Database Lab Take Home Assignment - 1

Problem Set 1:

1. Construct a table with following details given below:
Product(Pid, Pname ,Price, Category, Manufacturer)
purchase(ProdId, buyerName, date, price)
Pid: Is primary key for product table .
ProdId, buyerName: are Primary key for purchase table.
ProdId : purchased table is foreign key refering to Pid of
product table;

Database Creation :

```
create database database_assignment_01;
```

```
mysql> create database database_assignment_01;
Query OK, 1 row affected (0.22 sec)
```

Database Selection :

```
use database_assignment_01;
```

```
mysql> use database_assignment_01;
Database changed
mysql>
```

Product Table Creation :

```
create table product
(
    product_id integer not null,
    product_name varchar(30) not null,
    price_in_USD float not null,
    category varchar(30) not null,
    manufacturer varchar(30) not null,
```

```
      primary key (product_id)
);
```

```
mysql> create table product
    -> (
    ->      product_id integer not null,
    ->      product_name varchar(30) not null,
    ->      price_in_USD float not null,
    ->      category varchar(30) not null,
    ->      manufacturer varchar(30) not null,
    ->      primary key (product_id)
    -> );
Query OK, 0 rows affected (1.55 sec)
```

Purchase Table Creation :

```
create table purchase
(
    product_id integer not null,
    buyer_name varchar(30) not null,
    purchase_date date not null,
    price_in_USD float not null,
    primary key (product_id,buyer_name),
    foreign key (product_id) references product(product_id)
);
```

```
mysql> create table purchase
    -> (
    ->      product_id integer not null,
    ->      buyer_name varchar(30) not null,
    ->      purchase_date date not null,
    ->      price_in_USD float not null,
    ->      primary key (product_id,buyer_name),
    ->      foreign key (product_id) references product(product_id)
    -> );
Query OK, 0 rows affected (1.28 sec)
```

Insert Values into Product Table:

```
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(12,'Laptop',500,'Electronics','Dell');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
```

```sql
(24,'Laptop',480,'Electronics','HP');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(42,'Laptop',900,'Electronics','Apple');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(65,'Laptop',460,'Electronics','Lenovo');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(47,'Laptop',450,'Electronics','Acer');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(23,'Laptop',540,'Electronics','Asus');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(27,'Laptop',550,'Electronics','Samsung');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(279,'Laptop',650,'Electronics','Huawei');
```

```
mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (12,'Laptop',500,'Electronics','Dell');
Query OK, 1 row affected (0.12 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (24,'Laptop',480,'Electronics','HP');
Query OK, 1 row affected (0.11 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (42,'Laptop',900,'Electronics','Apple');
Query OK, 1 row affected (0.13 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (65,'Laptop',460,'Electronics','Lenovo');
Query OK, 1 row affected (0.13 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (47,'Laptop',450,'Electronics','Acer');
Query OK, 1 row affected (0.10 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (23,'Laptop',540,'Electronics','Asus');
Query OK, 1 row affected (0.10 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (27,'Laptop',550,'Electronics','Samsung')
;
Query OK, 1 row affected (0.13 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (279,'Laptop',650,'Electronics','Huawei')
;
Query OK, 1 row affected (0.07 sec)
```

```sql
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(7,'Mouse',40,'Electronics','Dell');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(69,'Mouse',35,'Electronics','Logitech');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(352,'Mouse',30,'Electronics','HP');
```

```sql
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values (689,'Solid State
Drive',120,'Electronics','Kingston');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values (64,'Solid State
Drive',115,'Electronics','Corsair');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values (353,'Solid State
Drive',130,'Electronics','Samsung');

insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(68,'Keyboard',12,'Electronics','Dell');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(657,'Keyboard',20,'Electronics','Logitech');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(35,'Keyboard',34,'Electronics','HP');
```

```
mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (7,'Mouse',40,'Electronics','Dell');
Query OK, 1 row affected (0.14 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (69,'Mouse',35,'Electronics','Logitech');

Query OK, 1 row affected (0.09 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (352,'Mouse',30,'Electronics','HP');
Query OK, 1 row affected (0.25 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (689,'Solid State Drive',120,'Electronics
','Kingston');
Query OK, 1 row affected (0.15 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (64,'Solid State Drive',115,'Electronics'
,'Corsair');
Query OK, 1 row affected (0.11 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (353,'Solid State Drive',130,'Electronics
','Samsung');
Query OK, 1 row affected (0.16 sec)

mysql>
mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (68,'Keyboard',12,'Electronics','Dell');
Query OK, 1 row affected (0.13 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (657,'Keyboard',20,'Electronics','Logitec
h');
Query OK, 1 row affected (0.10 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (35,'Keyboard',34,'Electronics','HP');
Query OK, 1 row affected (0.11 sec)
```

```sql
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values (63,'Air
Conditioner',309,'Appliances','Hitachi');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values (41,'Air
```

```sql
Conditioner',270,'Appliances','Blue Star');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values (14,'Air
Conditioner',320,'Appliances','Croma');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values (36,'Air
Conditioner',200,'Appliances','Samsung');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values (336,'Air
Conditioner',210,'Appliances','Huawei');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(345,'Shirts',65,'Clothing','Arrow');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(78,'Shirts',40,'Clothing','John Players');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(125,'Shirts',41,'Clothing','Peter England');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(462,'Shirts',50,'Clothing','Louis Phillipe');
```

```
mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (63,'Air Conditioner',309,'Appliances','H
itachi');
Query OK, 1 row affected (0.12 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (41,'Air Conditioner',270,'Appliances','B
lue Star');
Query OK, 1 row affected (0.14 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (14,'Air Conditioner',320,'Appliances','C
roma');
Query OK, 1 row affected (0.23 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (36,'Air Conditioner',200,'Appliances','S
amsung');
Query OK, 1 row affected (0.12 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (336,'Air Conditioner',210,'Appliances','
Huawei');
Query OK, 1 row affected (0.14 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (345,'Shirts',65,'Clothing','Arrow');
Query OK, 1 row affected (0.09 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (78,'Shirts',40,'Clothing','John Players'
);
Query OK, 1 row affected (0.14 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (125,'Shirts',41,'Clothing','Peter Englan
d');
Query OK, 1 row affected (0.10 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (462,'Shirts',50,'Clothing','Louis Philli
pe');
Query OK, 1 row affected (0.15 sec)
```

```sql
insert into product(product_id,
```

```sql
product_name,price_in_USD,category,manufacturer) values
(201,'Shirts',35,'Clothing','Zodiac');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(128,'Smartphone',650,'Electronics','Apple');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(124,'Smartphone',480,'Electronics','Motorola');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(162,'Smartphone',380,'Electronics','Lenovo');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(102,'Smartphone',550,'Electronics','Samsung');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(2,'Smartphone',600,'Electronics','Huawei');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(256,'shoe',54,'Sports','Reebok');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(20,'shoe',45,'Sports','Skechers');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(242,'shoe',60,'Sports','Nike');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(33,'shoe',75,'Sports','Adidas');
```

```
mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (201,'Shirts',35,'Clothing','Zodiac');
Query OK, 1 row affected (0.16 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (128,'Smartphone',650,'Electronics','Appl
e');
Query OK, 1 row affected (0.16 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (124,'Smartphone',480,'Electronics','Moto
rola');
Query OK, 1 row affected (0.23 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (162,'Smartphone',380,'Electronics','Leno
vo');
Query OK, 1 row affected (0.10 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (102,'Smartphone',550,'Electronics','Sams
ung');
Query OK, 1 row affected (0.13 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (2,'Smartphone',600,'Electronics','Huawei
');
Query OK, 1 row affected (0.18 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (256,'shoe',54,'Sports','Reebok');
Query OK, 1 row affected (0.15 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (20,'shoe',45,'Sports','Skechers');
Query OK, 1 row affected (0.12 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (242,'shoe',60,'Sports','Nike');
Query OK, 1 row affected (0.15 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (33,'shoe',75,'Sports','Adidas');
Query OK, 1 row affected (0.10 sec)
```

```sql
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(421,'shoe',44.30,'Sports','Xtep');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(26,'badminton',54,'Sports','Yonex');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(230,'badminton',45,'Sports','Wilson');
insert into product(product_id,
product_name,price_in_USD,category,manufacturer) values
(22,'badminton',60.20,'Sports','Li-ning');
```

```
mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (421,'shoe',44.30,'Sports','Xtep');
Query OK, 1 row affected (0.12 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (26,'badminton',54,'Sports','Yonex');
Query OK, 1 row affected (0.15 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (230,'badminton',45,'Sports','Wilson');
Query OK, 1 row affected (0.12 sec)

mysql> insert into product(product_id, product_name,price_in_USD,category,manufacturer) values (22,'badminton',60.20,'Sports','Li-ning')
;
Query OK, 1 row affected (0.14 sec)
```

