Sardar Vallabhbhai National Institute of Technology, Surat

Subject: DATABASE MANAGEMENT SYSYTEM

- **DBMS Assignment-8.**
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- **Roll No.: B110**
- **Admission No.: U20CS110**

A) Write a script to create the tables with the required constraints like primary key, foreign key, check constraint (not null, range, >0, etc.).

B) Write a script to add rows as mentioned above. And also add rows into Orders and Order_Products tables.

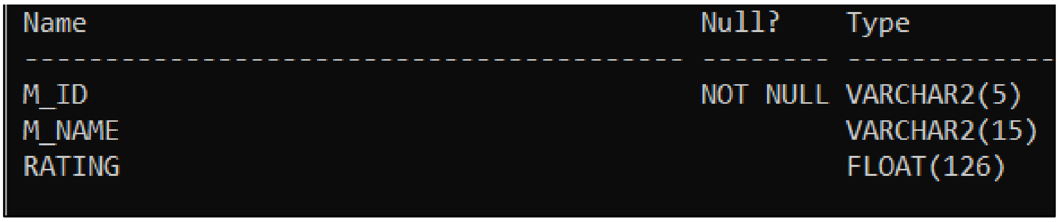
C) Write the SQL queries for the following. After successful execution of query, add it to the script, where all queries are available for the submission:

ANSWERS:

QA & QB:

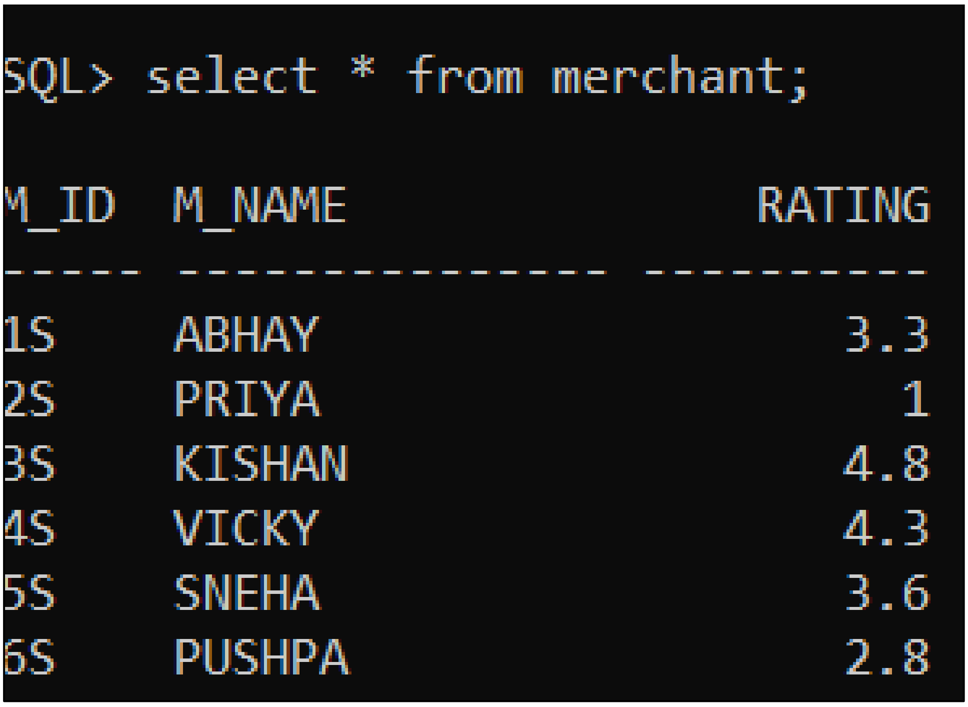
MERCHANT TABLE:

```
create table merchant(
M_id varchar(5) PRIMARY KEY,
M_name varchar(15),
Rating float CHECK(rating>=0 AND rating<=15));
```



```
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
 M_ID                                      NOT NULL VARCHAR2(5)
 M_NAME                                             VARCHAR2(15)
 RATING                                             FLOAT(126)
```

```
INSERT INTO MERCHANT VALUES('1S','ABHAY',3.3);
INSERT INTO MERCHANT VALUES('2S','PRIYA',1.0);
INSERT INTO MERCHANT VALUES('3S','KISHAN',4.8);
INSERT INTO MERCHANT VALUES('4S','VICKY',4.3);
INSERT INTO MERCHANT VALUES('5S','SNEHA',3.6);
INSERT INTO MERCHANT VALUES('6S','PUSHPA',2.8);
```



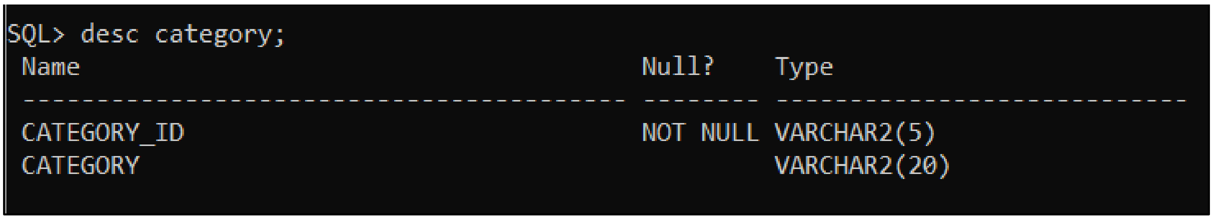
```
SQL> select * from merchant;

M_ID  M_NAME                   RATING
----- --------------- ----------
1S    ABHAY                       3.3
2S    PRIYA                         1
3S    KISHAN                      4.8
4S    VICKY                       4.3
5S    SNEHA                       3.6
6S    PUSHPA                      2.8
```

CATEGORY TABLE:

create table category(

category_id varchar(5) PRIMARY KEY,

category Varchar(20));



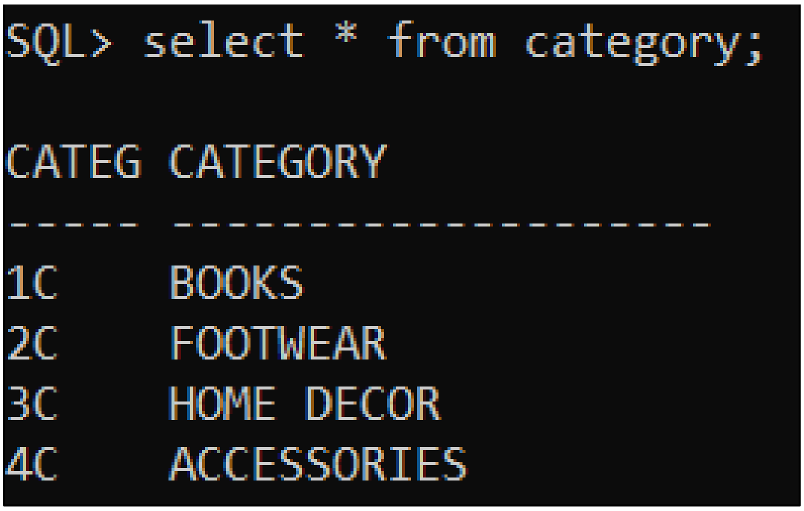
```
SQL> desc category;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CATEGORY_ID                               NOT NULL VARCHAR2(5)
 CATEGORY                                           VARCHAR2(20)
```

