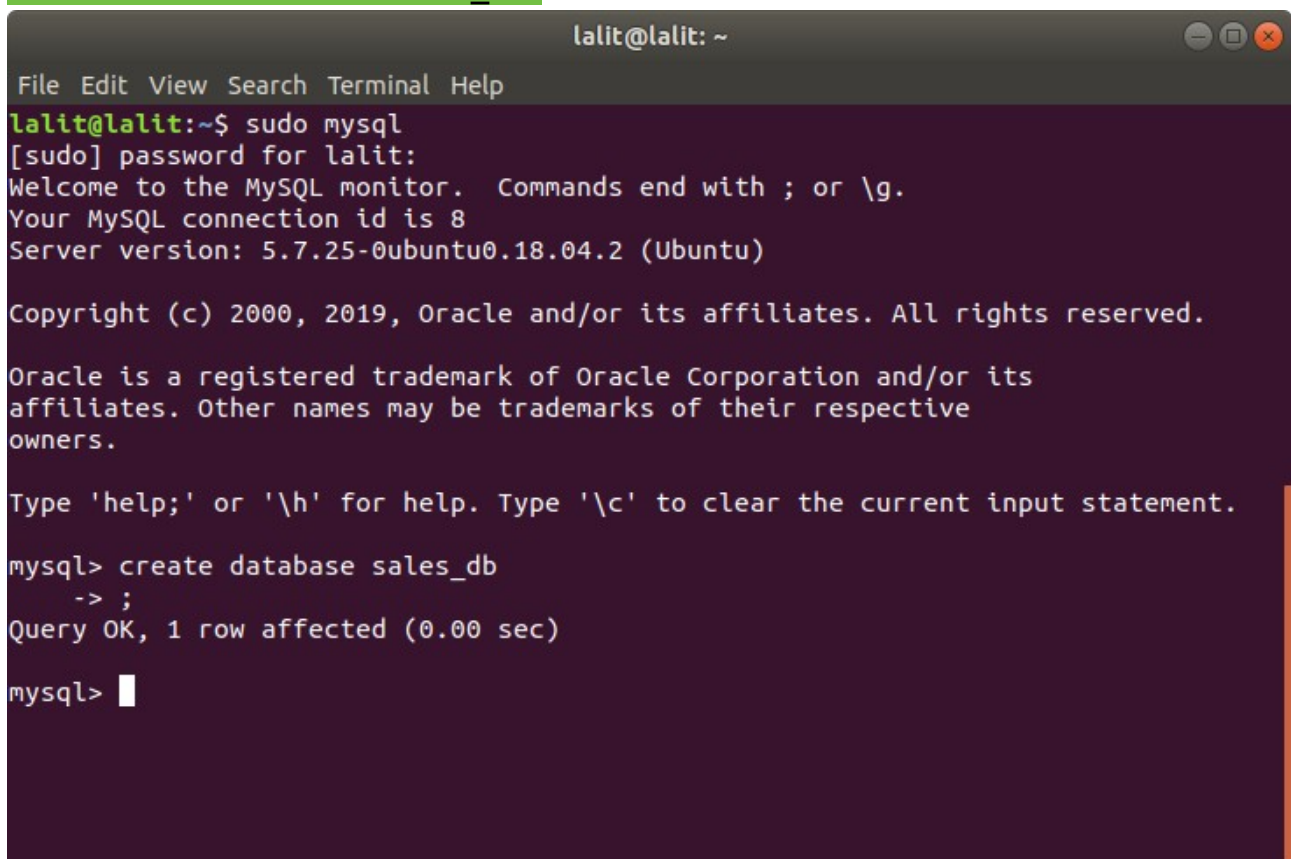INTRODUCTION TO DATABASE
ASSIGNMENT
NAME-LALIT SHARMA
GROUP-5

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

CREATE DATABASE SALES_DB

```
lalit@lalit: ~
File  Edit  View  Search  Terminal  Help
lalit@lalit:~$ sudo mysql
[sudo] password for lalit:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 5.7.25-0ubuntu0.18.04.2 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

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

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

mysql>
```

2.Design Schema

Here i am creating 4 tables sales_person, items, customer and order_details to solve the question.

sales_person will contain details of sales person and as sales person is can be manager.so, we have is_manager to set 1 or 0.

customer table will store all information about customer.