Insert Values into Purchase Table :

```sql
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(65,'Kamal',DATE('2012-12-17'),460);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(22,'Avinash',DATE('2014-10-18'),120.4);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(7,'Gaurav',DATE('2012-12-11'),24);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(78,'Qamar',DATE('2012-08-01'),160);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(256,'Pawan',DATE('2018-12-27'),54);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(201,'Alam',DATE('2012-04-05'),70);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(345,'Niranjan',DATE('2012-02-28'),130);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(65,'Neeraj',DATE('2018-12-27'),460);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(14,'Manish',DATE('2019-01-02'),320);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(242,'Pushkar',DATE('2012-12-17'),240);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(7,'Abhinav',DATE('2014-10-18'),12);
```

```
mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (65,'Kamal',DATE('2012-12-17'),460);
Query OK, 1 row affected (0.13 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (22,'Avinash',DATE('2014-10-18'),120.4);
Query OK, 1 row affected (0.14 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (7,'Gaurav',DATE('2012-12-11'),24);
Query OK, 1 row affected (0.14 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (78,'Qamar',DATE('2012-08-01'),160);
Query OK, 1 row affected (0.10 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (256,'Pawan',DATE('2018-12-27'),54);
Query OK, 1 row affected (0.10 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (201,'Alam',DATE('2012-04-05'),70);
Query OK, 1 row affected (0.09 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (345,'Niranjan',DATE('2012-02-28'),130);
Query OK, 1 row affected (0.13 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (65,'Neeraj',DATE('2018-12-27'),460);
Query OK, 1 row affected (0.09 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (14,'Manish',DATE('2019-01-02'),320);
Query OK, 1 row affected (0.15 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (242,'Pushkar',DATE('2012-12-17'),240);
Query OK, 1 row affected (0.11 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (7,'Abhinav',DATE('2014-10-18'),12);
Query OK, 1 row affected (0.11 sec)
```

```sql
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(78,'Gaurang',DATE('2019-01-02'),80);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
```

```sql
(345,'Muneer',DATE('2015-10-17'),65);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(256,'Pratyush',DATE('2014-10-18'),108);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(27,'Kamlesh',DATE('2011-08-22'),550);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(14,'Yogendra',DATE('2012-12-17'),640);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(125,'Apoorv',DATE('2018-12-27'),42);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(42,'Budhar',DATE('2015-10-17'),900);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(23,'Rajeshwar',DATE('2019-01-02'),540);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(345,'Ankit',DATE('2012-12-17'),130);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(65,'Mann',DATE('2013-04-19'),460);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(162,'Virendra',DATE('2018-12-27'),380);
```

```
mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (78,'Gaurang',DATE('2019-01-02'),80);
Query OK, 1 row affected (0.10 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (345,'Muneer',DATE('2015-10-17'),65);
Query OK, 1 row affected (0.08 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (256,'Pratyush',DATE('2014-10-18'),108);
Query OK, 1 row affected (0.10 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (27,'Kamlesh',DATE('2011-08-22'),550);
Query OK, 1 row affected (0.23 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (14,'Yogendra',DATE('2012-12-17'),640);
Query OK, 1 row affected (0.10 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (125,'Apoorv',DATE('2018-12-27'),42);
Query OK, 1 row affected (0.12 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (42,'Budhar',DATE('2015-10-17'),900);
Query OK, 1 row affected (0.13 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (23,'Rajeshwar',DATE('2019-01-02'),540);
Query OK, 1 row affected (0.07 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (345,'Ankit',DATE('2012-12-17'),130);
Query OK, 1 row affected (0.13 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (65,'Mann',DATE('2013-04-19'),460);
Query OK, 1 row affected (0.07 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (162,'Virendra',DATE('2018-12-27'),380);
Query OK, 1 row affected (0.12 sec)
```

```sql
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(63,'Udghosh',DATE('2012-04-05'),309);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(345,'Abhas',DATE('2015-10-17'),65);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(256,'Bodhisatva',DATE('2012-12-17'),54);
```

```sql
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(22,'Rajesh',DATE('2014-10-18'),60.2);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(42,'Vinay',DATE('2013-04-19'),900);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(65,'Rakesh',DATE('2014-10-18'),460);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(162,'Ajit',DATE('2018-12-27'),380);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(256,'Kamal',DATE('2011-08-22'),54);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(230,'Ankur',DATE('2014-10-18'),90);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(27,'Niranjan',DATE('2014-10-18'),550);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(65,'Kuldeep',DATE('2012-04-05'),460);
```

```
mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (63,'Udghosh',DATE('2012-04-05'),309);
Query OK, 1 row affected (0.11 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (345,'Abhas',DATE('2015-10-17'),65);
Query OK, 1 row affected (0.13 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (256,'Bodhisatva',DATE('2012-12-17'),54);
Query OK, 1 row affected (0.12 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (22,'Rajesh',DATE('2014-10-18'),60.2);
Query OK, 1 row affected (0.11 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (42,'Vinay',DATE('2013-04-19'),900);
Query OK, 1 row affected (0.21 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (65,'Rakesh',DATE('2014-10-18'),460);
Query OK, 1 row affected (0.30 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (162,'Ajit',DATE('2018-12-27'),380);
Query OK, 1 row affected (0.09 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (256,'Kamal',DATE('2011-08-22'),54);
Query OK, 1 row affected (0.14 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (230,'Ankur',DATE('2014-10-18'),90);
Query OK, 1 row affected (0.13 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (27,'Niranjan',DATE('2014-10-18'),550);
Query OK, 1 row affected (0.10 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (65,'Kuldeep',DATE('2012-04-05'),460);
Query OK, 1 row affected (0.14 sec)
```

```sql
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(125,'Rajeev',DATE('2019-01-02'),82);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(41,'Atmanand',DATE('2013-04-19'),270);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(128,'Jothiprakash',DATE('2011-08-22'),650);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(65,'Shubham',DATE('2013-04-19'),460);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
```

```
(23,'Rishabh',DATE('2012-12-17'),540);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(242,'Rohan',DATE('2019-01-027'),60);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(65,'Akash',DATE('2018-12-27'),460);
insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values
(22,'Amit',DATE('2013-04-19'),120.4);
```

```
mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (125,'Rajeev',DATE('2019-01-02'),82);
Query OK, 1 row affected (0.20 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (41,'Atmanand',DATE('2013-04-19'),270);
Query OK, 1 row affected (0.17 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (128,'Jothiprakash',DATE('2011-08-22'),650);
Query OK, 1 row affected (0.15 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (65,'Shubham',DATE('2013-04-19'),460);
Query OK, 1 row affected (0.09 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (23,'Rishabh',DATE('2012-12-17'),540);
Query OK, 1 row affected (0.11 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (242,'Rohan',DATE('2019-01-027'),60);
Query OK, 1 row affected (0.10 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (65,'Akash',DATE('2018-12-27'),460);
Query OK, 1 row affected (0.16 sec)

mysql> insert into purchase(product_id, buyer_name,purchase_date,price_in_USD) values (22,'Amit',DATE('2013-04-19'),120.4);
Query OK, 1 row affected (0.11 sec)
```

