

Solving analytical queries on RedShift Cluster

Here, you have to write the query used for solving the question and the screenshots of the table which is outputted after the query is run on the AWS RedShift Query editor UI.

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

Query 1

```
select top 10 atm.atm_number,atm.atm_manufacturer,loc.location,
count(fct.trans_id) as total_transaction_count,
count(fct.atm_status) as inactive_count,
cast(cast(inactive_count as decimal(30,4))/cast(total_transaction_count as decimal(30,4)) as
decimal(10,4))*100 as inactive_count_perc
from etl_project.fact_atm_trans fct
inner join etl_project.dim_atm atm on fct.atm_id = atm.atm_id
inner join etl_project.dim_location loc on atm.atm_location_id = loc.location_id
where atm_status='Inactive'
group by 1,2,3
order by total_transaction_count desc
```

Screenshot of the Query 1

atm_number ▾	atm_manufacturer ▾	location ▾	total_transaction_count ▾	inactive_count ▾	inactive_count_perc ▾
16	NCR	Skive	44043	44043	100.0000
12	NCR	Århus	33982	33982	100.0000
2	NCR	Vejgaard	33725	33725	100.0000
88	NCR	Storcenter indg. A	32183	32183	100.0000
30	NCR	Nykøbing, bing Mors	30883	30883	100.0000
52	NCR	Farsø	27361	27361	100.0000
50	NCR	Aarhus	23416	23416	100.0000
29	NCR	Skelagervej 15	20773	20773	100.0000
81	NCR	Spar København, bmand Tørnavej	20148	20148	100.0000
102	NCR	Aalborg Storcenter Afd	18297	18297	100.0000

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

Query 2

```
select weather_main,count(trans_id) as total_transaction_count,
count(case when atm_status = 'Inactive' then trans_id else null end) as inactive_count,
cast(cast(inactive_count as decimal(30,4))/cast(total_transaction_count as decimal(30,4)) as
decimal(10,4))*100 as inactive_count_perc
from etl_project.fact_atm_trans
where weather_main <> "
group by 1
```

Screenshot of the Query 2

weather_main	total_transaction_count	inactive_count	inactive_count_perc
Snow	23405	4813	20.5600
Clear	543949	85531	15.7200
Drizzle	62530	8670	13.8600
Rain	545134	86017	15.7700
Clouds	1181901	194027	16.4100
Mist	82801	12864	15.5300
Fog	18174	3729	20.5100
Thunderstorm	2549	361	14.1600
Haze	3	0	0.0000
TORNADO	38	1	2.6300

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

Query 3

```
select top 10 atm.atm_number,atm.atm_manufacturer,loc.location,count(trans_id) as
total_transaction_count
from etl_project.fact_atm_trans fact
inner join etl_project.dim_atm atm on atm.atm_id=fact.atm_id
inner join etl_project.dim_location loc on loc.location_id=fact.weather_loc_id
group by 1,2,3
order by total_transaction_count desc
```

Screenshot of the Query 3

Q Search rows			
atm_number	atm_manufacturer	location	total_transaction_count
39	NCR	Svenstrup	55380
20	NCR	Bispensgade	54211
10	NCR	NÅfÅ, rresundby	53794
24	NCR	Hobro	53378
45	NCR	Abildgaard	53198
16	NCR	Skive	44043
40	Diebold Nixdorf	Frederikshavn	43767
1	NCR	NÅfÅ, stved	42786
41	Diebold Nixdorf	Skagen	42732
48	Diebold Nixdorf	BrÅfÅ, nderslev	42493

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

Query 4

```
select date.year,date.month,count(fact.trans_id) as total_transaction_count,
count(case when atm_status = 'Inactive' then trans_id else null end) as inactive_count,
cast(cast(inactive_count as decimal(30,4))/cast(total_transaction_count as decimal(30,4)) as
decimal(10,4))*100 as inactive_count_perc
from etl_project.fact_atm_trans fact
inner join etl_project.dim_date date on date.date_id=fact.date_id
group by 1,2
order by total_transaction_count desc
```

Screenshot of the Query 4

Rows returned (12)							Export ▼
<input type="text" value="Search rows"/>							< 1 2 > ⚙️
year ▼	month ▲	total_transaction_count ▼	inactive_count ▼	inactive_count_perc ▼			
2017	April	218865	41830	19.1100			
2017	August	217218	36713	16.9000			
2017	December	197048	20476	10.3900			
2017	February	182659	36656	20.0600			
2017	January	180194	35953	19.9500			
2017	July	227682	38139	16.7500			
2017	June	225166	36789	16.3300			
2017	March	209586	41046	19.5800			
2017	May	222418	37679	16.9400			
2017	November	193967	21684	11.1700			