INSERT INTO CATEGORY VALUES('1C','BOOKS');

INSERT INTO CATEGORY VALUES('2C','FOOTWEAR');

INSERT INTO CATEGORY VALUES('3C','HOME DECOR');

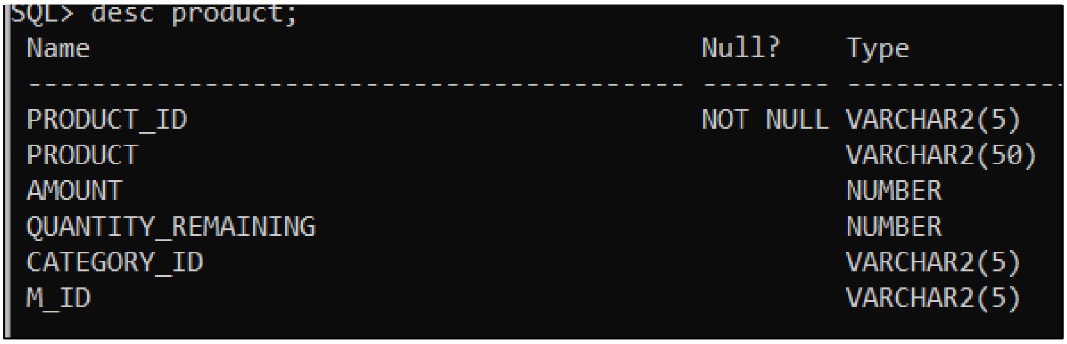
INSERT INTO CATEGORY VALUES('4C','ACCESSORIES');



```
SQL> select * from category;

CATEG CATEGORY
----- --------------------
1C    BOOKS
2C    FOOTWEAR
3C    HOME DECOR
4C    ACCESSORIES
```

PRODUCT TABLE:

```
create table product(
product_id varchar(5) PRIMARY KEY,
product varchar(50),
amount number,
quantity_remaining number,
category_id varchar(5),
m_id varchar(5),
FOREIGN KEY(category_id) REFERENCES category(category_id),
FOREIGN KEY(m_id) REFERENCES merchant(m_id));
```



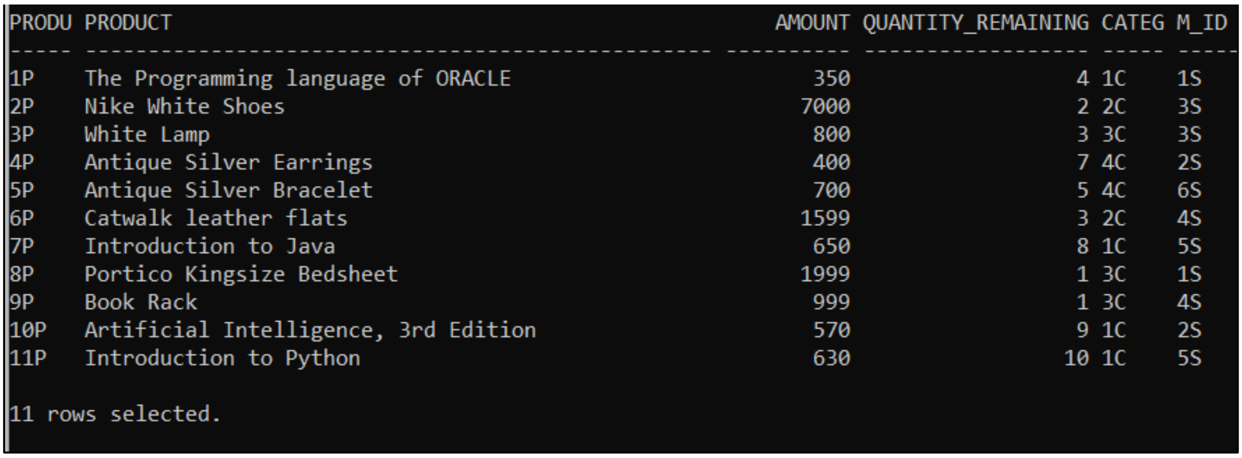
```
SQL> desc product;
 Name                                      Null?    Type
 ----------------------------------------- -------- -------------
 PRODUCT_ID                                NOT NULL VARCHAR2(5)
 PRODUCT                                            VARCHAR2(50)
 AMOUNT                                             NUMBER
 QUANTITY_REMAINING                                 NUMBER
 CATEGORY_ID                                        VARCHAR2(5)
 M_ID                                               VARCHAR2(5)
```

```
INSERT INTO PRODUCT VALUES('1P', 'The Programming language of ORACLE',350,4, '1C', '1S');
INSERT INTO PRODUCT VALUES('2P', 'Nike White Shoes ',7000,2, '2C','3S');
INSERT INTO PRODUCT VALUES('3P', 'White Lamp',800,3,'3C','3S');
INSERT INTO PRODUCT VALUES('4P','Antique Silver Earrings',400,7, '4C','2S');v
INSERT INTO PRODUCT VALUES('5P','Antique Silver Bracelet',700,5,'4C','6S');
INSERT INTO PRODUCT VALUES('6P','Catwalk leather flats',1599,3,'2C','4S');
INSERT INTO PRODUCT VALUES('7P','Introduction to Java',650,8,'1C','5S');
INSERT INTO PRODUCT VALUES('8P','Portico Kingsize Bedsheet',1999,1,'3C','1S');
```

INSERT INTO PRODUCT VALUES('9P','Book Rack',999,1,'3C','4S');

INSERT INTO PRODUCT VALUES('10P','Artificial Intelligence, 3^{rd} Edition',570,9,'1C','2S');

INSERT INTO PRODUCT VALUES('11P', 'Introduction to Python',630,10,'1C','5S');