Show all the entries in product table :

```
select * from product;
```

```
mysql> select * from product;
+------------+------------------+-------------+-------------+----------------+
| product_id | product_name     | price_in_USD | category    | manufacturer   |
+------------+------------------+-------------+-------------+----------------+
|          2 | Smartphone       |         600 | Electronics | Huawei         |
|          7 | Mouse            |          40 | Electronics | Dell           |
|         12 | Laptop           |         500 | Electronics | Dell           |
|         14 | Air Conditioner  |         320 | Appliances  | Croma          |
|         20 | shoe             |          45 | Sports      | Skechers       |
|         22 | badminton        |        60.2 | Sports      | Li-ning        |
|         23 | Laptop           |         540 | Electronics | Asus           |
|         24 | Laptop           |         480 | Electronics | HP             |
|         26 | badminton        |          54 | Sports      | Yonex          |
|         27 | Laptop           |         550 | Electronics | Samsung        |
|         33 | shoe             |          75 | Sports      | Adidas         |
|         35 | Keyboard         |          34 | Electronics | HP             |
|         36 | Air Conditioner  |         200 | Appliances  | Samsung        |
|         41 | Air Conditioner  |         270 | Appliances  | Blue Star      |
|         42 | Laptop           |         900 | Electronics | Apple          |
|         47 | Laptop           |         450 | Electronics | Acer           |
|         63 | Air Conditioner  |         309 | Appliances  | Hitachi        |
|         64 | Solid State Drive |        115 | Electronics | Corsair        |
|         65 | Laptop           |         460 | Electronics | Lenovo         |
|         68 | Keyboard         |          12 | Electronics | Dell           |
|         69 | Mouse            |          35 | Electronics | Logitech       |
|         78 | Shirts           |          40 | Clothing    | John Players   |
|        102 | Smartphone       |         550 | Electronics | Samsung        |
|        124 | Smartphone       |         480 | Electronics | Motorola       |
|        125 | Shirts           |          41 | Clothing    | Peter England  |
|        128 | Smartphone       |         650 | Electronics | Apple          |
|        162 | Smartphone       |         380 | Electronics | Lenovo         |
|        201 | Shirts           |          35 | Clothing    | Zodiac         |
|        230 | badminton        |          45 | Sports      | Wilson         |
|        242 | shoe             |          60 | Sports      | Nike           |
|        256 | shoe             |          54 | Sports      | Reebok         |
|        279 | Laptop           |         650 | Electronics | Huawei         |
|        336 | Air Conditioner  |         210 | Appliances  | Huawei         |
|        345 | Shirts           |          65 | Clothing    | Arrow          |
|        352 | Mouse            |          30 | Electronics | HP             |
|        353 | Solid State Drive |        130 | Electronics | Samsung        |
|        421 | shoe             |        44.3 | Sports      | Xtep           |
|        462 | Shirts           |          50 | Clothing    | Louis Phillipe |
|        657 | Keyboard         |          20 | Electronics | Logitech       |
|        689 | Solid State Drive |        120 | Electronics | Kingston       |
+------------+------------------+-------------+-------------+----------------+
40 rows in set (0.00 sec)
```

