Principle of Data Base Management Systems

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```
CUSTOMER_ID CUSTOMER_NAME                    QUANTITY
----------- ------------------------------ ----------
       2007 Messi                                   0

SQL> desc amazon;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 PRODUCT_ID                                NOT NULL NUMBER(10)
 PRODUCT_NAME                                       VARCHAR2(30)
 PRODUCT_PRICE                                      NUMBER(10)
 CUSTOMER_ID                                        NUMBER(10)
 TIME_OF_ORDER                                      VARCHAR2(30)
 DATE_OF_PURCHASE                                   VARCHAR2(30)
 QUANTITY                                           NUMBER(10)

SQL> desc customer;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CUSTOMER_ID                               NOT NULL NUMBER(10)
 CUSTOMER_NAME                                      VARCHAR2(30)
 CUSTOMER_PHONENUMBER                               NUMBER(10)
 CUSTOMER_ADDRESS                                   VARCHAR2(30)
```

Amazon table

PRODUCT_ID	PRODUCT_NAME	PRODUCT_PRICE	CUSTOMER_ID	TIME_OF_ORDER	DATE_OF_PURCHASE	QUANTITY
1001	SmartTV	500000	2001	9-AM	01-JUL-2019	2
1002	Dish wash	25000	2002	10-PM	25-AUGUST-2019	3
1003	Home Theatre	35000	2003	1-AM	18-SEPTEMBER-2019	4
1004	Alexa	8000	2004	11-AM	16-OCTOBER-2019	6
1005	Mac book pro	1000000	2005	5-PM	10-NOVERMBER-2019	8
1006	One plus 8pro	45000	2006	8-AM	24-APRIL-2019	1
1007	Sony Bravia	85000	2007	11-AM	22-APRIL-2020	5
1008	Iphone 11 pro max	65000	2007	12-AM	20-APRIL-2020	0

Customer table

CUSTOMER_ID	CUSTOMER_NAME	CUSTOMER_PHONENUMBER	CUSTOMER_ADDRESS
2001	Chandler	902145	Washington
2002	Ross	45123	London
2003	Prashanth	98032	Sydney
2004	Monica	73821	Austria
2005	Phoeba	32456	Ireland
2006	Rajesh	29031	California
2007	Messi	19041	Barcelona

Joints

1)Find the names of product whose customer location is ‘London’ ??

```
SQL> select product_id,product_name from amazon
  2  join customer on amazon.customer_id=customer.customer_id
  3  where customer_address='London';

PRODUCT_ID PRODUCT_NAME
---------- --------------------------------
      1002 Dish Wash
```

2)Find customer who purchased maximum quantity of product

```
SQL> select c.customer_id,c.customer_name,a.quantity
  2  from customer c join amazon a on c.customer_id=a.customer_id
  3  where a.quantity=0;

CUSTOMER_ID CUSTOMER_NAME                    QUANTITY
----------- ------------------------------ ----------
       2007 Messi                                   0
```

3) Find the customer who spent maximum amount in the shopping

```
SQL> SELECT
  2      product_id,
  3      product_name,
  4      product_price
  5  FROM
  6      amazon
  7  WHERE
  8      product_price =(
  9          SELECT
 10              MAX(product_price )
 11          FROM
 12              amazon
 13      );

PRODUCT_ID PRODUCT_NAME                   PRODUCT_PRICE
---------- ------------------------------ -------------
      1001 SmartTV                             500000
```

4) Find the name of the customer who brought the maximum number of products.

```
SQL> select max(quantity) from amazon;

MAX(QUANTITY)
-------------
            8
```

After knowing the maximum quantity

```
  1  SELECT
  2      customer_name,
  3      MAX(quantity)
  4  FROM
  5      amazon
  6  INNER JOIN customer
  7          USING(customer_id)
  8  GROUP BY
  9      customer_name
 10  HAVING
 11      MAX(quantity) >=8
 12  ORDER BY
 13*     customer_name
SQL> /

CUSTOMER_NAME                  MAX(QUANTITY)
------------------------------ -------------
Phoeba                                    8
```

5) List the customer who didn't buy anything.

```
  1  SELECT
  2      customer_name,
  3      MAX(quantity)
  4  FROM
  5      amazon
  6  INNER JOIN customer
  7          USING(customer_id)
  8  GROUP BY
  9      customer_name
 10  HAVING
 11      MAX(quantity)=0
 12  ORDER BY
 13*     customer_name
SQL> /

no rows selected
```

6) Display the name of the customers who brought 3,4,5 quantity of products??

