

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>

```
select d.atm_number,d.atm_manufacturer,l.location,count(atm_status)
Inactive_count,count(f.atm_id) total_transaction_count,
(Inactive_count/total_transaction_count * 100) count_percent
from fact_atm_trans f
INNER JOIN dim_atm d on (f.atm_id=d.atm_id)
INNER JOIN dim_location l on (l.location_id=d.atm_location_id)
where atm_status='Inactive'
group by d.atm_number,d.atm_manufacturer,l.location
order by Inactive_count desc limit 10
```

<Screenshot of the resultant table>

Query results		Table details					
Query 1653		Execution Data Visualize					
Completed, started on January 30, 2022 at 18:26:05		ELAPSED TIME: 00 m 09 s					
Rows returned (10)		Export					
Search rows		< 1 > @					
atm_number	atm_manufacturer	location	inactive_count	total_transaction_count	count_percent		
16	NCR	Skive	44043	44043	100		
12	NCR	Århus	33982	33982	100		
2	NCR	Vejgaard	33725	33725	100		
88	NCR	Storcenter indg. A	32183	32183	100		
30	NCR	Nykøbing Mors	30883	30883	100		
52	NCR	Farsø	27361	27361	100		
50	NCR	Aarhus	23416	23416	100		
29	NCR	Skelagervej 15	20773	20773	100		
81	NCR	Spar Kjøbenhavn	20148	20148	100		
102	NCR	Aalborg Storcenter Afd	18297	18297	100		

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

<Query>

```
select f.weather_main,count(f.trans_id) total_transcation_count,count(CASE WHEN
f.atm_status='Inactive' THEN 1 END) inactive_count, (Cast(((inactive_count
*100.00)/total_transcation_count) as decimal(18,2))) inactive_count_percent
from fact_atm_trans f
where f.weather_main ~ '^[a-z,A-Z]'
group by f.weather_main
order by inactive_count desc
```

<Screenshot of the resultant table>

Query results

Table details

Query 1673

Execution

Data

Visualize

Completed, started on January 30, 2022 at 18:28:05

ELAPSED TIME: 00 m 10 s

Rows returned (10)

Export

Search rows

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weather_main	total_transcation_count	inactive_count	inactive_count_percent
Clouds	1181901	194027	16.41
Rain	545134	86017	15.77
Clear	543949	85531	15.72
Mist	82801	12864	15.53
Drizzle	62530	8670	13.86
Snow	23405	4813	20.56
Fog	18174	3729	20.51
Thunderstorm	2549	361	14.16
TORNADO	38	1	2.63
Haze	3	0	0.00

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

<Query>

```
select d.atm_number,d.atm_manufacturer,l.location,count(f.atm_id) total_transaction_count
from fact_atm_trans f
INNER JOIN dim_atm d on (f.atm_id=d.atm_id)
INNER JOIN dim_location l on (l.location_id=d.atm_location_id)
group by d.atm_number,d.atm_manufacturer,l.location
order by total_transaction_count desc limit 10
```

<Screenshot of the resultant table>

Query results

Table details

Query 1678

Execution

Data

Visualize

Completed, started on January 30, 2022 at 18:29:01

ELAPSED TIME: 00 m 14 s

Rows returned (10)

Export

Search rows

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atm_number	atm_manufacturer	location	total_transaction_count
39	NCR	Svenstrup	55380
20	NCR	Bispensgade	54211
10	NCR	NÅfÅ, resundby	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>

```
select d.year,d.month,count(f.trans_id) total_transcation_count,count(CASE WHEN
f.atm_status='Inactive' THEN 1 END) inactive_count, (Cast(((inactive_count
*100.00)/total_transcation_count) as decimal(18,2))) inactive_count_percent
from fact_atm_trans f
INNER JOIN dim_date d on(f.date_id=d.date_id)
group by d.month,d.year
order by month
```

<Screenshot of the resultant table>

Query results		Table details		
Query 1716		<div> <div>Execution</div> <div>Data</div> <div>Visualize</div> </div>		
<div> <div>Completed, started on January 30, 2022 at 18:31:59</div> <div>ELAPSED TIME: 00 m 02 s</div> </div>				
Rows returned (1)		Export		
<div> <div>Search rows</div> <div>< 1 > ⌕</div> </div>				
year	month	total_transcation_count	inactive_count	inactive_count_percent
2017	May	222418	37679	16.94

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

<Query>

```
select d.atm_number,d.atm_manufacturer,l.location,sum(transaction_amount)
total_transaction_amount
from fact_atm_trans f
INNER JOIN dim_atm d on (f.atm_id=d.atm_id)
INNER JOIN dim_location l on (l.location_id=d.atm_location_id)
group by f.atm_id,d.atm_number,d.atm_manufacturer,l.location
order by total_transaction_amount desc
```

<Screenshot of the resultant table>

Query results

Table details

Query 1725

Completed, started on January 30, 2022 at 18:32:46

ELAPSED TIME: 00 m 14 s

Execution

Data

Visualize

Rows returned (113)