Show all the entries in purchase table :

```
select * from purchase
```

```
mysql> select * from purchase;
+------------+--------------+---------------+-------------+
| product_id | buyer_name   | purchase_date | price_in_USD |
+------------+--------------+---------------+-------------+
|          7 | Abhinav      | 2014-10-18    |          12 |
|          7 | Gaurav       | 2012-12-11    |          24 |
|         14 | Manish       | 2019-01-02    |         320 |
|         14 | Yogendra     | 2012-12-17    |         640 |
|         22 | Amit         | 2013-04-19    |       120.4 |
|         22 | Avinash      | 2014-10-18    |       120.4 |
|         22 | Rajesh       | 2014-10-18    |        60.2 |
|         23 | Rajeshwar    | 2019-01-02    |         540 |
|         23 | Rishabh      | 2012-12-17    |         540 |
|         27 | Kamlesh      | 2011-08-22    |         550 |
|         27 | Niranjan     | 2014-10-18    |         550 |
|         41 | Atmanand     | 2013-04-19    |         270 |
|         42 | Budhar       | 2015-10-17    |         900 |
|         42 | Vinay        | 2013-04-19    |         900 |
|         63 | Udghosh      | 2012-04-05    |         309 |
|         65 | Akash        | 2018-12-27    |         460 |
|         65 | Kamal        | 2012-12-17    |         460 |
|         65 | Kuldeep      | 2012-04-05    |         460 |
|         65 | Mann         | 2013-04-19    |         460 |
|         65 | Neeraj       | 2018-12-27    |         460 |
|         65 | Rakesh       | 2014-10-18    |         460 |
|         65 | Shubham      | 2013-04-19    |         460 |
|         78 | Gaurang      | 2019-01-02    |          80 |
|         78 | Qamar        | 2012-08-01    |         160 |
|        125 | Apoorv       | 2018-12-27    |          42 |
|        125 | Rajeev       | 2019-01-02    |          82 |
|        128 | Jothiprakash | 2011-08-22    |         650 |
|        162 | Ajit         | 2018-12-27    |         380 |
|        162 | Virendra     | 2018-12-27    |         380 |
|        201 | Alam         | 2012-04-05    |          70 |
|        230 | Ankur        | 2014-10-18    |          90 |
|        242 | Pushkar      | 2012-12-17    |         240 |
|        242 | Rohan        | 2019-01-27    |          60 |
|        256 | Bodhisatva   | 2012-12-17    |          54 |
|        256 | Kamal        | 2011-08-22    |          54 |
|        256 | Pawan        | 2018-12-27    |          54 |
|        256 | Pratyush     | 2014-10-18    |         108 |
|        345 | Abhas        | 2015-10-17    |          65 |
|        345 | Ankit        | 2012-12-17    |         130 |
|        345 | Muneer       | 2015-10-17    |          65 |
|        345 | Niranjan     | 2012-02-28    |         130 |
+------------+--------------+---------------+-------------+
41 rows in set (0.00 sec)
```

Queries :
a. Find the date for which maximum number of product was
purchased.

```
select purchase_date
from purchase
group by purchase_date
having count(purchase_date) =
(select count(purchase_date)
from purchase
group by purchase_date
order by count(purchase_date) desc
limit 1);
```

```
mysql> select purchase_date
    -> from purchase
    -> group by purchase_date
    -> having count(purchase_date) =
    -> (select count(purchase_date)
    -> from purchase
    -> group by purchase_date
    -> order by count(purchase_date) desc
    -> limit 1);
+---------------+
| purchase_date |
+---------------+
| 2014-10-18    |
+---------------+
1 row in set (0.00 sec)
```

b. Find the manufacturer name and products which manufactures more than 2 product.

```
select product.manufacturer, product.product_name
from product
where manufacturer in (
select manufacturer
from product
group by manufacturer
having count(product_id) > 2);
```

```
mysql> select product.manufacturer, product.product_name
    -> from product
    -> where manufacturer in (
    -> select manufacturer
    -> from product
    -> group by manufacturer
    -> having count(product_id) > 2);
+--------------+------------------+
| manufacturer | product_name     |
+--------------+------------------+
| Huawei       | Smartphone       |
| Dell         | Mouse            |
| Dell         | Laptop           |
| HP           | Laptop           |
| Samsung      | Laptop           |
| HP           | Keyboard         |
| Samsung      | Air Conditioner  |
| Dell         | Keyboard         |
| Samsung      | Smartphone       |
| Huawei       | Laptop           |
| Huawei       | Air Conditioner  |
| HP           | Mouse            |
| Samsung      | Solid State Drive |
+--------------+------------------+
13 rows in set (0.00 sec)
```

c. Find the manufacturer name and products which manufactures more than 1 product and which has been purchased by at least 1 customer.

```
select product.manufacturer, product.product_name
from
(select manufacturer from product group by manufacturer having
count(product_id) > 1) as manufactures_more_than_one, product
where product.manufacturer = manufactures_more_than_one.manufacturer
and product.product_id in (select product_id from purchase);
```

```
mysql> select product.manufacturer, product.product_name
    -> from
    -> (select manufacturer from product group by manufacturer having count(product_id) > 1) as manufactures_more
_than_one, product
    -> where product.manufacturer = manufactures_more_than_one.manufacturer
    -> and product.product_id in (select product_id from purchase);
+--------------+--------------+
| manufacturer | product_name |
+--------------+--------------+
| Dell         | Mouse        |
| Samsung      | Laptop       |
| Apple        | Laptop       |
| Lenovo       | Laptop       |
| Apple        | Smartphone   |
| Lenovo       | Smartphone   |
+--------------+--------------+
6 rows in set (0.00 sec)
```

d. Find product details sort by purchase date from latest to oldest.

```sql
select product.product_id, product.product_name, product.price_in_USD,
product.category, product.manufacturer, purchase.purchase_date
from product, purchase
where product.product_id = purchase.product_id
order by purchase.purchase_date desc;
```

```
mysql> select product.product_id, product.product_name, product.price_in_USD, product.category, product.manufacturer, purchase.purchase_date
    -> from product, purchase
    -> where product.product_id = purchase.product_id
    -> order by purchase.purchase_date desc;
+------------+----------------+-------------+-------------+----------------+---------------+
| product_id | product_name   | price_in_USD | category    | manufacturer   | purchase_date |
+------------+----------------+-------------+-------------+----------------+---------------+
|        242 | shoe           |          60 | Sports      | Nike           | 2019-01-27    |
|         14 | Air Conditioner |         320 | Appliances  | Croma          | 2019-01-02    |
|         23 | Laptop         |         540 | Electronics | Asus           | 2019-01-02    |
|        125 | Shirts         |          41 | Clothing    | Peter England  | 2019-01-02    |
|         78 | Shirts         |          40 | Clothing    | John Players   | 2019-01-02    |
|         65 | Laptop         |         460 | Electronics | Lenovo         | 2018-12-27    |
|        162 | Smartphone     |         380 | Electronics | Lenovo         | 2018-12-27    |
|        162 | Smartphone     |         380 | Electronics | Lenovo         | 2018-12-27    |
|        256 | shoe           |          54 | Sports      | Reebok         | 2018-12-27    |
|         65 | Laptop         |         460 | Electronics | Lenovo         | 2018-12-27    |
|        125 | Shirts         |          41 | Clothing    | Peter England  | 2018-12-27    |
|        345 | Shirts         |          65 | Clothing    | Arrow          | 2015-10-17    |
|         42 | Laptop         |         900 | Electronics | Apple          | 2015-10-17    |
|        345 | Shirts         |          65 | Clothing    | Arrow          | 2015-10-17    |
|        256 | shoe           |          54 | Sports      | Reebok         | 2014-10-18    |
|         65 | Laptop         |         460 | Electronics | Lenovo         | 2014-10-18    |
|        230 | badminton      |          45 | Sports      | Wilson         | 2014-10-18    |
|          7 | Mouse          |          40 | Electronics | Dell           | 2014-10-18    |
|         27 | Laptop         |         550 | Electronics | Samsung        | 2014-10-18    |
|         22 | badminton      |        60.2 | Sports      | Li-ning        | 2014-10-18    |
|         22 | badminton      |        60.2 | Sports      | Li-ning        | 2014-10-18    |
|         65 | Laptop         |         460 | Electronics | Lenovo         | 2013-04-19    |
|         65 | Laptop         |         460 | Electronics | Lenovo         | 2013-04-19    |
|         42 | Laptop         |         900 | Electronics | Apple          | 2013-04-19    |
|         41 | Air Conditioner |         270 | Appliances  | Blue Star      | 2013-04-19    |
|         22 | badminton      |        60.2 | Sports      | Li-ning        | 2013-04-19    |
|         65 | Laptop         |         460 | Electronics | Lenovo         | 2012-12-17    |
|        345 | Shirts         |          65 | Clothing    | Arrow          | 2012-12-17    |
|         23 | Laptop         |         540 | Electronics | Asus           | 2012-12-17    |
|        256 | shoe           |          54 | Sports      | Reebok         | 2012-12-17    |
|         14 | Air Conditioner |         320 | Appliances  | Croma          | 2012-12-17    |
|        242 | shoe           |          60 | Sports      | Nike           | 2012-12-17    |
|          7 | Mouse          |          40 | Electronics | Dell           | 2012-12-11    |
|         78 | Shirts         |          40 | Clothing    | John Players   | 2012-08-01    |
|        201 | Shirts         |          35 | Clothing    | Zodiac         | 2012-04-05    |
|         65 | Laptop         |         460 | Electronics | Lenovo         | 2012-04-05    |
|         63 | Air Conditioner |         309 | Appliances  | Hitachi        | 2012-04-05    |
|        345 | Shirts         |          65 | Clothing    | Arrow          | 2012-02-28    |
|        256 | shoe           |          54 | Sports      | Reebok         | 2011-08-22    |
|        128 | Smartphone     |         650 | Electronics | Apple          | 2011-08-22    |
|         27 | Laptop         |         550 | Electronics | Samsung        | 2011-08-22    |
+------------+----------------+-------------+-------------+----------------+---------------+
41 rows in set (0.00 sec)
```