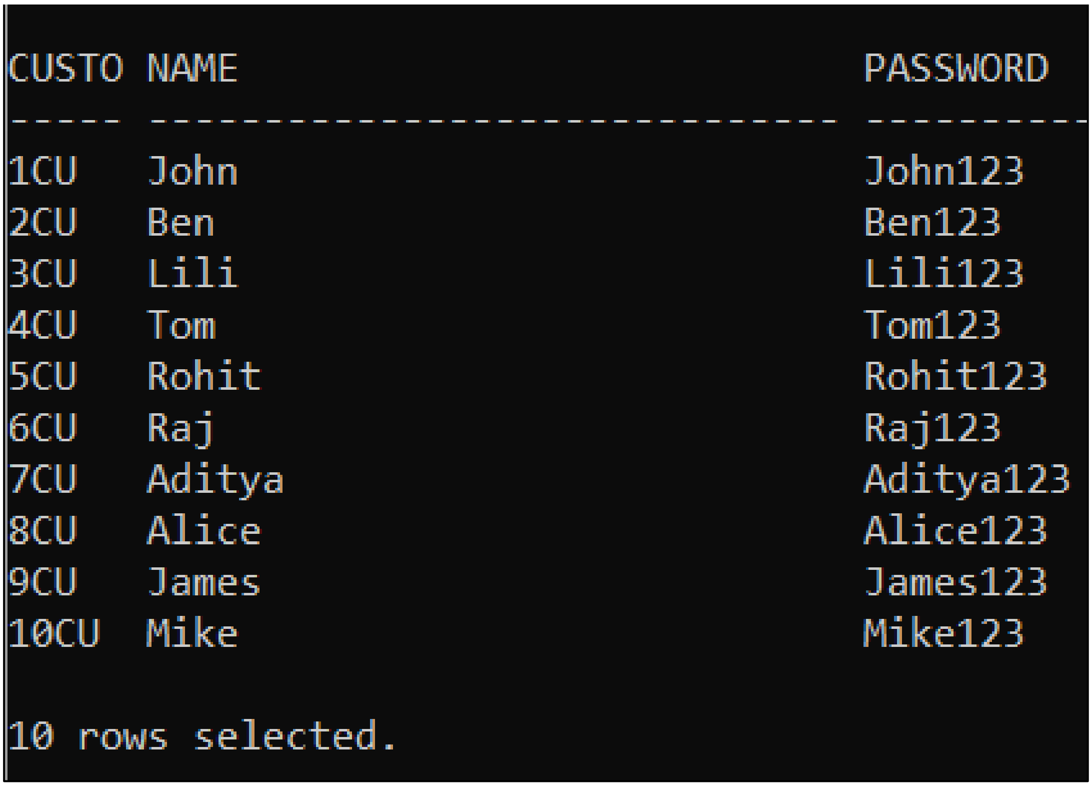


```
PRODU PRODUCT                                                AMOUNT QUANTITY_REMAINING CATEG M_ID
----- -------------------------------------------------- ---------- ------------------ ----- -----
1P    The Programming language of ORACLE                        350                  4 1C    1S
2P    Nike White Shoes                                         7000                  2 2C    3S
3P    White Lamp                                                800                  3 3C    3S
4P    Antique Silver Earrings                                   400                  7 4C    2S
5P    Antique Silver Bracelet                                   700                  5 4C    6S
6P    Catwalk leather flats                                    1599                  3 2C    4S
7P    Introduction to Java                                      650                  8 1C    5S
8P    Portico Kingsize Bedsheet                                1999                  1 3C    1S
9P    Book Rack                                                 999                  1 3C    4S
10P   Artificial Intelligence, 3rd Edition                      570                  9 1C    2S
11P   Introduction to Python                                    630                 10 1C    5S

11 rows selected.
```

CUSTOMER TABLE:

```
create table customer(
customer_id varchar(5) PRIMARY KEY,
name varchar(30) NOT NULL,
password varchar(25) NOT NULL);
```

```
INSERT INTO CUSTOMER VALUES('1CU', 'John', 'John123');
INSERT INTO CUSTOMER VALUES('2CU', 'Ben', 'Ben123');
INSERT INTO CUSTOMER VALUES('3CU', 'Lili', 'Lili123');
INSERT INTO CUSTOMER VALUES('4CU', 'Tom', 'Tom123');
INSERT INTO CUSTOMER VALUES('5CU', 'Rohit', 'Rohit123');
INSERT INTO CUSTOMER VALUES('6CU', 'Raj', 'Raj123');
INSERT INTO CUSTOMER VALUES('7CU', 'Aditya', 'Aditya123');
INSERT INTO CUSTOMER VALUES('8CU', 'Alice', 'Alice123');
INSERT INTO CUSTOMER VALUES('9CU', 'James', 'James123');
INSERT INTO CUSTOMER VALUES('10CU', 'Mike', 'Mike123');
```



```
CUSTO NAME                            PASSWORD
----- ------------------------------ ----------
1CU   John                           John123
2CU   Ben                            Ben123
3CU   Lili                           Lili123
4CU   Tom                            Tom123
5CU   Rohit                          Rohit123
6CU   Raj                            Raj123
7CU   Aditya                         Aditya123
8CU   Alice                          Alice123
9CU   James                          James123
10CU  Mike                           Mike123

10 rows selected.
```

ORDER TABLE:

create table orders(

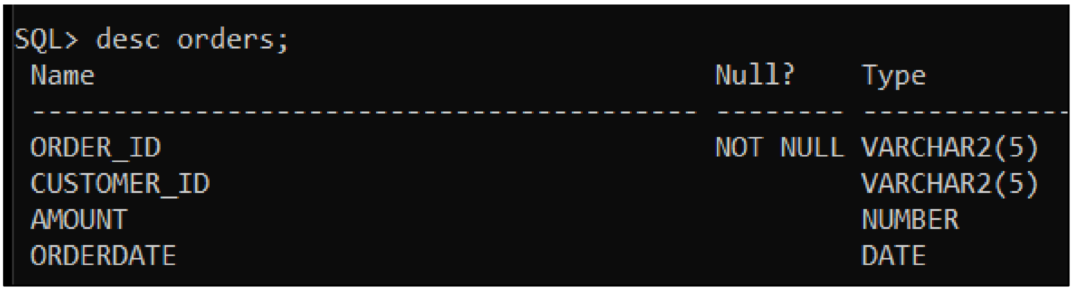
order_id varchar(5) PRIMARY KEY,

customer_id varchar(5),

amount number,

orderdate DATE,

FOREIGN KEY(customer_id) REFERENCES customer(customer_id));



```
SQL> desc orders;
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
 ORDER_ID                                  NOT NULL VARCHAR2(5)
 CUSTOMER_ID                                        VARCHAR2(5)
 AMOUNT                                             NUMBER
 ORDERDATE                                          DATE
```

INSERT INTO orders values('1O','1CU',350,'21-JAN-22');

INSERT INTO orders values('2O','1CU',350,'20-MAY-22');

INSERT INTO orders values('3O','2CU',800, '20-MAY-22');

INSERT INTO orders values('4O','3CU',400, '12-FEB-22');

INSERT INTO orders values('5O','4CU',630, '11-JAN-22');