Items table will have information of all items.

order_details table will contain ids of sales_person, customer and item bought by customer. There is order id to uniquely identify each order.
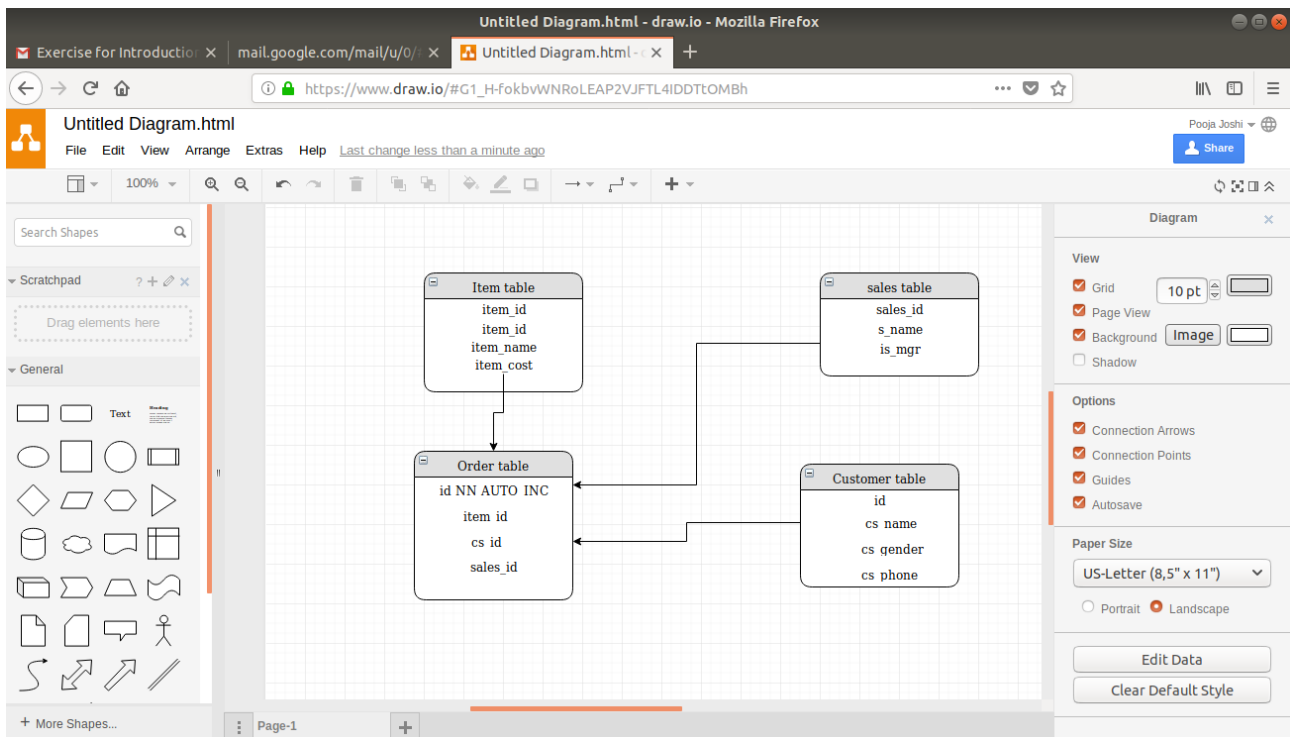
3.Create tables

create table sales_person id int(11) auto_increment not null, name varchar(255) not null, is_manager bit(1) not null default '0',);


```
mysql>
mysql>
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mysql>
mysql> create table sales_manager( id int(11) auto_increment not null, name varc
har(255) not null, is_manager bit(1) not null default 0,primary key(id) );
Query OK, 0 rows affected (0.37 sec)

mysql> desc sales_manager;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| id         | int(11)      | NO   | PRI | NULL    | auto_increment |
| name       | varchar(255) | NO   |     | NULL    |                |
| is_manager | bit(1)       | NO   |     | b'0'    |                |
+------------+--------------+------+-----+---------+----------------+
3 rows in set (0.00 sec)

mysql>
```

create table customer(id int(11) auto_increment not null, name varchar(255) not null, gender varchar(1) not null,phone varchar(11) not null,primary key(id));

```
                                    lalit@lalit: ~                              ─ □ ✕

File  Edit  View  Search  Terminal  Help
mysql> create table customer( id int(11) auto_increment not null, name varchar(2
55) not null, gender varchar(1) not null,phone varchar(11) not null,primary key(
id) );
Query OK, 0 rows affected (0.34 sec)

mysql> desc customer;
+---------+--------------+------+-----+---------+----------------+
| Field   | Type         | Null | Key | Default | Extra          |
+---------+--------------+------+-----+---------+----------------+
| id      | int(11)      | NO   | PRI | NULL    | auto_increment |
| name    | varchar(255) | NO   |     | NULL    |                |
| gender  | varchar(1)   | NO   |     | NULL    |                |
| phone   | varchar(11)  | NO   |     | NULL    |                |
+---------+--------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql>
```

