**Question1:**

1-first query:

select cust , price\_sum ,cust\_rank

from

(select cust , price\_sum , dense\_rank() over(order by price\_sum desc) cust\_rank from

(select customer\_id cust , sum(price \* quantity) over(partition by customer\_id) price\_sum from tableretail ))

where cust\_rank <= 10

group by cust , price\_sum ,cust\_rank

order by price\_sum desc;

in this query I get the top 10 customers who sale the most, but I found that the price of product depends on two variables that are quantity and price.

2-second query:

select stockcode , sum(quantity) amount from tableretail group by stockcode order by sum(quantity) desc ;

in this query I get the top selling products by amount.

select stock , price\_sum ,cust\_rank

from

(select stock , price\_sum , dense\_rank() over(order by price\_sum desc) cust\_rank from

(select stockcode stock , sum(price \* quantity) over(partition by stockcode) price\_sum from tableretail ))

where cust\_rank <= 10

group by stock , price\_sum ,cust\_rank

order by price\_sum desc;

select \* from tableretail where customer\_id =12875;

in this query I get the top selling product by price.

3-third query:

select to\_char(to\_date(invoicedate , 'mm/dd/yyyy hh24:mi') , 'Mon') from tableretail;

select to\_char(sysdate , 'Month') from dual;

SELECT \*

from

(select invoice\_date ,total\_sales , invoice\_month, invoice\_quarter, round(sum(total\_sales) over(partition by invoice\_month order by invoice\_date )) MTD , round(sum(total\_sales) over(partition by invoice\_quarter order by invoice\_date )) QTD

from

(select to\_date(to\_char(to\_date(invoicedate , 'mm/dd/yyyy hh24:mi') , 'mm/dd/yyyy') , 'mm/dd/yyyy') invoice\_date , sum(price \* quantity) total\_sales, to\_char(to\_date(invoicedate , 'mm/dd/yyyy hh24:mi') , 'mm/yyyy') invoice\_month ,

to\_char(to\_date(invoicedate , 'mm/dd/yyyy hh24:mi') , 'Q/yyyy') invoice\_quarter from tableretail

group by to\_date(to\_char(to\_date(invoicedate , 'mm/dd/yyyy hh24:mi') , 'mm/dd/yyyy') , 'mm/dd/yyyy') , to\_char(to\_date(invoicedate , 'mm/dd/yyyy hh24:mi') , 'mm/yyyy') , to\_char(to\_date(invoicedate , 'mm/dd/yyyy hh24:mi') , 'Q/yyyy')

order by to\_date(to\_char(to\_date(invoicedate , 'mm/dd/yyyy hh24:mi') , 'mm/dd/yyyy') , 'mm/dd/yyyy') ) )

order by invoice\_date ;

in this query I try to answer the following question:

what is the total quarter to date per year and the total month to date per year?

4-fourth query:

In the following queries I get the number of orders ordered per (month, day, hour).

Per month:

select invoice\_month ,invoice\_count

from

(

select distinct(invoice\_month) , count(invoice) over(partition by invoice\_month) invoice\_count from

(select invoice, TO\_CHAR(TO\_DATE(invoicedate, 'mm/dd/yyyy hh24:mi'), 'Month') invoice\_month from tableretail)

order by invoice\_count );

Per day:

select invoice\_day ,invoice\_count

from

(

select distinct(invoice\_day) , count(invoice) over(partition by invoice\_day) invoice\_count from

(select invoice, TO\_CHAR(TO\_DATE(invoicedate, 'mm/dd/yyyy hh24:mi'), 'Day') invoice\_day from tableretail)

order by invoice\_count );

Per hour:

select invoice\_hour ,invoice\_count

from

(

select distinct(invoice\_hour) , count(invoice) over(partition by invoice\_hour) invoice\_count from

(select invoice, TO\_CHAR(TO\_DATE(invoicedate, 'mm/dd/yyyy hh24:mi'), 'hh12 am') invoice\_hour from tableretail)

order by invoice\_count );

5-fifth query:

select \*

from

(

select distinct(invoice\_month) , sum(price\*quantity) over (partition by invoice\_month) total\_sum from (

select price , quantity , TO\_CHAR(TO\_DATE(invoicedate, 'mm/dd/yyyy hh24:mi'), 'Month/yyyy') invoice\_month from tableretail

)

order by total\_sum desc

);

In this query I get the month that brings high revenue.

**Question2:**

In the second question I display the customer id and the recency which I get it by minus each of max date for market and last date that the customer come to the market, also I display frequency which is the number of invoices that the customer made, also I display monetary which is the sum of price that the customer pay for products,

Also I display the r\_score by dividing the recency into 5 groups and get the customer which have high recency rank 1 and which have low recency 5, also I display fm\_score by first get average of frequency and monetary of customer then divide this average into 5 group and get the customer which have high average 1 and which have low average 5, I also display the customer segment depending on table given in question.

**Question3:**

First query:

select customer\_id , max(count\_consecutive\_days) max\_consecutive\_days

from(select customer\_id, count(date\_minus) count\_consecutive\_days

from(select customer\_id, calendar\_dt, number\_of\_rows, calendar\_dt - number\_of\_rows date\_minus

from

(select customer\_id , calendar\_dt , ROW\_NUMBER() OVER (PARTITION BY customer\_id ORDER BY Calendar\_Dt) number\_of\_rows

from customer\_data))

group by customer\_id,date\_minus

order by count\_consecutive\_days desc)

group by customer\_id

order by customer\_id;

first, I get all the customers id and count number of rows depend on each customer that the number of row reset to 1 if I have new customer.

Second, I get the difference between date for each process and number of row.

Third, I count the output from minus date grouped by each customer and output.

Finally, I get the maximum number of the output from the third query to get the maximum number of consecutive days each customer made.

second query:

select avg(no\_trans\_) average\_no\_of\_transactions , avg(no\_of\_days) average\_no\_of\_days

from(

select distinct customer\_id ,first\_value(no\_trans) over(partition by customer\_id order by calendar\_dt) no\_trans\_ , first\_value(calendar\_dt)over(partition by customer\_id order by calendar\_dt) - cld no\_of\_days

from(

select customer\_data.\*, min(calendar\_dt)over(partition by customer\_id order by calendar\_dt) cld ,

sum(amt\_le) over(partition by customer\_id order by calendar\_dt) as sum\_,rank( ) over(partition by customer\_id order by calendar\_dt) no\_trans

from customer\_data)

where sum\_>=250

order by customer\_id

);

First, I display all customers data and get minimum date for each customer and consecutive sum of sale for each customer, and I order this data based on date for each customer.

Second, I display the first value for each customer where the consecutive sum of sale greater than or equal to threshold also I select the difference between first value of the date where consecutive sum of sale greater than or equal to threshold and the minimum date that I get from first query.

Finally I get the average of two outputs above.