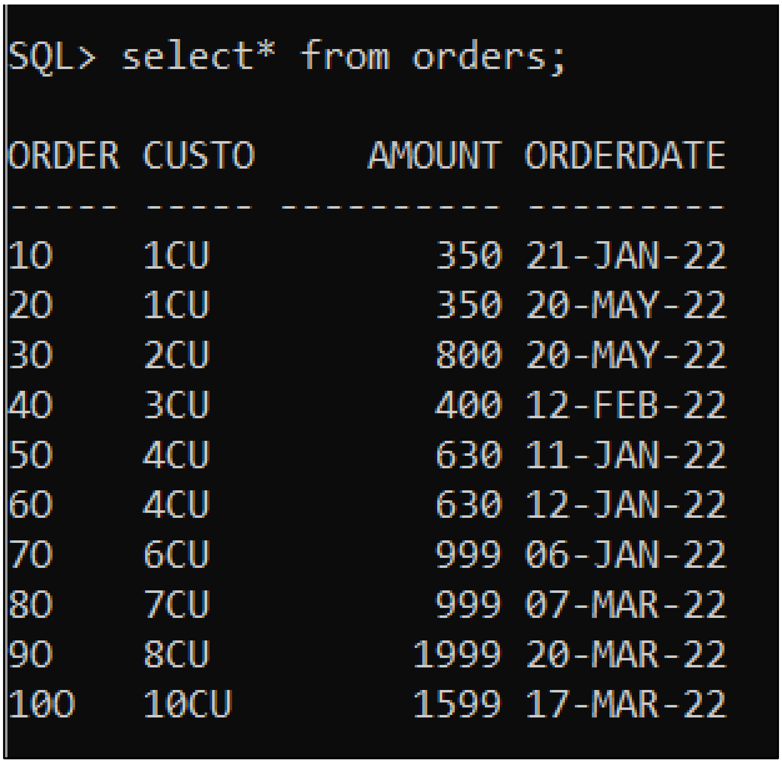
INSERT INTO orders values('6O','4CU',630, '12-JAN-22');

INSERT INTO orders values('7O','6CU',999, '06-JAN-22');

INSERT INTO orders values('8O','7CU',999, '07-MAR-22');

INSERT INTO orders values('9O','8CU',1999, '20-MAR-22');

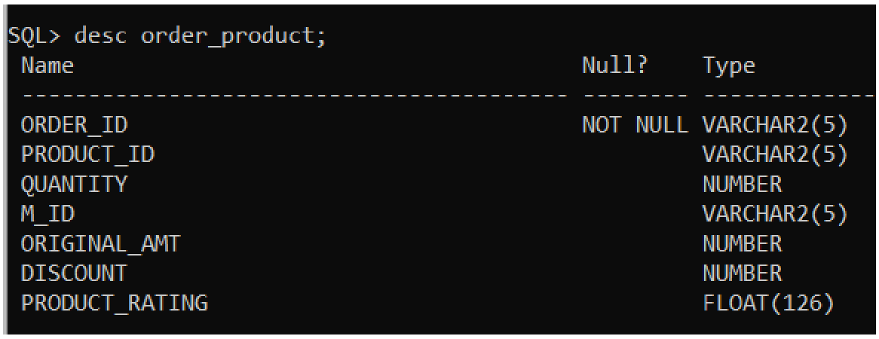
INSERT INTO orders values('10O','10CU',1599, '17-MAR-22');



```
SQL> select* from orders;

ORDER CUSTO     AMOUNT ORDERDATE
----- ----- ---------- ---------
1O    1CU          350 21-JAN-22
2O    1CU          350 20-MAY-22
3O    2CU          800 20-MAY-22
4O    3CU          400 12-FEB-22
5O    4CU          630 11-JAN-22
6O    4CU          630 12-JAN-22
7O    6CU          999 06-JAN-22
8O    7CU          999 07-MAR-22
9O    8CU         1999 20-MAR-22
10O   10CU        1599 17-MAR-22
```

ORDER_PRODUCT TABLE:

```
create table order_product(
order_id varchar(5) PRIMARY KEY,
product_id varchar(5),
quantity number,
m_id varchar(5),
original_amt number,
discount number,
product_rating float,
FOREIGN KEY(order_id) REFERENCES orders(order_id),
FOREIGN KEY(product_id) REFERENCES product(product_id),
FOREIGN KEY(m_id) REFERENCES merchant(m_id));
```



```
SQL> desc order_product;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ORDER_ID                                  NOT NULL VARCHAR2(5)
 PRODUCT_ID                                         VARCHAR2(5)
 QUANTITY                                           NUMBER
 M_ID                                               VARCHAR2(5)
 ORIGINAL_AMT                                       NUMBER
 DISCOUNT                                           NUMBER
 PRODUCT_RATING                                     FLOAT(126)
```

INSERT INTO ORDER_PRODUCT VALUES('1O','1P',1,'1S',350,0,4);

INSERT INTO ORDER_PRODUCT VALUES('2O','1P',1,'1S',350,0,5);

INSERT INTO ORDER_PRODUCT VALUES('3O','3P',1,'5S',800,0,4);

INSERT INTO ORDER_PRODUCT VALUES('4O','4P',1,'2S',400,0,3);

INSERT INTO ORDER_PRODUCT VALUES('5O','4P',1,'2S',400,0,2);

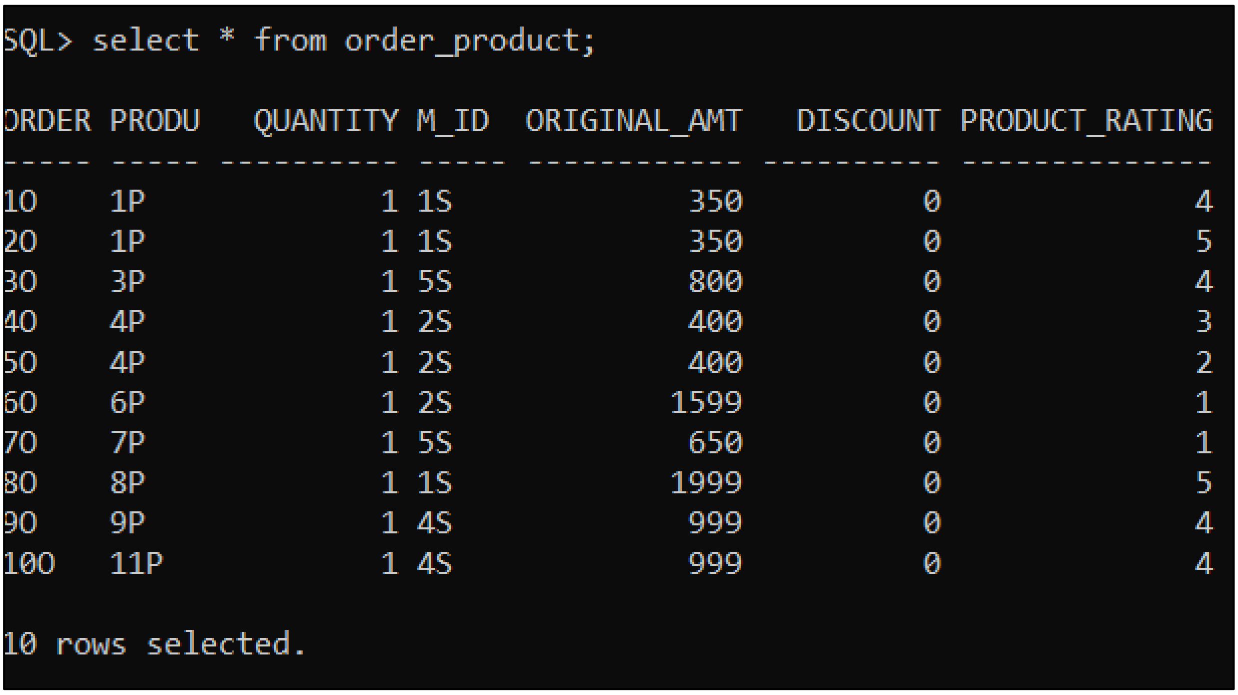
INSERT INTO ORDER_PRODUCT VALUES('6O','6P',1,'2S',1599,0,1);