create table order_details(id int(11) auto_increment not null,item_id int(11) not null,customer_id int(11) not null,sales_person_id int(11) not null,primary key(id));

```
                                    lalit@lalit: ~                              ─ □ ✕

File  Edit  View  Search  Terminal  Help
mysql> create table order_details( id int(11) auto_increment not null,item_id in
t(11)  not null,customer_id int(11) not null,sales_person_id int(11) not null,pr
imary key(id) );
Query OK, 0 rows affected (0.33 sec)

mysql> desc order_details;
+-----------------+---------+------+-----+---------+----------------+
| Field           | Type    | Null | Key | Default | Extra          |
+-----------------+---------+------+-----+---------+----------------+
| id              | int(11) | NO   | PRI | NULL    | auto_increment |
| item_id         | int(11) | NO   |     | NULL    |                |
| customer_id     | int(11) | NO   |     | NULL    |                |
| sales_person_id | int(11) | NO   |     | NULL    |                |
+-----------------+---------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql>
```

create table items(id int(11) auto_increment not null,name varchar(100) not null,cost int(11) not null,primary key(id));

```
                              lalit@lalit: ~

File  Edit  View  Search  Terminal  Help
mysql> create table items(id int(11) auto_increment not null,name varchar(100)
not null,cost int(11) not null,primary key(id) );
Query OK, 0 rows affected (0.38 sec)

mysql> desc items;
+--------+--------------+------+-----+---------+----------------+
| Field  | Type         | Null | Key | Default | Extra          |
+--------+--------------+------+-----+---------+----------------+
| id     | int(11)      | NO   | PRI | NULL    | auto_increment |
| name   | varchar(100) | NO   |     | NULL    |                |
| cost   | int(11)      | NO   |     | NULL    |                |
+--------+--------------+------+-----+---------+----------------+
3 rows in set (0.00 sec)

mysql>
```

```
                              lalit@lalit: ~

File  Edit  View  Search  Terminal  Help
mysql> desc customer;
+--------+--------------+------+-----+---------+----------------+
| Field  | Type         | Null | Key | Default | Extra          |
+--------+--------------+------+-----+---------+----------------+
| id     | int(11)      | NO   | PRI | NULL    | auto_increment |
| name   | varchar(255) | NO   |     | NULL    |                |
| gender | varchar(1)   | NO   |     | NULL    |                |
| phone  | varchar(11)  | NO   |     | NULL    |                |
+--------+--------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql> insert into customer values (1,'abc','f','123456789');
Query OK, 1 row affected (0.08 sec)

mysql> insert into customer values (2,'xyz','m','987654321');
Query OK, 1 row affected (0.09 sec)

mysql> select * from customer;
+----+------+--------+-----------+
| id | name | gender | phone     |
+----+------+--------+-----------+
|  1 | abc  | f      | 123456789 |
|  2 | xyz  | m      | 987654321 |
+----+------+--------+-----------+
2 rows in set (0.00 sec)

mysql>
```

4.Insert sample data
insert into sales_person values (1,'jack',1);

```
lalit@lalit: ~

File Edit View Search Terminal Help
mysql> desc sales_person;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| id         | int(11)      | NO   | PRI | NULL    | auto_increment |
| name       | varchar(255) | NO   |     | NULL    |                |
| is_manager | bit(1)       | NO   |     | b'0'    |                |
+------------+--------------+------+-----+---------+----------------+
3 rows in set (0.00 sec)

mysql> insert into sales_person  values (1,'sp1',0);
Query OK, 1 row affected (0.09 sec)

mysql> insert into sales_person  values (2,'sp2',1);
Query OK, 1 row affected (0.03 sec)

mysql> select * from sales_person;
+----+------+------------+
| id | name | is_manager |
+----+------+------------+
|  1 | sp1  |            |
|  2 | sp2  |  ▨         |
+----+------+------------+
2 rows in set (0.00 sec)

mysql>
```

insert into order_details values(5,2,3,3);

```
lalit@lalit: ~

File Edit View Search Terminal Help
mysql> desc order_details;
+-----------------+---------+------+-----+---------+----------------+
| Field           | Type    | Null | Key | Default | Extra          |
+-----------------+---------+------+-----+---------+----------------+
| id              | int(11) | NO   | PRI | NULL    | auto_increment |
| item_id         | int(11) | NO   |     | NULL    |                |
| customer_id     | int(11) | NO   |     | NULL    |                |
| sales_person_id | int(11) | NO   |     | NULL    |                |
+-----------------+---------+------+-----+---------+----------------+
4 rows in set (0.00 sec)

mysql> insert into order_details values (1,1,1,1);
Query OK, 1 row affected (0.10 sec)

mysql> insert into order_details values (2,2,1,1);
Query OK, 1 row affected (0.09 sec)
```

