

Q4: Answer:-

Transaction Type	Transaction 80%	Amount 90%	Threshold 95%	Limit 98%	100%
<u>Cash Sale</u>	1305.0	3044.1000000 00005	9000.0	19074.0	66000.0
<u>Credit Sale</u>	2908.8000 000000065	7800.0	17568.599 999999882	36720.0	99966.0
<u>Credit Return</u>	4890.0	15000.0	30000.0	58592.999 99999936	99600.0
<u>Expense</u>	2220.0	5850.0	11315.999 99999997	18452.399 99999989	48000.0
<u>Credit Purchase</u>	18174.0	33000.0	57567.0	79198.2	92700.0
<u>Credit Purchase Return</u>	13500.0	20939.999999 999985	30000.0	45000.0	48003.0

Q5: Answer:-

We may select top 10 users based on a variety of parameters like which customers' transaction is the most amount, who has done maximum transactions, who are the regular customers, who are the long time customers, etc.

Here, I want to figure out the parameter - "maximum transactions among long time users".

It would be better to know which customers mostly use a platform for transactions according to time intervals and total transactions. To pursue this, we have to extract the highest time intervals, then the total maximum transactions in each type.

It's necessary to know which customers/users attach to a platform in a long time for business purposes. This also expands the company's reputation for further branding.

As every business wants to be a customer's first choice. In effect, the brand value is a great factor, it creates and maintains a company/organizations' reputation and so reflects the customer's experience of the organization.

Besides, if a company wants to arrange a bonus(/prize) giving ceremony then this parameter works better regarding logical reasoning with less in fraud transactions.

These top users here are a factor to expand the branding of an organization. We know a quote by *Maurice Allin* - "Branding is the act of making meaning." A strong brand can make any business stand out from the crowd, particularly in competitive markets. This can be achieved from the feedbacks of good customer experiences.

Thus, this parameter might play a great role in business intelligence purposes.

To get the top 10 users in each transaction type we have to just change the source. The SQL query in Postgresql is the following:-

```
With min_max_time_table AS(
    select id, min(activities_time) as first_time, max(activities_time) as last_time from
surecash
    where source='Credit Purchase' group by id
), max_interval_table AS(
    select id, last_time::DATE - first_time::DATE AS time_interval from
min_max_time_table
    order by time_interval DESC LIMIT 1000
), total_transactions_table AS(
    select id, count(id) as total_transactions from surecash where id = any (select
id from max_interval_table)
    group by id order by total_transactions desc LIMIT 10
)
select id, total_transactions from total_transactions_table;
```

Only the top 10 users among the dataset based on the estimated parameter is got using the query in the following:

```
With min_max_time_table AS(
    select id, min(activities_time) as first_time, max(activities_time) as last_time from
surecash
    group by id
), max_interval_table AS(
    select id, last_time::DATE - first_time::DATE AS time_interval from
min_max_time_table
    order by time_interval DESC LIMIT 1000
), total_transactions_table AS(
    select id, count(id) as total_transactions from surecash where id = any (select
id from max_interval_table)
    group by id order by total_transactions desc LIMIT 10
)
select id, total_transactions from total_transactions_table;
```