INSERT INTO ORDER_PRODUCT VALUES('7O','7P',1,'5S',650,0,1);

INSERT INTO ORDER_PRODUCT VALUES('8O','8P',1,'1S',1999,0,5);

INSERT INTO ORDER_PRODUCT VALUES('9O','9P',1,'4S',999,0,4);

INSERT INTO ORDER_PRODUCT VALUES('10O','11P',1,'4S',999,0,4);

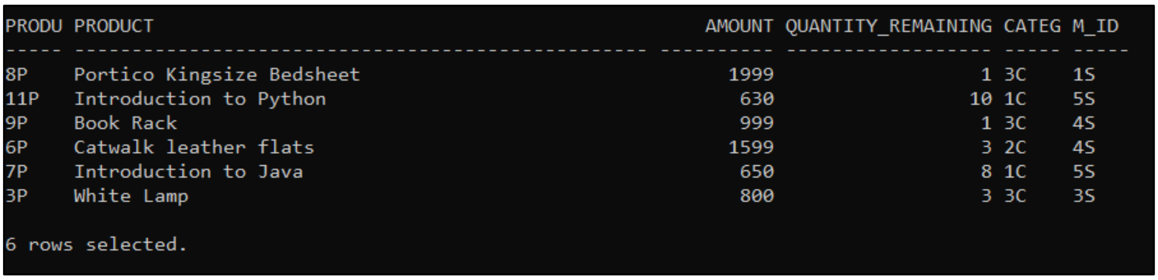


```
SQL> select * from order_product;

ORDER PRODU   QUANTITY M_ID  ORIGINAL_AMT   DISCOUNT PRODUCT_RATING
----- ----- ---------- ----- ------------ ---------- --------------
1O    1P             1 1S             350          0              4
2O    1P             1 1S             350          0              5
3O    3P             1 5S             800          0              4
4O    4P             1 2S             400          0              3
5O    4P             1 2S             400          0              2
6O    6P             1 2S            1599          0              1
7O    7P             1 5S             650          0              1
8O    8P             1 1S            1999          0              5
9O    9P             1 4S             999          0              4
10O   11P            1 4S             999          0              4

10 rows selected.
```

QC:

Q1. Display the lowest sold product details.

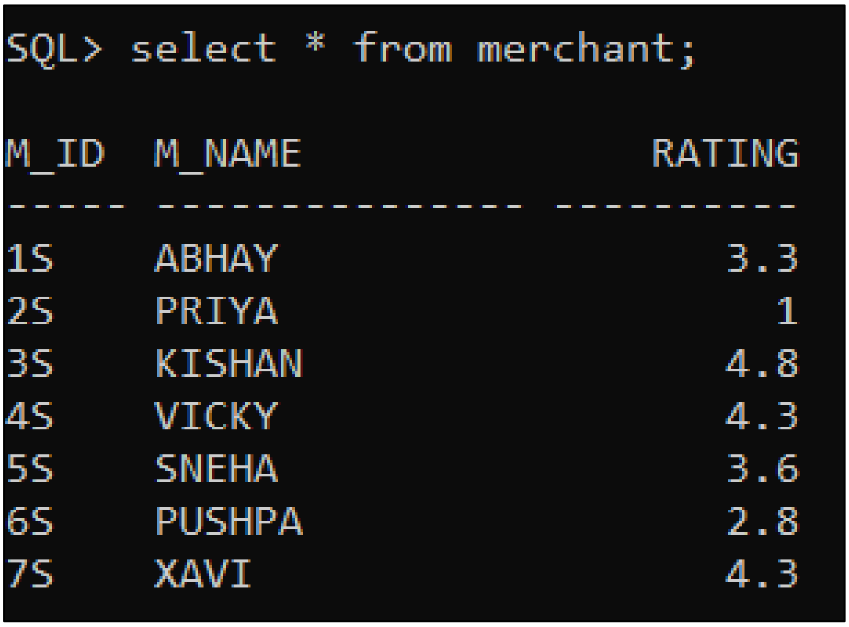
```
select * from product
where product_id IN (select product_id from
(select product_id,count(order_id) from order_product
 group by product_id
 HAVING COUNT(order_id) = (select MIN(count(order_id)) from order_product group by product_id)));
```



```
PRODU PRODUCT                                                AMOUNT QUANTITY_REMAINING CATEG M_ID
----- -------------------------------------------------- ---------- ------------------ ----- -----
8P    Portico Kingsize Bedsheet                                1999                  1 3C    1S
11P   Introduction to Python                                    630                 10 1C    5S
9P    Book Rack                                                 999                  1 3C    4S
6P    Catwalk leather flats                                    1599                  3 2C    4S
7P    Introduction to Java                                      650                  8 1C    5S
3P    White Lamp                                                800                  3 3C    3S

6 rows selected.
```

Q2. Add a new seller with all details.

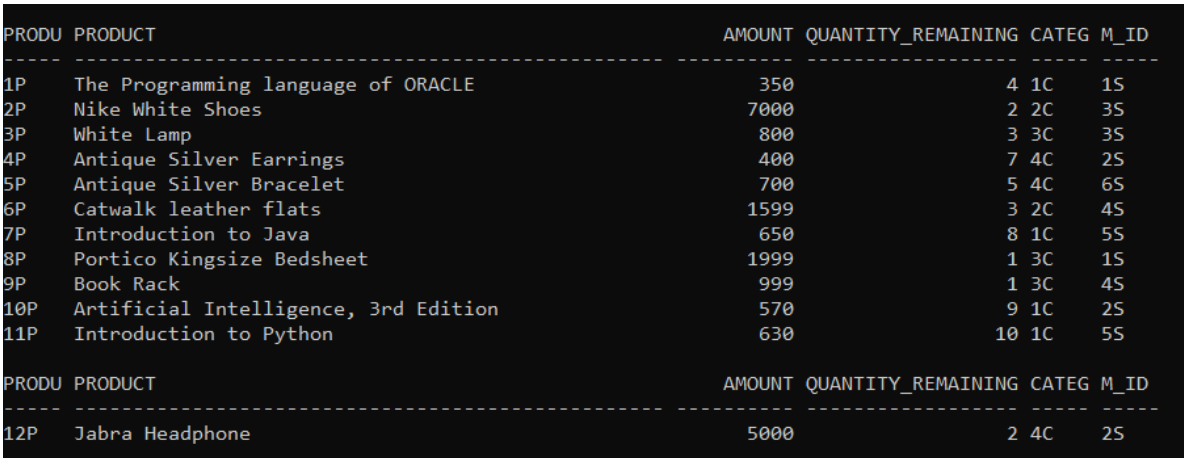
```
INSERT INTO MERCHANT VALUES('7S','XAVI',4.3);
```



```
SQL> select * from merchant;

M_ID  M_NAME                RATING
----- --------------- ----------
1S    ABHAY                  3.3
2S    PRIYA                    1
3S    KISHAN                 4.8
4S    VICKY                  4.3
5S    SNEHA                  3.6
6S    PUSHPA                 2.8
7S    XAVI                   4.3
```

Q3. Add a new product with all details.