e. Find product details which has been bought by more than 2 customers.

```sql
select product.product_id, product.product_name, product.price_in_USD,
product.category, product.manufacturer, count(product.product_id) as bought_by
from product, purchase
where product.product_id = purchase.product_id
group by purchase.product_id
having count(purchase.product_id) > 2;
```

```
mysql> select product.product_id, product.product_name, product.price_in_USD, product.category, product.manufactu
rer, count(product.product_id) as bought_by
    -> from product, purchase
    -> where product.product_id = purchase.product_id
    -> group by purchase.product_id
    -> having count(purchase.product_id) > 2;
+------------+--------------+--------------+-------------+--------------+-----------+
| product_id | product_name | price_in_USD | category    | manufacturer | bought_by |
+------------+--------------+--------------+-------------+--------------+-----------+
|         22 | badminton    |         60.2 | Sports      | Li-ning      |         3 |
|         65 | Laptop       |          460 | Electronics | Lenovo       |         7 |
|        256 | shoe         |           54 | Sports      | Reebok       |         4 |
|        345 | Shirts       |           65 | Clothing    | Arrow        |         4 |
+------------+--------------+--------------+-------------+--------------+-----------+
4 rows in set (0.00 sec)
```

f. Find all the product whose price > avg price of the product.

```
select *
from product
where product.price_in_USD > (select avg(price_in_USD) from product);
```

```
mysql> select *
    -> from product
    -> where product.price_in_USD > (select avg(price_in_USD) from product);
+------------+---------------+--------------+-------------+--------------+
| product_id | product_name  | price_in_USD | category    | manufacturer |
+------------+---------------+--------------+-------------+--------------+
|          2 | Smartphone    |          600 | Electronics | Huawei       |
|         12 | Laptop        |          500 | Electronics | Dell         |
|         14 | Air Conditioner |        320 | Appliances  | Croma        |
|         23 | Laptop        |          540 | Electronics | Asus         |
|         24 | Laptop        |          480 | Electronics | HP           |
|         27 | Laptop        |          550 | Electronics | Samsung      |
|         41 | Air Conditioner |        270 | Appliances  | Blue Star    |
|         42 | Laptop        |          900 | Electronics | Apple        |
|         47 | Laptop        |          450 | Electronics | Acer         |
|         63 | Air Conditioner |        309 | Appliances  | Hitachi      |
|         65 | Laptop        |          460 | Electronics | Lenovo       |
|        102 | Smartphone    |          550 | Electronics | Samsung      |
|        124 | Smartphone    |          480 | Electronics | Motorola     |
|        128 | Smartphone    |          650 | Electronics | Apple        |
|        162 | Smartphone    |          380 | Electronics | Lenovo       |
|        279 | Laptop        |          650 | Electronics | Huawei       |
+------------+---------------+--------------+-------------+--------------+
16 rows in set (0.00 sec)
```

g. Find product details which has not been purchased by customers yet.

```
select *
```

```
from product
where product_id not in (select product_id from purchase group by product_id);
```

```
mysql> select *
    -> from product
    -> where product_id not in (select product_id from purchase group by product_id);
+------------+-------------------+--------------+-------------+----------------+
| product_id | product_name      | price_in_USD | category    | manufacturer   |
+------------+-------------------+--------------+-------------+----------------+
|          2 | Smartphone        |          600 | Electronics | Huawei         |
|         12 | Laptop            |          500 | Electronics | Dell           |
|         20 | shoe              |           45 | Sports      | Skechers       |
|         24 | Laptop            |          480 | Electronics | HP             |
|         26 | badminton         |           54 | Sports      | Yonex          |
|         33 | shoe              |           75 | Sports      | Adidas         |
|         35 | Keyboard          |           34 | Electronics | HP             |
|         36 | Air Conditioner   |          200 | Appliances  | Samsung        |
|         47 | Laptop            |          450 | Electronics | Acer           |
|         64 | Solid State Drive |          115 | Electronics | Corsair        |
|         68 | Keyboard          |           12 | Electronics | Dell           |
|         69 | Mouse             |           35 | Electronics | Logitech       |
|        102 | Smartphone        |          550 | Electronics | Samsung        |
|        124 | Smartphone        |          480 | Electronics | Motorola       |
|        279 | Laptop            |          650 | Electronics | Huawei         |
|        336 | Air Conditioner   |          210 | Appliances  | Huawei         |
|        352 | Mouse             |           30 | Electronics | HP             |
|        353 | Solid State Drive |          130 | Electronics | Samsung        |
|        421 | shoe              |         44.3 | Sports      | Xtep           |
|        462 | Shirts            |           50 | Clothing    | Louis Phillipe |
|        657 | Keyboard          |           20 | Electronics | Logitech       |
|        689 | Solid State Drive |          120 | Electronics | Kingston       |
+------------+-------------------+--------------+-------------+----------------+
22 rows in set (0.00 sec)
```