```
  1  SELECT
  2      customer_name,
  3      MAX(quantity)
  4  FROM
  5      amazon
  6  INNER JOIN customer
  7          USING(customer_id)
  8  GROUP BY
  9      customer_name
 10  HAVING
 11      MAX(quantity) between 3 and 5
 12  ORDER BY
 13*     customer_name
SQL> /

CUSTOMER_NAME                  MAX(QUANTITY)
------------------------------ -------------
Messi                                      5
Prashanth                                  4
Ross                                       3
```

7) Display the customer along with the products whose purchase location is 'Austria'

```
SQL> select customer_name,product_name from amazon join customer on
  2   amazon.customer_id=customer.customer_id where customer_address='Austria';

CUSTOMER_NAME                  PRODUCT_NAME
------------------------------ ------------------------------
Monica                         Alexa
```

8) List the total quantity of products purchased from Amazon

```
SQL> select sum(quantity) from amazon;

SUM(QUANTITY)
-------------
           29
```

9) List the customers who are not dependent upon the products (i.e didn't bought any products

```
SQL> select c.customer_id,c.customer_name from customer c
  2  join amazon a on a.customer_id=c.customer_id where a.quantity=0;

CUSTOMER_ID CUSTOMER_NAME
----------- ------------------------------
       2007 Messi
```

10) Display the customer name who bought minimum quantity of products

```
SQL> select min(quantity) from amazon;

MIN(QUANTITY)
-------------
            1

  1  SELECT
  2      customer_name,
  3      MAX(quantity)
  4  FROM
  5      amazon
  6  INNER JOIN customer
  7          USING(customer_id)
  8  GROUP BY
  9      customer_name
 10  HAVING
 11      MAX(quantity)=1
 12  ORDER BY
 13*     customer_name
SQL> /

CUSTOMER_NAME                  MAX(QUANTITY)
------------------------------ -------------
Rajesh                                   1
```

Subquery

1) List the name of the customer who brought any products from the shop.

```
SQL> select customer_id,customer_name from customer
  2  where customer_id in(select customer_id from amazon);

CUSTOMER_ID CUSTOMER_NAME
----------- ------------------------------
       2001 Chandler
       2002 Ross
       2003 Prashanth
       2004 Monica
       2005 Phoeba
       2006 Rajesh
       2007 Messi

7 rows selected.
```

2) Find the product which is holds the highest price among the products.

```
SQL> SELECT
  2      product_id,
  3      product_name,
  4      product_price
  5  FROM
  6      amazon
  7  WHERE
  8      product_price =(
  9          SELECT
 10              MAX(product_price )
 11          FROM
 12              amazon
 13      );

PRODUCT_ID PRODUCT_NAME                   PRODUCT_PRICE
---------- ------------------------------ -------------
      1001 SmartTV                             500000
```

3) List the customer 2007's whose purchase is more expensive than the purchase of customer 2006's

```
SQL> select product_id,product_name,product_price from amazon
  2  where product_price>(select product_price from amazon where customer_id=2006)
  3  and customer_id=2007;

PRODUCT_ID PRODUCT_NAME                    PRODUCT_PRICE
---------- ------------------------------ -------------
      1007 Sony Bravia                            85000
      1008 Iphone 11 pro max                      65000
```

4) Display the customer name whose address are not functioning in London.

```
SQL> select customer_name,customer_address
  2  from customer
  3  where customer_address NOT IN 'London';

CUSTOMER_NAME                  CUSTOMER_ADDRESS
------------------------------ ------------------------------
Chandler                       Washington
Prashanth                      Sydney
Monica                         Austria
Phoeba                         Ireland
```

5) List the products which is sold for at-most 1 quantity

```
SQL> select product_id,product_name,product_price,quantity
  2  from amazon
  3  where quantity=(select min(quantity) from amazon);

PRODUCT_ID PRODUCT_NAME                    PRODUCT_PRICE   QUANTITY
---------- ------------------------------ ------------- ----------
      1006 One plus 8pro                          45000          1
```

6) List the customer who didn’t buy even a single product

```
SQL> select product_id,product_name,product_price,quantity
  2  from amazon
  3  where quantity=0;

PRODUCT_ID PRODUCT_NAME                    PRODUCT_PRICE   QUANTITY
---------- ------------------------------ ------------- ----------
      1008 Iphone 11 pro max                      65000          0
```

7) Find the product who is getting the minimum price among all of products.

```
SQL> SELECT
  2      product_id,
  3      product_name,
  4      product_price
  5  FROM
  6      amazon
  7  WHERE
  8      product_price =(
  9          SELECT
 10              MIN(product_price )
 11          FROM
 12              amazon
 13      );

PRODUCT_ID PRODUCT_NAME                   PRODUCT_PRICE
---------- ------------------------------ -------------
      1004 Alexa                                  8000
```

8) List the customer 2005’s whose purchase is more expensive than the purchase of customer 2001’s

```
SQL> select product_name,product_price from amazon
  2  where product_price>(select product_price from amazon where customer_id=2001)
  3  and customer_id=2005;

PRODUCT_NAME                   PRODUCT_PRICE
------------------------------ -------------
Mac book pro                         1000000
```