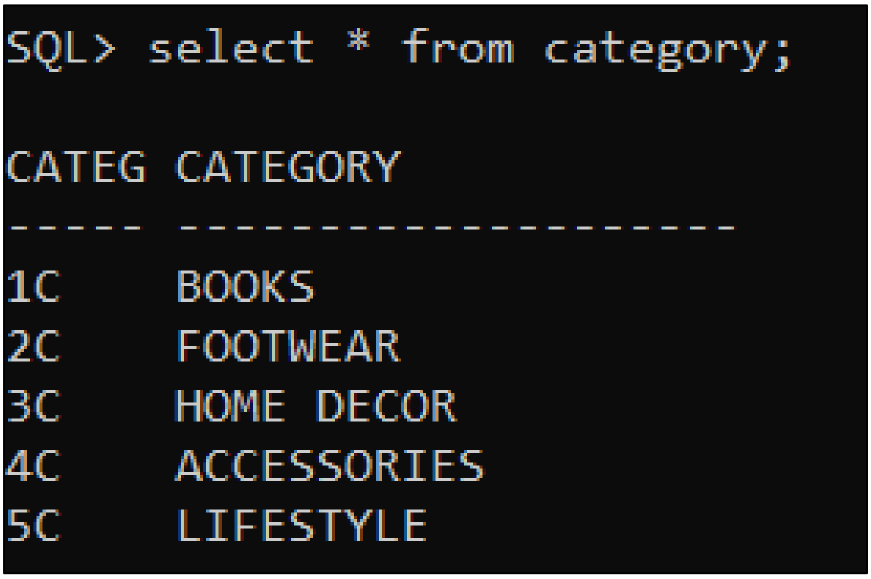
```
INSERT INTO PRODUCT VALUES('12P','Jabra Headphone',5000,2,'4C','2S');
```



```
PRODU PRODUCT                                                AMOUNT QUANTITY_REMAINING CATEG M_ID
----- -------------------------------------------------- ---------- ------------------ ----- -----
1P    The Programming language of ORACLE                        350                  4 1C    1S
2P    Nike White Shoes                                         7000                  2 2C    3S
3P    White Lamp                                                800                  3 3C    3S
4P    Antique Silver Earrings                                   400                  7 4C    2S
5P    Antique Silver Bracelet                                   700                  5 4C    6S
6P    Catwalk leather flats                                    1599                  3 2C    4S
7P    Introduction to Java                                      650                  8 1C    5S
8P    Portico Kingsize Bedsheet                                1999                  1 3C    1S
9P    Book Rack                                                 999                  1 3C    4S
10P   Artificial Intelligence, 3rd Edition                      570                  9 1C    2S
11P   Introduction to Python                                    630                 10 1C    5S

PRODU PRODUCT                                                AMOUNT QUANTITY_REMAINING CATEG M_ID
----- -------------------------------------------------- ---------- ------------------ ----- -----
12P   Jabra Headphone                                          5000                  2 4C    2S
```

Q4. Add a new category with all details.

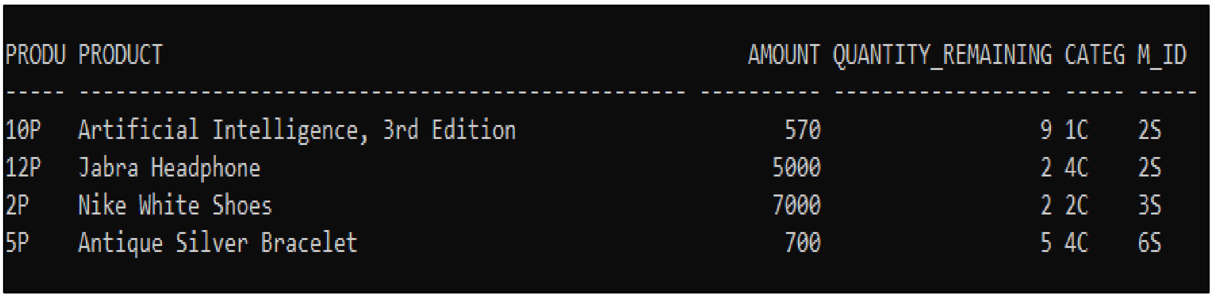
INSERT INTO CATEGORY VALUES('5C','LIFESTYLE');



```
SQL> select * from category;

CATEG CATEGORY
----- --------------------
1C    BOOKS
2C    FOOTWEAR
3C    HOME DECOR
4C    ACCESSORIES
5C    LIFESTYLE
```

Q5. Display the details of the products which have never sold.

select * from product where product_id NOT IN (select product_id from order_product);



```
PRODU PRODUCT                                                AMOUNT QUANTITY_REMAINING CATEG M_ID
----- -------------------------------------------------- ---------- ------------------ ----- -----
10P   Artificial Intelligence, 3rd Edition                      570                  9 1C    2S
12P   Jabra Headphone                                          5000                  2 4C    2S
2P    Nike White Shoes                                         7000                  2 2C    3S
5P    Antique Silver Bracelet                                   700                  5 4C    6S
```

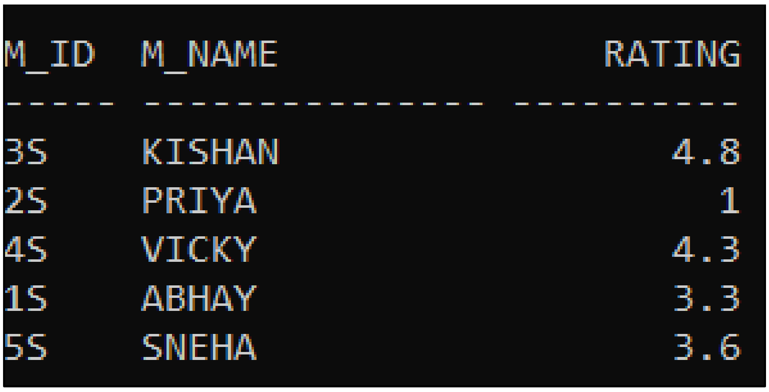
Q6. Display the details of the merchant who has not sold any product today.

select * from merchant

where m_id IN (select m_id from product

 where product_id IN (select product_id from order_product

where order_id IN (select order_id from orders
where NOT orderdate = SYSDATE)));



```
M_ID  M_NAME                  RATING
----- --------------- ----------
3S    KISHAN                     4.8
2S    PRIYA                        1
4S    VICKY                      4.3
1S    ABHAY                      3.3
5S    SNEHA                      3.6
```

