**Question 2**

After exploring the data now you are required to implement a Monetary model for customers behavior for product purchasing and segment each customer based on the below groups

**Champions - Loyal Customers - Potential Loyalists – Recent Customers – Promising - Customers Needing Attention - At Risk - Cant Lose Them – Hibernating – Lost**

The customers will be grouped based on 3 main values

• **Recency** => how recent the last transaction is (Hint: choose a reference date, which is the most recent purchase in the dataset )

• **Frequency** => how many times the customer has bought from our store

• **Monetary** => how much each customer has paid for our products

As there are many groups for each of the R, F, and M features, there are also many potential permutations, this number is too much to manage in terms of marketing strategies. For this, we would decrease the permutations by getting the average scores of the frequency and monetary (as both of them are indicative to purchase volume anyway)

**Step 1 : create table with the following columns**

* Customerid
* Recency
* Frequency
* Monetary
* r\_score
* fm\_score

create table customer\_type

AS

select \* , ntile (5) over (order by Recency desc) as r\_score ,

( (ntile (5) over (order by frequency desc) )+(ntile (5) over (order by Monetary desc)) ) / 2 as fm\_score

from

(

select customerid , (select max(to\_timestamp(invoicedate , 'MM/DD/YYYY HH24:MI') ) from online\_retail ) -

(to\_timestamp(max(invoicedate) , 'MM/DD/YYYY HH24:MI')) as Recency ,

count(invoiceno) as frequency , sum (quantity \* unitprice) as Monetary

from online\_retail

where customerid is not null

group by customerid

) new\_table ;

**Step 2 : alter table and add group\_name columne**

alter table customer\_type

add column Group\_name varchar(100) ;

**Step 3 : update group\_name columns and replace null values with Category name according to the values of r\_score and fm\_score**

update customer\_type

set group\_name =

case when (r\_score = 5 and fm\_score in (5,4)) or (r\_score = 4 and fm\_score = 5) then 'Champions'

when (r\_score in (5,4) and fm\_score = 2) or (r\_score in (3,4) and fm\_score = 3) then 'Potential Loyalists '

when (r\_score = 5 and fm\_score = 3) or (r\_score = 4 and fm\_score = 4) or

(r\_score = 3 and fm\_score = 5) or (r\_score = 3 and fm\_score = 4) then 'Loyal Customers '

when (r\_score = 5 and fm\_score = 1) then 'Recent Customers '

when (r\_score in (4,3) and fm\_score = 1) then 'Promising'

when (r\_score = 3 and fm\_score = 2) or (r\_score = 2 and fm\_score in (3,2)) then 'Customers Needing Attention'

when (r\_score = 2 and fm\_score in (5,4)) or (r\_score = 1 and fm\_score = 3) then 'At Risk'

when (r\_score = 1 and fm\_score in (5,4)) then 'Cant Lose Them'

when (r\_score = 1 and fm\_score = 2) or (r\_score = 2 and fm\_score = 1) then 'Hibernating'

when (r\_score = 1 and fm\_score = 1) then 'Lost'

end ;

**Step 4 : retrieve all date from customer\_type table**

select \* from customer\_type