h. Find product details whose name starts with letter a or ends with e.

```
select *
from product
where product_name like 'a%' or product_name like '%e';
```

```
mysql> select *
    -> from product
    -> where product_name like 'a%' or product_name like '%e';
+------------+-------------------+-------------+-------------+--------------+
| product_id | product_name      | price_in_USD | category    | manufacturer |
+------------+-------------------+-------------+-------------+--------------+
|          2 | Smartphone        |         600 | Electronics | Huawei       |
|          7 | Mouse             |          40 | Electronics | Dell         |
|         14 | Air Conditioner   |         320 | Appliances  | Croma        |
|         20 | shoe              |          45 | Sports      | Skechers     |
|         33 | shoe              |          75 | Sports      | Adidas       |
|         36 | Air Conditioner   |         200 | Appliances  | Samsung      |
|         41 | Air Conditioner   |         270 | Appliances  | Blue Star    |
|         63 | Air Conditioner   |         309 | Appliances  | Hitachi      |
|         64 | Solid State Drive |         115 | Electronics | Corsair      |
|         69 | Mouse             |          35 | Electronics | Logitech     |
|        102 | Smartphone        |         550 | Electronics | Samsung      |
|        124 | Smartphone        |         480 | Electronics | Motorola     |
|        128 | Smartphone        |         650 | Electronics | Apple        |
|        162 | Smartphone        |         380 | Electronics | Lenovo       |
|        242 | shoe              |          60 | Sports      | Nike         |
|        256 | shoe              |          54 | Sports      | Reebok       |
|        336 | Air Conditioner   |         210 | Appliances  | Huawei       |
|        352 | Mouse             |          30 | Electronics | HP           |
|        353 | Solid State Drive |         130 | Electronics | Samsung      |
|        421 | shoe              |        44.3 | Sports      | Xtep         |
|        689 | Solid State Drive |         120 | Electronics | Kingston     |
+------------+-------------------+-------------+-------------+--------------+
21 rows in set (0.00 sec)
```

i. Find all companies that make some products with price < 100

```
select distinct manufacturer
from product
where price_in_USD < 100;
```

```
mysql> select distinct manufacturer
    -> from product
    -> where price_in_USD < 100;
+----------------+
| manufacturer   |
+----------------+
| Dell           |
| Skechers       |
| Li-ning        |
| Yonex          |
| Adidas         |
| HP             |
| Logitech       |
| John Players   |
| Peter England  |
| Zodiac         |
| Wilson         |
| Nike           |
| Reebok         |
| Arrow          |
| Xtep           |
| Louis Phillipe |
+----------------+
16 rows in set (0.00 sec)
```
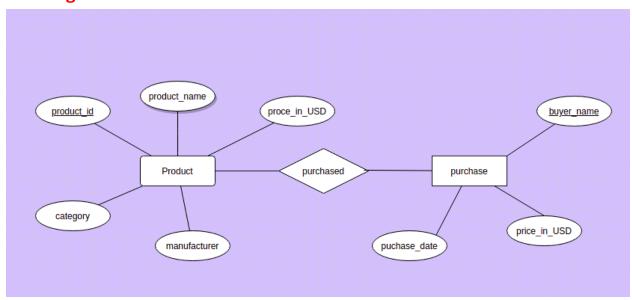
j. Find all companies s.t. all of their products have price < 100

```
select manufacturer
from
(select manufacturer, max(price_in_USD) as Max_price
from product
group by manufacturer) as product_with_max_price
```

```
where product_with_max_price.Max_price < 100;
```

```
mysql> select manufacturer
    -> from
    -> (select manufacturer, max(price_in_USD) as Max_price
    -> from product
    -> group by manufacturer) as product_with_max_price
    -> where product_with_max_price.Max_price < 100;
+----------------+
| manufacturer   |
+----------------+
| Skechers       |
| Li-ning        |
| Yonex          |
| Adidas         |
| Logitech       |
| John Players   |
| Peter England  |
| Zodiac         |
| Wilson         |
| Nike           |
| Reebok         |
| Arrow          |
| Xtep           |
| Louis Phillipe |
+----------------+
14 rows in set (0.00 sec)
```
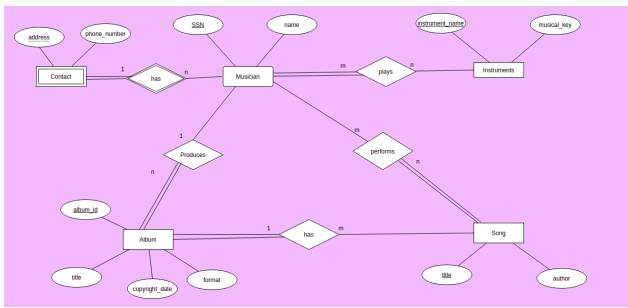
ER Diagram

