+------+----------+
7 rows in set (0.00 sec)
```

7. Create index


```
mysql> mysql> create index order_index on orders(oID);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to y
our MySQL server version for the right syntax to use near 'order_index on orders(oID)' at line 1
mysql> create index order_index on orders(oID);
Query OK, 0 rows affected (0.05 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 | oID         | A         |           4 |
 NULL | NULL |      | BTREE      |         |               |
| orders |          1 | custID    |            1 | custID      | A         |           4 |
 NULL | NULL | YES  | BTREE      |         |               |
| orders |          1 | spID      |            1 | spID        | A         |           3 |
 NULL | NULL | YES  | BTREE      |         |               |
| orders |          1 | order_index |          1 | oID         | A         |           5 |
 NULL | NULL |      | BTREE      |         |               |
+--------+------------+-----------+------------+-------------+-------------+-------------+------
```

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

```
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File Edit View Search Terminal Help
ustID=c.cID join salesPerson s on o.spID=s.' at line 1
mysql> select o.oID, c.cName, s.sName from orders o join customers c on o.custID=c.cID join sale
sPerson s on o.spID=s.sID;
+-----+---------+---------+
| oID | cName   | sName   |
+-----+---------+---------+
|   1 | aman    | ankit   |
|   2 | anmol   | saurabh |
|   3 | krishna | ankit   |
|   4 | rajat   | ajit    |
|   5 | krishna | saurabh |
+-----+---------+---------+
5 rows in set (0.01 sec)

mysql>
```