Q7. Display the details of the merchant who has sold the highest amount of products today.

select * from merchant

where m_id IN (select m_id from orders, order_product

where orders.order_id=order_product.order_id

AND orderdate = '20-MAY-22'

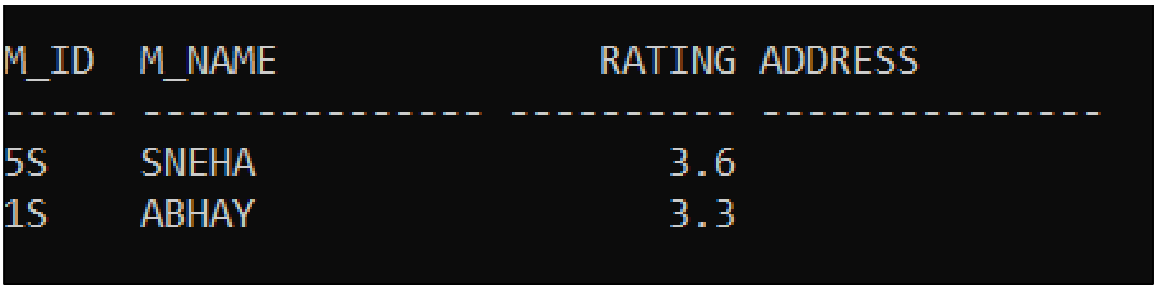
HAVING count(m_id) = (select max(count(m_id)) from orders, order_product

where orders.order_id=order_product.order_id

AND orderdate = '20-MAY-22'

group by m_id)

group by m_id);

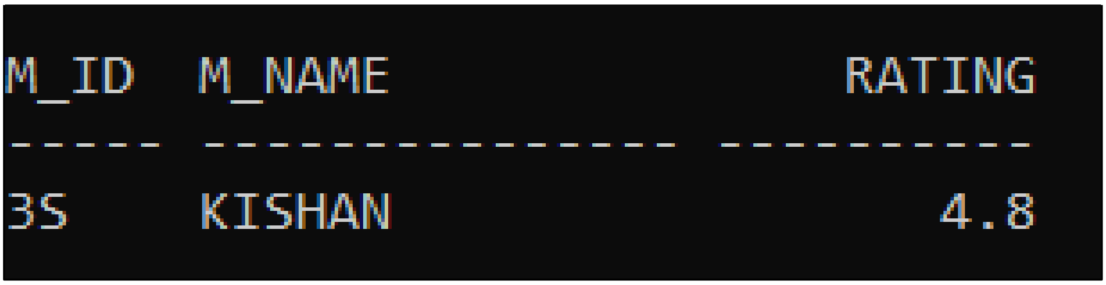


```
M_ID  M_NAME                  RATING ADDRESS
----- --------------- ---------- ---------------
5S    SNEHA                      3.6
1S    ABHAY                      3.3
```

Q8. Display the merchant details with the highest rating.

select * from merchant

where rating = (select max(rating) from merchant);



```
M_ID  M_NAME                  RATING
----- --------------- ----------
3S    KISHAN                     4.8
```

Q9. Display the customer detail who has repeated the same product purchase

select * from customer

where customer_id=(select customer_id

from(select customer_id, category_id, count(order_id)

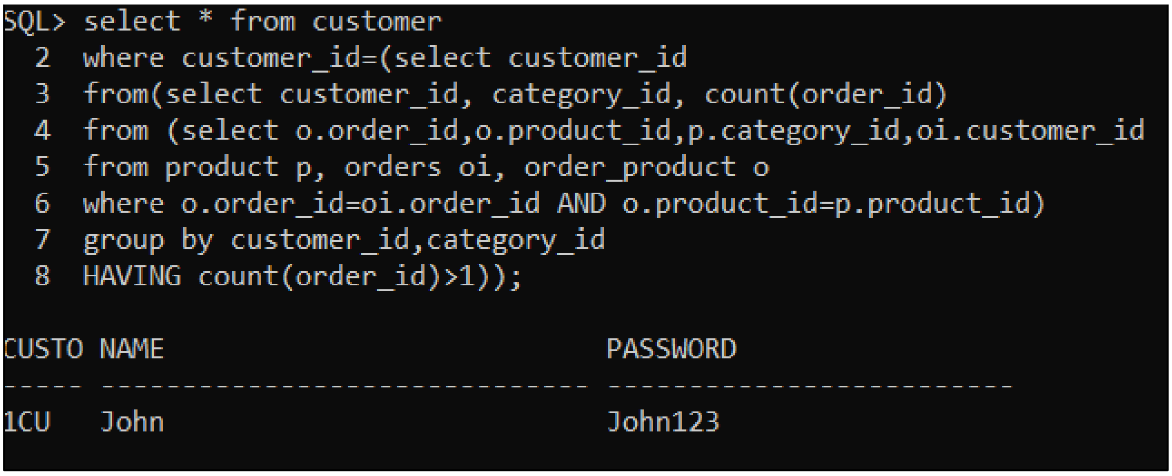
from (select o.order_id,o.product_id,p.category_id,oi.customer_id

from product p, orders oi, order_product o

where o.order_id=oi.order_id AND o.product_id=p.product_id)

group by customer_id,category_id

HAVING count(order_id)>1));

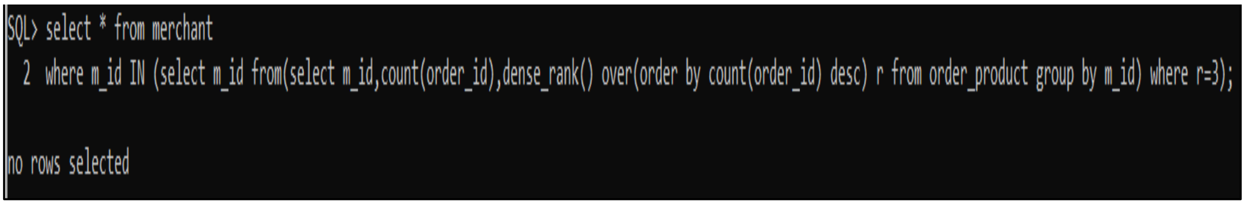


```
SQL> select * from customer
  2  where customer_id=(select customer_id
  3  from(select customer_id, category_id, count(order_id)
  4  from (select o.order_id,o.product_id,p.category_id,oi.customer_id
  5  from product p, orders oi, order_product o
  6  where o.order_id=oi.order_id AND o.product_id=p.product_id)
  7  group by customer_id,category_id
  8  HAVING count(order_id)>1));

CUSTO NAME                           PASSWORD
----- ------------------------------ -------------------------
1CU   John                           John123
```

Q10. Display the merchant details who is third highest in selling products.

select * from merchant

where m_id IN (select m_id from(select m_id,count(order_id),dense_rank() over(order by count(order_id) desc) r from order_product group by m_id) where r=3);