Rows returned (12)							Export ▼
<input type="text" value="Search rows"/>							< 1 2 > ⚙️
year ▼	month ▲	total_transaction_count ▼	inactive_count ▼	inactive_count_perc ▼			
2017	October	191667	21780	11.3600			
2017	September	202101	28913	14.3000			

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

Query 5

```
select top 10 atm.atm_number,atm.atm_manufacturer,loc.location,sum(transaction_amount) as
total_transaction_amount
from etl_project.fact_atm_trans fact
inner join etl_project.dim_atm atm on atm.atm_id=fact.atm_id
inner join etl_project.dim_location loc on loc.location_id=fact.weather_loc_id
group by 1,2,3
order by total_transaction_amount desc
```

Screenshot of the Query 5

atm_number	atm_manufacturer	location	total_transaction_amount
39	NCR	Svenstrup	277097637
20	NCR	Bispenssgade	271008803
24	NCR	Hobro	268289882
10	NCR	NÃfÃ, resundby	267379103
45	NCR	Abildgaard	265639616
16	NCR	Skive	220677013
40	Diebold Nixdorf	Frederikshavn	219812287
41	Diebold Nixdorf	Skagen	214127315
1	NCR	NÃfÃ, stved	213715474
48	Diebold Nixdorf	BrÃfÃ, nderslev	212883099

6. Number of failed ATM transactions across various card types

Query 6

```
select top 10 card.card_type,count(fact.trans_id) as total_transaction_count,count(case when
atm_status = 'Inactive'
then trans_id else null end) as inactive_count,
cast(cast(inactive_count as decimal(30,4))/cast(total_transaction_count as decimal(30,4)) as
decimal(10,4))*100 as inactive_count_percent
from etl_project.fact_atm_trans fact
inner join etl_project.dim_card_type card on fact.card_type_id=card.card_type_id
group by 1
order by total_transaction_count desc
```

Screenshot of the Query 6

Q Search rows				
card_type	total_transaction_count	inactive_count	inactive_count_percent	
Visa Dankort - on-us	748805	112972	15.0800	
Mastercard - on-us	458226	86000	18.7600	
Visa Dankort	427840	60547	14.1500	
MasterCard	400506	63482	15.8500	
VISA	170828	30713	17.9700	
Dankort - on-us	143813	24680	17.1600	
HÃfÃ\vekort - on-us	62487	10331	16.5300	
Dankort	28581	4557	15.9400	
CIRRUS	17362	2953	17.0000	
HÃfÃ\vekort	8459	1208	14.2800	

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

Query 7

```
select top 10 atm.atm_number,
atm.atm_manufacturer,
loc.location,
case when date.weekday IN ('Saturday','Sunday') then 1 else 0 end as weekend_flag,
count(fact.trans_id) as total_transaction_count
from ETL_Project.FACT_ATM_TRANS fact
Inner join ETL_Project.dim_atm atm on atm.ATM_ID=fact.ATM_ID
Inner join ETL_Project.dim_location loc on loc.location_id=fact.location_id
Inner join ETL_Project.dim_date date on date.date_id=fact.date_id
GROUP BY 1,2,3,4
ORDER BY 1,2,3,4,5
```

Screenshot of the Query 7

Rows returned (10)					Export ▼
<input type="text" value="Search rows"/>					< 1 >
atm_number ▼	atm_manufacturer ▼	location ▼	weekend_flag ▼	total_transaction_count	
1	NCR	NÅfÅ'stved	0	32711	
1	NCR	NÅfÅ'stved	1	10075	
10	NCR	NÅfÅ, rresundby	0	41667	
10	NCR	NÅfÅ, rresundby	1	12127	
100	NCR	Intern Skive	0	17812	
100	NCR	Intern Skive	1	1	
101	NCR	Bryggen Vejle	0	11693	
101	NCR	Bryggen Vejle	1	3247	
102	NCR	Aalborg Storcenter Afd	0	14556	
102	NCR	Aalborg Storcenter Afd	1	3741	

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

Query 8

```
select top 2 atm.atm_number,atm.atm_manufacturer,loc.location,date.weekday,
count(fact.trans_id)as total_transaction_count
from etl_project.fact_atm_trans fact
inner join etl_project.dim_atm atm on atm.atm_id=fact.atm_id
inner join etl_project.dim_location loc on loc.location_id=fact.weather_loc_id
inner join etl_project.dim_date date on date.date_id=fact.date_id
where loc.location='Vejgaard'
group by 1,2,3,4
order by weekday,total_transaction_count
```

Screenshot of the Query 8

Rows returned (2)					Export ▼
<input type="text" value="Search rows"/>					< 1 > ⚙️
atm_number ▼	atm_manufacturer ▼	location ▼	weekday ▼	total_transaction_count ▼	
103	Diebold Nixdorf	Vejgaard	Friday	4757	
2	NCR	Vejgaard	Friday	6290	