Solving analytical queries on RedShift Cluster

1. Top 10 ATMs where most transactions are in the 'inactive' state

```
select atm_number, atm_manufacturer, location, total_transaction_count from
(select fact_atm_trans.atm_id , count(fact_atm_trans.trans_id)
total_transaction_count
from etlproject.fact_atm_trans where fact_atm_trans.atm_status =
'Inactive' group by fact_atm_trans.atm_id  order by total_transaction_count desc limit 10) t1,
etlproject.dim_atm t2,
etlproject.dim_location t3 where t1.atm_id = t2.atm_id and
t2.atm_location_id = t3.location_id order by
total_transaction_count desc;
```

2. Number of ATM failures corresponding to the different weather conditions recorded at the time of the transactions

```
select t1.weather_main, t1.total_transaction_count total_transaction_count,
nvl(t2.total_transaction_count,0) inactive_count, nvl(round((cast(t2.total_transaction_count
as
numeric(10,4))/t1.total_transaction_count)*100,4),0.0) inactive_count_percent from
(select weather_main, count(fact_atm_trans.trans_id)
total_transaction_count from etlproject.fact_atm_trans where len(weather_main) > 0
group by weather_main) t1 left join (select weather_main, count(fact_atm_trans.trans_id)
total_transaction_count from
etlproject.fact_atm_trans where fact_atm_trans.atm_status = 'Inactive' and len(weather_main)
> 0 group by weather_main) t2 on
t1.weather_main = t2.weather_main order by inactive_count_percent desc limit 10;
```

3. Top 10 ATMs with the most number of transactions throughout the year

```
select atm_number, atm_manufacturer, location, total_transaction_count
from (select atm_id, count(fact_atm_trans.trans_id) total_transaction_count
from etlproject.fact_atm_trans group by fact_atm_trans.atm_id
order by total_transaction_count desc limit 10) t1 left join etlproject.dim_atm
t2 on t1.atm_id = t2.atm_id left join etlproject.dim_location t3 on
t2.atm_location_id = t3.location_id order by total_transaction_count desc;
```

4. Number of overall ATM transactions going inactive per month for each month

```
select distinct t2.year,t2.month, t2.total_transaction_count,t1.Inactive_count , cast(round((
cast(t1.Inactive_count as decimal(10,2)))*100/cast(t2.total_transaction_count as
decimal(10,2)),2) as
```

decimal(10,4)) as Inactive_count_percent from (select B.year,B.month ,count(*) as total_transaction_count from etlproject.fact_atm_trans A
join etlproject.DIM_Date B on A.date_id = B.date_id group by B.year,B.month) t2 join (select B.year,B.month, count(*) as Inactive_count from etlproject.fact_atm_trans A join etlproject.DIM_date B
on A.date_id = B.date_id where atm_status = 'Inactive' group by B.year,B.month)t1 on t2.year = t1.year
and t2.month = t1.month order by t1.month;

5. Top 10 ATMs with the highest total withdrawn amount throughout the year

```
select t2.atm_number, t2.atm_manufacturer, t3.location, sum(transaction_amount) total_transaction_amount
from etlproject.fact_atm_trans t1 left join etlproject.dim_atm t2 on t1.atm_id = t2.atm_id
left join etlproject.dim_location t3 on t3.location_id = t2.atm_location_id
group by t2.atm_number, t2.atm_manufacturer, t3.location order
by 4 desc limit 10
```

6. Number of failed ATM transactions across various card types

```
select f.card_type, f.total_transaction_count, f.inactive_count,
((100.0*f.total_transaction_count )/f.inactive_count) as inactive_percent_count from
(select dct.card_type as card_type, count(t1.atm_status) as total_transaction_count,(select count(t2.atm_status)
from etlproject.fact_atm_trans t2 where t2.atm_status = 'Inactive' and t2.card_type_id = t2.card_type_id) as inactive_count
from etlproject.fact_atm_trans t1, etlproject.dim_card_type dct where
t1.card_type_id = dct.card_type_id group by
t1.card_type_id,dct.card_type
order by total_transaction_count desc
) f;
```

7. Number of transactions happening on an ATM on weekdays and on weekends throughout the year. Order this by the ATM_number, ATM_manufacturer, location, weekend_flag and then total_transaction_count

```
select *, count(*) total_transaction_count from ( select
t2.atm_number, t2.atm_manufacturer, t3.location,
case when t4.weekday = 'Saturday' then 1 when t4.weekday = 'Sunday' then 1 else 0 end as weekend_ind
```

from etlproject.fact_atm_trans t1 left join etlproject.dim_atm t2 on t1.atm_id = t2.atm_id left join etlproject.dim_location t3 on t3.location_id = t2.atm_location_id left join etlproject.dim_date t4 on t1.date_id = t4.date_id)q group by atm_number, atm_manufacturer, location, weekend_ind order by atm_number, weekend_ind

8. Most active day in each ATMs from location "Vejgaard"

```
select atm_number, atm_manufacturer, location, total_transaction_count from (
select row_number() over(partition by b.atm_number order by count(*) desc) as
rid,b.atm_number, b.atm_manufacturer, c.location, d.weekday, count(*) as
total_transaction_count from etlproject.fact_atm_trans a
left join etlproject.dim_atm b on a.atm_id = b.atm_id
left join etlproject.dim_location c on c.location_id = b.atm_location_id
left join etlproject.dim_date d on a.date_id = d.date_id where
c.location = 'Vejgaard'
group by b.atm_number, b.atm_manufacturer, c.location, d.weekday
) p where rid = 1 order by atm_number;
```