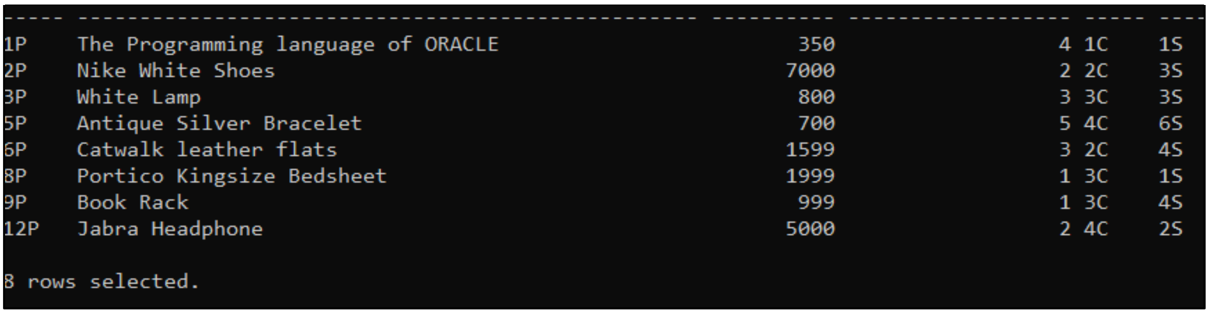


```
SQL> select * from merchant
  2  where m_id IN (select m_id from(select m_id,count(order_id),dense_rank() over(order by count(order_id) desc) r from order_product group by m_id) where r=3);

no rows selected
```

Q11. Display the list of products having quantity remaining <=5.

select * from product

where quantity_remaining <=5;

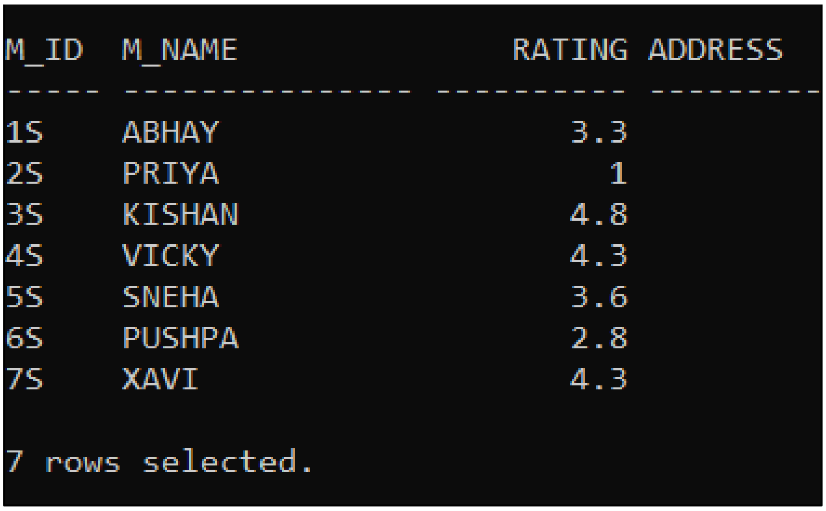


```
----- -------------------------------------------------- ---------- ------------------ ----- ----
1P    The Programming language of ORACLE                        350                  4 1C    1S
2P    Nike White Shoes                                         7000                  2 2C    3S
3P    White Lamp                                                800                  3 3C    3S
5P    Antique Silver Bracelet                                   700                  5 4C    6S
6P    Catwalk leather flats                                    1599                  3 2C    4S
8P    Portico Kingsize Bedsheet                                1999                  1 3C    1S
9P    Book Rack                                                 999                  1 3C    4S
12P   Jabra Headphone                                          5000                  2 4C    2S

8 rows selected.
```

Q12. Add a new column “Address” to the merchant table.

alter table merchant

add address varchar(15);



```
M_ID  M_NAME              RATING ADDRESS
----- --------------- ---------- ---------
1S    ABHAY                  3.3
2S    PRIYA                    1
3S    KISHAN                 4.8
4S    VICKY                  4.3
5S    SNEHA                  3.6
6S    PUSHPA                 2.8
7S    XAVI                   4.3

7 rows selected.
```

Q13. Create a table Old_Orders from the Orders table.

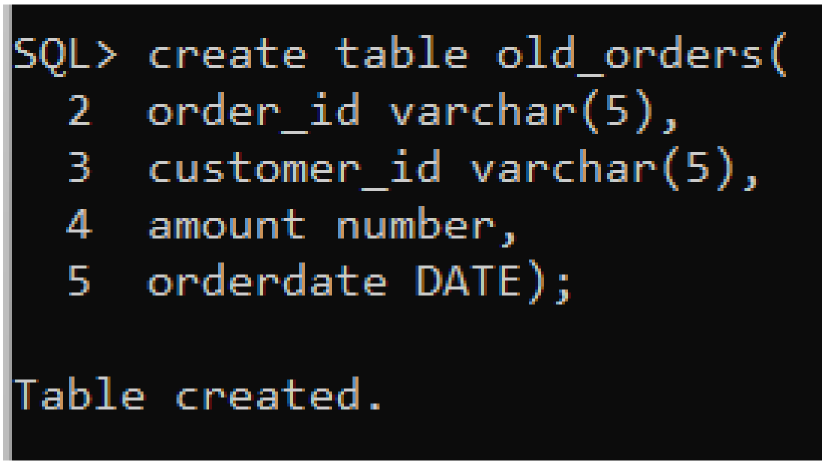
create table old_orders(

order_id varchar(5),

customer_id varchar(5),

amount number,

orderdate DATE);



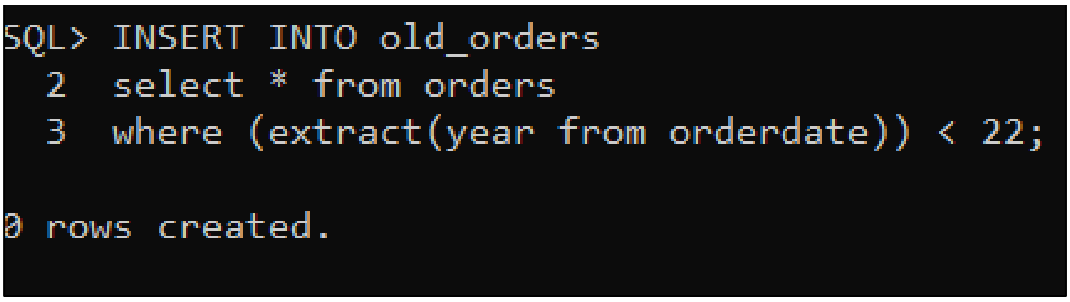
```
SQL> create table old_orders(
  2  order_id varchar(5),
  3  customer_id varchar(5),
  4  amount number,
  5  orderdate DATE);

Table created.
```

Q14. Insert values from Orders table to Old_Orderss having year < current year.

INSERT INTO old_orders

select * from orders

where (extract(year from orderdate)) < 22;



```
SQL> INSERT INTO old_orders
  2  select * from orders
  3  where (extract(year from orderdate)) < 22;

0 rows created.
```