Problem Set - 02

Draw appropriate ER Diagram


```
create table musician
(
    SSN integer not null,
    musician_name varchar(20) not null,
    address varchar(20) not null,
    primary key (SSN),
    foreign key (address) references contact(address)
);
```

```
mysql> create table musician
    -> (
    ->     SSN integer not null,
    ->     musician_name varchar(20) not null,
    ->     address varchar(20) not null,
    ->     primary key (SSN),
    ->     foreign key (address) references contact(address)
    -> );
Query OK, 0 rows affected (2.00 sec)
```

```
create table instrument
(
    instrument_name varchar(20) not null,
    SSN integer not null,
    musical_key varchar(20) not null,
    primary key (instrument_name, SSN),
    foreign key (SSN) references musician(SSN)
);
```

```
mysql> create table instrument
    -> (
    ->      instrument_name varchar(20) not null,
    ->      SSN integer not null,
    ->      musical_key varchar(20) not null,
    ->      primary key (instrument_name, SSN),
    ->      foreign key (SSN) references musician(SSN)
    -> );
Query OK, 0 rows affected (2.16 sec)
```

```
create table album
(
    album_id integer not null,
    title varchar(50) not null,
    copyright_date date not null,
    format varchar(2) not null,
    SSN integer not null,
    primary key (album_id),
    foreign key (SSN) references musician(SSN)
);
```

```
mysql> create table album
    -> (
    ->      album_id integer not null,
    ->      title varchar(50) not null,
    ->      copyright_date date not null,
    ->      format varchar(2) not null,
    ->      SSN integer not null,
    ->      primary key (album_id),
    ->      foreign key (SSN) references musician(SSN)
    -> );
Query OK, 0 rows affected (1.71 sec)
```

```
create table song
(
    title varchar(20) not null,
    SSN integer not null,
    author varchar(20) not null,
    album_id integer not null,
    primary key (title, SSN),
    foreign key (SSN) references musician(SSN),
    foreign key (album_id) references album(album_id)
);
```

```
mysql> create table song
    -> (
    ->      title varchar(20) not null,
    ->      SSN integer not null,
    ->      author varchar(20) not null,
    ->      album_id integer not null,
    ->      primary key (title, SSN),
    ->      foreign key (SSN) references musician(SSN),
    ->      foreign key (album_id) references album(album_id)
    -> );
Query OK, 0 rows affected (1.66 sec)
```

```
insert into contact(address, phone_number) values ('West Bengal',123456789);
insert into contact(address, phone_number) values ('Mumbai',987654321);
insert into contact(address, phone_number) values ('Hyderabad',456789123);
insert into contact(address, phone_number) values ('Chennai',159478632);
insert into contact(address, phone_number) values ('Kanpur',658974213);
insert into contact(address, phone_number) values ('Jaipur',325698741);
```

```
mysql> insert into contact(address, phone_number) values ('West Bengal',123456789);
Query OK, 1 row affected (0.14 sec)

mysql> insert into contact(address, phone_number) values ('Mumbai',987654321);
Query OK, 1 row affected (0.14 sec)

mysql> insert into contact(address, phone_number) values ('Hyderabad',456789123);
Query OK, 1 row affected (0.15 sec)

mysql> insert into contact(address, phone_number) values ('Chennai',159478632);
Query OK, 1 row affected (0.16 sec)

mysql> insert into contact(address, phone_number) values ('Kanpur',658974213);
Query OK, 1 row affected (0.08 sec)

mysql> insert into contact(address, phone_number) values ('Jaipur',325698741);
Query OK, 1 row affected (0.15 sec)
```

```
insert into musician(SSN, musician_name,address) values (1,'Arijit Singh','West
Bengal');
insert into musician(SSN, musician_name,address) values (2,'Kumar
Sanu','Chennai');
insert into musician(SSN, musician_name,address) values (3,'Neha
Kakkar','Mumbai');
insert into musician(SSN, musician_name,address) values (4,'Atif Aslam','West
Bengal');
insert into musician(SSN, musician_name,address) values (5,'Salman
Khan','Jaipur');
insert into musician(SSN, musician_name,address) values (6,'K.K.','Kanpur');
insert into musician(SSN, musician_name,address) values (7,'Akriti
Kakar','Hyderabad');
insert into musician(SSN, musician_name,address) values (8,'Alka
Ajith','Kanpur');
```

```
mysql> insert into musician(SSN, musician_name,address) values (1,'Arijit Singh','West Bengal');
Query OK, 1 row affected (0.17 sec)

mysql> insert into musician(SSN, musician_name,address) values (2,'Kumar Sanu','Chennai');
Query OK, 1 row affected (0.10 sec)

mysql> insert into musician(SSN, musician_name,address) values (3,'Neha Kakkar','Mumbai');
Query OK, 1 row affected (0.16 sec)

mysql> insert into musician(SSN, musician_name,address) values (4,'Atif Aslam','West Bengal');
Query OK, 1 row affected (0.12 sec)

mysql> insert into musician(SSN, musician_name,address) values (5,'Salman Khan','Jaipur');
Query OK, 1 row affected (0.08 sec)

mysql> insert into musician(SSN, musician_name,address) values (6,'K.K.','Kanpur');
Query OK, 1 row affected (0.12 sec)

mysql> insert into musician(SSN, musician_name,address) values (7,'Akriti Kakar','Hyderabad');
Query OK, 1 row affected (0.14 sec)

mysql> insert into musician(SSN, musician_name,address) values (8,'Alka Ajith','Kanpur');
Query OK, 1 row affected (0.23 sec)
```

```
insert into instrument(instrument_name, SSN,musical_key) values
('Cornet',1,'C');
insert into instrument(instrument_name, SSN,musical_key) values
('Trombone',1,'B-flat');
insert into instrument(instrument_name, SSN,musical_key) values
('Guitar',2,'E-flat');
insert into instrument(instrument_name, SSN,musical_key) values
('Xylophone',2,'E-flat');
insert into instrument(instrument_name, SSN,musical_key) values ('Organ
pipes',3,'C');
insert into instrument(instrument_name, SSN,musical_key) values ('Galtons
Whistle',4,'C');
insert into instrument(instrument_name, SSN,musical_key) values
('Cornet',5,'C');
insert into instrument(instrument_name, SSN,musical_key) values
('Trombone',6,'B-flat');
insert into instrument(instrument_name, SSN,musical_key) values
('Cornet',7,'C,');
insert into instrument(instrument_name, SSN,musical_key) values
('Trombone',8,'B-flat');
```

```
mysql> insert into instrument(instrument_name, SSN,musical_key) values ('Cornet',1,'C');
Query OK, 1 row affected (0.15 sec)

mysql> insert into instrument(instrument_name, SSN,musical_key) values ('Trombone',1,'B-flat');
Query OK, 1 row affected (0.11 sec)

mysql> insert into instrument(instrument_name, SSN,musical_key) values ('Guitar',2,'E-flat');

Query OK, 1 row affected (0.11 sec)

mysql> insert into instrument(instrument_name, SSN,musical_key) values ('Xylophone',2,'E-flat');
Query OK, 1 row affected (0.15 sec)

mysql> insert into instrument(instrument_name, SSN,musical_key) values ('Organ pipes',3,'C');
Query OK, 1 row affected (0.11 sec)

mysql> insert into instrument(instrument_name, SSN,musical_key) values ('Galtons Whistle',4,'C');
Query OK, 1 row affected (0.09 sec)

mysql> insert into instrument(instrument_name, SSN,musical_key) values ('Cornet',5,'C');
Query OK, 1 row affected (0.40 sec)

mysql> insert into instrument(instrument_name, SSN,musical_key) values ('Trombone',6,'B-flat');

Query OK, 1 row affected (0.19 sec)

mysql> insert into instrument(instrument_name, SSN,musical_key) values ('Cornet',7,'C,');
Query OK, 1 row affected (0.13 sec)

mysql> insert into instrument(instrument_name, SSN,musical_key) values ('Trombone',8,'B-flat');
Query OK, 1 row affected (0.15 sec)
```

```sql
insert into album(album_id, title,copyright_date, format, SSN) values
(1,'Udaan',DATE('2012-12-17'),'CD',5);
insert into album(album_id, title,copyright_date, format, SSN) values
(2,'Guzaarish',DATE('2011-10-17'),'MC',4);
insert into album(album_id, title,copyright_date, format, SSN) values (3,'Delhi
Belly',DATE('2015-08-05'),'MC',7);
insert into album(album_id, title,copyright_date, format, SSN) values
(4,'Rockstar',DATE('2017-12-10'),'CD',3);
```

```
mysql> insert into album(album_id, title,copyright_date, format, SSN) values (1,'Udaan',DATE('2012-12-17'),'CD',5);
Query OK, 1 row affected (0.13 sec)

mysql> insert into album(album_id, title,copyright_date, format, SSN) values (2,'Guzaarish',DATE('2011-10-17'),'MC',4);
Query OK, 1 row affected (0.12 sec)

mysql> insert into album(album_id, title,copyright_date, format, SSN) values (3,'Delhi Belly',DATE('2015-08-05'),'MC',7);

Query OK, 1 row affected (0.13 sec)

mysql> insert into album(album_id, title,copyright_date, format, SSN) values (4,'Rockstar',DATE('2017-12-10'),'CD',3);
Query OK, 1 row affected (0.20 sec)
```

```sql
insert into song(title,SSN,author, album_id) values ('Aaj Se Ter',1,'Anand
Bakshi',1);
insert into song(title,SSN,author, album_id) values ('Tere Mere',1,'Hasrat
Jaipuri',1);
insert into song(title,SSN,author, album_id) values ('Enna Sona',2,'Kedar
```

```
Sharma',2);
insert into song(title,SSN,author, album_id) values ('Humsafar',4,'Kaifi
Azmi',4);
insert into song(title,SSN,author, album_id) values ('Nazm
Nazm',5,'Indivar',3);
insert into song(title,SSN,author, album_id) values ('Aaj Din
Chadheya',2,'Majrooh Sultanpuri',4);
```

```
mysql>
mysql> insert into song(title,SSN,author, album_id) values ('Aaj Se Ter',1,'Anand Bakshi',1);
Query OK, 1 row affected (0.11 sec)

mysql> insert into song(title,SSN,author, album_id) values ('Tere Mere',1,'Hasrat Jaipuri',1);
Query OK, 1 row affected (0.15 sec)

mysql> insert into song(title,SSN,author, album_id) values ('Enna Sona',2,'Kedar Sharma',2);
Query OK, 1 row affected (0.19 sec)

mysql> insert into song(title,SSN,author, album_id) values ('Humsafar',4,'Kaifi Azmi',4);
Query OK, 1 row affected (0.37 sec)

mysql> insert into song(title,SSN,author, album_id) values ('Nazm Nazm',5,'Indivar',3);
Query OK, 1 row affected (0.20 sec)

mysql> insert into song(title,SSN,author, album_id) values ('Aaj Din Chadheya',2,'Majrooh Sultanpuri',4);
Query OK, 1 row affected (0.12 sec)
```