insert into items values (3,'tv',35000);

```
                                 lalit@lalit: ~

File  Edit  View  Search  Terminal  Help
mysql> desc items;
+--------+--------------+------+-----+---------+----------------+
| Field  | Type         | Null | Key | Default | Extra          |
+--------+--------------+------+-----+---------+----------------+
| id     | int(11)      | NO   | PRI | NULL    | auto_increment |
| name   | varchar(100) | NO   |     | NULL    |                |
| cost   | int(11)      | NO   |     | NULL    |                |
+--------+--------------+------+-----+---------+----------------+
3 rows in set (0.00 sec)

mysql> insert into items values (1,'laptop',20000);
Query OK, 1 row affected (0.10 sec)

mysql> insert into items values (2,'computer',15000);
Query OK, 1 row affected (0.09 sec)

mysql> select * from items;
+----+----------+-------+
| id | name     | cost  |
+----+----------+-------+
|  1 | laptop   | 20000 |
|  2 | computer | 15000 |
+----+----------+-------+
2 rows in set (0.00 sec)

mysql>
```

5.Find the sales person have multiple orders.
select * from sales_person where id in (select sales_person_id
from order_details group by sales_person_id having
count(sales_person_id)>1);

```
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 File  Edit  View  Search  Terminal  Help
mysql>
mysql>
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mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
mysql> select * from sales_person where id =(select sales_person_id  from order_
details group by sales_person_id having count(sales_person_id)>1);
+----+------+------------+
| id | name | is_manager |
+----+------+------------+
|  1 | sp1  |            |
+----+------+------------+
1 row in set (0.00 sec)

mysql>
```

6.Find the all sales person details along with order details
select sales_person.name , customer.name , items.name,
items.cost from sales_person join order_details on
sales_person.id=order_details.sales_person_id join customer on
order_details.customer_id = customer.id join items on
order_details.item_id = items.id;

```
                              lalit@lalit: ~                        ⊖ ▢ ⊗

 File  Edit  View  Search  Terminal  Help
mysql> select sales_person.name , customer.name , items.name, items.cost
    -> from sales_person join order_details on sales_person.id=order_details.sal
es_person_id
    -> join customer on order_details.customer_id = customer.id
    -> join items on order_details.item_id = items.id;
+------+------+----------+-------+
| name | name | name     | cost  |
+------+------+----------+-------+
| sp1  | abc  | laptop   | 20000 |
| sp1  | abc  | computer | 15000 |
| sp1  | xyz  | laptop   | 20000 |
| sp1  | xyz  | laptop   | 20000 |
+------+------+----------+-------+
4 rows in set (0.00 sec)

mysql>
```

7.Create index

`create index item_id on items(id);`

```
                              lalit@lalit: ~                        _ ▢ ✕

File  Edit  View  Search  Terminal  Help
mysql>
mysql>
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mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
mysql>
mysql> create index item_id on items(id);
Query OK, 0 rows affected (0.37 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ▯
```

8.How to show index on a table

`show index from items;`

```
                              lalit@lalit: ~                        _ ▢ ✕

File  Edit  View  Search  Terminal  Help
mysql> show index from items;
+-------+------------+----------+-------------+-------------+-----------+------
-------+----------+--------+------+------------+---------+---------------+
| Table | Non_unique | Key_name | Seq_in_index | Column_name | Collation | Cardi
nality | Sub_part | Packed | Null | Index_type | Comment | Index_comment |
+-------+------------+----------+-------------+-------------+-----------+------
-------+----------+--------+------+------------+---------+---------------+
| items |          0 | PRIMARY  |           1 | id          | A         |
     4 |     NULL | NULL   |      | BTREE      |         |               |
| items |          1 | item_id  |           1 | id          | A         |
     4 |     NULL | NULL   |      | BTREE      |         |               |
+-------+------------+----------+-------------+-------------+-----------+------
-------+----------+--------+------+------------+---------+---------------+
2 rows in set (0.00 sec)

mysql> ▯
```

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

`select sales_person.name , customer.name , order_details.id from sales_person join order_details on sales_person.id=order_details.sales_person_id join customer on order_details.customer_id = customer.id join items on order_details.item_id = items.id;`

```
mysql> select sales_person.name , customer.name , order_details.id from sales_pe
rson join order_details on sales_person.id=order_details.sales_person_id join cu
stomer on order_details.customer_id = customer.id join items on order_details.it
em_id = items.id;
+------+------+----+
| name | name | id |
+------+------+----+
| sp1  | abc  |  1 |
| sp1  | abc  |  2 |
| sp1  | xyz  |  3 |
| sp1  | xyz  |  4 |
| sp2  | jack |  5 |
+------+------+----+
5 rows in set (0.00 sec)

mysql>
```