Export

Search rows

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12

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atm_number	atm_manufacturer	location	total_transaction_amount
39	NCR	Svenstrup	277097637
20	NCR	Bispensgade	271008803
24	NCR	Hobro	268289882
10	NCR	NÅfÅ, rresundby	267379103
45	NCR	Abildgaard	265639616
16	NCR	Skive	220677013
40	Diebold Nixdorf	Frederikshavn	219812287
41	Diebold Nixdorf	Skagen	214127315
1	NCR	NÅfÅ;stved	213715474
48	Diebold Nixdorf	BrÅfÅ, nderlev	212883099

6. Number of failed ATM transactions across various card types

<Query>

```
select d.card_type,count(f.trans_id) total_transcation_count,count(CASE WHEN
f.atm_status='Inactive' THEN 1 END) inactive_count, (Cast(((inactive_count
*100.00)/total_transcation_count) as decimal(18,2))) inactive_count_percent
from fact_atm_trans f
INNER JOIN dim_card_type d on(f.card_type_id=d.card_type_id)
group by d.card_type
order by inactive_count desc
```

<Screenshot of the resultant table>

Query results		Table details	
Query 1738 🔗		<div> <div>Execution</div> <div>Data</div> <div>Visualize</div> </div>	
<div> <div>Completed, started on January 30, 2022 at 18:35:53</div> <div>ELAPSED TIME: 00 m 14 s</div> </div>			
Rows returned (12)		<div>Export ▼</div>	
<div> <div>Search rows</div> </div>		<div> <div><</div> <div>1</div> <div>2</div> <div>></div> <div>🔍</div> </div>	
card_type	total_transcation_count	inactive_count	inactive_count_percent
Visa Dankort - on-us	748805	112972	15.08
Mastercard - on-us	458226	86000	18.76
MasterCard	400506	63482	15.85
Visa Dankort	427840	60547	14.15
VISA	170828	30713	17.97
Dankort - on-us	143813	24680	17.16
HÃ¶fÃ¼vekort - on-us	62487	10331	16.53
Dankort	28581	4557	15.94
CIRRUS	17362	2953	17.00
HÃ¶fÃ¼vekort	8459	1208	14.28

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>

```
select d.atm_number,d.atm_manufacturer,l.location,
CASE WHEN dd.weekday='Sunday' or dd.weekday='Saturday' then 1 ELSE 0 END as
weekend_flag,
count(f.trans_id) total_transaction_count
from fact_atm_trans f
INNER JOIN dim_atm d on (f.atm_id=d.atm_id)
INNER JOIN dim_location l on (l.location_id=d.atm_location_id)
INNER JOIN dim_date dd on (f.date_id=dd.date_id)
group by d.atm_number,d.atm_manufacturer,l.location,weekend_flag
order by d.atm_number,d.atm_manufacturer,l.location,weekend_flag,total_transaction_count
desc limit 10
```

<Screenshot of the resultant table>

Query results

Table details

Query 1746

Completed, started on January 30, 2022 at 18:34:42

ELAPSED TIME: 00 m 15 s

Execution

Data

Visualize

Rows returned (10)

Export

Search rows

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atm_number	atm_manufacturer	location	weekend_flag	total_transaction_count
1	NCR	NÅfÅstved	0	2996
1	NCR	NÅfÅstved	1	874
10	NCR	NÅfÅ ,resundby	0	3782
10	NCR	NÅfÅ ,resundby	1	1003
100	NCR	Intern Skive	0	1494
101	NCR	Bryggen Vejle	0	968
101	NCR	Bryggen Vejle	1	220
102	NCR	Aalborg Storcenter Afd	0	2263
102	NCR	Aalborg Storcenter Afd	1	473
103	Diebold Nixdorf	Vejgaard	0	1009

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

<Query>

```
select a.atm_number,a.atm_manufacturer,l.location,dd.weekday,count(f.trans_id)
transaction_count
from fact_atm_trans f
INNER JOIN dim_atm a on (f.atm_id=a.atm_id)
INNER JOIN dim_location l on (l.location_id=f.weather_loc_id)
INNER JOIN dim_date dd on (dd.date_id=f.date_id)
where l.location='Vejgaard'
group by a.atm_number,a.atm_manufacturer,l.location,dd.weekday
order by transaction_count desc,dd.weekday
```

<Screenshot of the resultant table>

Query results						Table details	
Query 1766 🔗						Execution Data Visualize	
<div> Completed, started on January 30, 2022 at 18:36:21 </div> <div> ELAPSED TIME: 00 m 20 s </div>							
Rows returned (13)						Export	
<input type="text" value="Search rows"/>						< 1 2 > 🔍	
atm_number	atm_manufacturer	location	weekday	transaction_count			
2	NCR	Vejgaard	Wednesday	812			
2	NCR	Vejgaard	Monday	665			
2	NCR	Vejgaard	Friday	652			
2	NCR	Vejgaard	Tuesday	635			
2	NCR	Vejgaard	Thursday	573			
2	NCR	Vejgaard	Saturday	541			
2	NCR	Vejgaard	Sunday	315			
103	Diebold Nixdorf	Vejgaard	Wednesday	287			
103	Diebold Nixdorf	Vejgaard	Monday	253			
103	Diebold Nixdorf	Vejgaard	Tuesday	203			