select * from contact;

```
mysql> select * from contact;
+-------------+--------------+
| address     | phone_number |
+-------------+--------------+
| Chennai     |    159478632 |
| Hyderabad   |    456789123 |
| Jaipur      |    325698741 |
| Kanpur      |    658974213 |
| Mumbai      |    987654321 |
| West Bengal |    123456789 |
+-------------+--------------+
6 rows in set (0.00 sec)
```

select * from song;

```
mysql> select * from song;
+--------------------+-----+-------------------------+----------+
| title              | SSN | author                  | album_id |
+--------------------+-----+-------------------------+----------+
| Aaj Din Chadheya   |   2 | Majrooh Sultanpuri      |        4 |
| Aaj Se Ter         |   1 | Anand Bakshi            |        1 |
| Enna Sona          |   2 | Kedar Sharma            |        2 |
| Humsafar           |   4 | Kaifi Azmi              |        4 |
| Nazm Nazm          |   5 | Indivar                 |        3 |
| Tere Mere          |   1 | Hasrat Jaipuri          |        1 |
+--------------------+-----+-------------------------+----------+
6 rows in set (0.00 sec)

mysql>
```

a. For each of the musician, find their mobile number and address.

```
select musician.musician_name, contact.address, contact.phone_number
from musician, contact
where musician.address = contact.address;
```

```
mysql> select musician.musician_name, contact.address, contact.phone_number
    -> from musician, contact
    -> where musician.address = contact.address;
+----------------+--------------+--------------+
| musician_name  | address      | phone_number |
+----------------+--------------+--------------+
| Kumar Sanu     | Chennai      |    159478632 |
| Akriti Kakar   | Hyderabad    |    456789123 |
| Salman Khan    | Jaipur       |    325698741 |
| K.K.           | Kanpur       |    658974213 |
| Alka Ajith     | Kanpur       |    658974213 |
| Neha Kakkar    | Mumbai       |    987654321 |
| Arijit Singh   | West Bengal  |    123456789 |
| Atif Aslam     | West Bengal  |    123456789 |
+----------------+--------------+--------------+
8 rows in set (0.00 sec)
```

b. Find the details of musicians who don't share same address.

```
select musician.SSN, musician.musician_name, musician.address,
```

```
contact.phone_number
from musician , contact
where musician.address = contact.address and
musician.address in (select address from musician group by address having
count(address)=1);
```

```
mysql> select musician.SSN, musician.musician_name, musician.address, contact.phone_number
    -> from musician , contact
    -> where musician.address = contact.address and
    -> musician.address in (select address from musician group by address having count(address)=1);
+-----+---------------+-----------+--------------+
| SSN | musician_name | address   | phone_number |
+-----+---------------+-----------+--------------+
|   2 | Kumar Sanu    | Chennai   |    159478632 |
|   7 | Akriti Kakar  | Hyderabad |    456789123 |
|   5 | Salman Khan   | Jaipur    |    325698741 |
|   3 | Neha Kakkar   | Mumbai    |    987654321 |
+-----+---------------+-----------+--------------+
4 rows in set (0.00 sec)
```

c. Find musicians who plays exactly 2 instruments and have performed in more than 1 songs.

d. For each of the musician, find the number of instruments each musician is playing.

```
select musician.musician_name, count(instrument.instrument_name)
from musician, instrument
where musician.SSN = instrument.SSN
group by instrument.SSN;
```

```
mysql> select musician.musician_name, count(instrument.instrument_name)
    -> from musician, instrument
    -> where musician.SSN = instrument.SSN
    -> group by instrument.SSN;
+---------------+-----------------------------------+
| musician_name | count(instrument.instrument_name) |
+---------------+-----------------------------------+
| Arijit Singh  |                                 2 |
| Kumar Sanu    |                                 2 |
| Neha Kakkar   |                                 1 |
| Atif Aslam    |                                 1 |
| Salman Khan   |                                 1 |
| K.K.          |                                 1 |
| Akriti Kakar  |                                 1 |
| Alka Ajith    |                                 1 |
+---------------+-----------------------------------+
8 rows in set (0.00 sec)
```

e. For each of the musician who plays more than 2 instrument, find the number of albums they are producing.