

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 C.atm_number,
C.atm_manufacturer,
D.location,
total_transaction_count ,
inactive_count,
inactive_count/total_transaction_count*100.0 as count_percentage
from
(
select atm_id,
count(atm_id) as total_transaction_count
from etl_proj_schema.fact_atm_trans
group by atm_id
order by total_transaction_count desc
) A,
(
select atm_id, count(atm_id) as inactive_count
from etl_proj_schema.fact_atm_trans
where atm_status = 'Inactive'
group by atm_id
order by inactive_count desc limit 10
) B,
etl_proj_schema.dim_atm C,
etl_proj_schema.dim_location D
where A.atm_id = B.atm_id
and B.atm_id = C.atm_id
and C.atm_location_id = D.location_id
order by inactive_count desc;
```

<Screenshot of the resultant table>

ices, features, marketplace products, and docs [Alt+S]					
upgradnikitharo @ 0009-0230-2705 N. Virginia Support					
Search rows					
atm_number	atm_manufacturer	location	total_transaction_count	inactive_count	count_percentage
16	NCR	Skive	44043	44043	100.0
12	NCR	Århus	33982	33982	100.0
2	NCR	Vejgaard	33725	33725	100.0
88	NCR	Storcenter indg. A	32183	32183	100.0
30	NCR	Nykøbing Mors	30883	30883	100.0
52	NCR	Farsø	27361	27361	100.0
50	NCR	Aarhus	23416	23416	100.0
29	NCR	Skelagervej 15	20773	20773	100.0
81	NCR	Spar København Tørnholm	20148	20148	100.0
102	NCR	Aalborg Storcenter Afd	18297	18297	100.0

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

<Query>

<Screenshot of the resultant table>

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

<Query>

```
select B.atm_number,
B.atm_manufacturer,
C.location,
total_transaction_count
from
(
select atm_id,
count(atm_id) as total_transaction_count
from
etl_proj_schema.fact_atm_trans
```

```

group by atm_id
order by total_transaction_count desc limit 10
) A,
etl_proj_schema.dim_atm B,
etl_proj_schema.dim_location C
where A.atm_id = B.atm_id
and B.atm_location_id = C.location_id
order by total_transaction_count desc;

```

<Screenshot of the resultant table>

Search for services, features, marketplace products, and docs				[Alt+S]	upgradnikitharo @ 0009-0230-2705	N. Virginia	Support
Rows returned (10)				Export			
Search rows				< 1 > ⚙			
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	42787				
41	Diebold Nixdorf	Skagen	42732				
48	Diebold Nixdorf	BrÅfÅ, nderlev	42493				

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

<Query>

```

select total.year,
total.month,
total_transaction_count,
inactive_count,
convert(decimal(10,4),100.0*inactive_count/total_transaction_count) as
inactive_count_percentage
from

```

```

(
select year,month, count(*) as total_transaction_count
from
etl_proj_schema.fact_atm_trans A, etl_proj_schema.dim_date B
where A.date_id = B.date_id
group by year, month
) total,
(
select year,month, count(*) as inactive_count
from
etl_proj_schema.fact_atm_trans C, etl_proj_schema.dim_date D
where C.date_id = D.date_id
and
C.atm_status = 'Inactive'
group by year, month
) inactive
where total.month = inactive.month
order by inactive_count desc;

```

<Screenshot of the resultant table>

Search for services, features, marketplace products, and docs [Alt+S] upgradnikitharo @ 0009-0230-2705 N. Virginia Support

Rows returned (12)					Export ▼
<input type="text" value="Search rows"/>					< 1 2 > ⚙️
year ▼	month ▼	total_transaction_count ▼	inactive_count ▼	inactive_count_percentage ▼	
2017	April	218865	41830	19.1122	
2017	March	209586	41046	19.5843	
2017	July	227682	38139	16.7509	
2017	May	222418	37679	16.9406	
2017	June	225166	36789	16.3386	
2017	August	217218	36713	16.9014	
2017	February	182659	36656	20.0679	
2017	January	180195	35953	19.9522	
2017	September	202101	28913	14.3062	
2017	October	191667	21780	11.3634	

services, features, marketplace products, and docs [Alt+S] upgradnikitharo @ 0009-0230-2705 N. Virginia Support

Rows returned (12) Export

Search rows

year	month	total_transaction_count	inactive_count	inactive_count_percentage
2017	November	193967	21684	11.1792
2017	December	197048	20476	10.3913

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

<Query>

```
select B.atm_number, B.atm_manufacturer, C.location, total_transaction_amount
from
(
select atm_id, sum(transaction_amount) as total_transaction_amount
from
etl_proj_schema.fact_atm_trans
group by atm_id
order by total_transaction_amount desc limit 10
) A,
etl_proj_schema.dim_atm B,
etl_proj_schema.dim_location C
where A.atm_id = B.atm_id
and B.atm_location_id = C.location_id
order by total_transaction_amount desc;
```

<Screenshot of the resultant table>

Rows returned (10)				Export
<input type="text" value="Search rows"/>				< 1 >
atm_number	atm_manufacturer	location	total_transaction_amount	
39	NCR	Svenstrup	277097637	
20	NCR	Bispensgade	271008803	
24	NCR	Hobro	268289882	
10	NCR	NÅfÅ, resundby	267379103	
45	NCR	Abildgaard	265639616	
16	NCR	Skive	220677013	
40	Diebold Nixdorf	Frederikshavn	219812287	
41	Diebold Nixdorf	Skagen	214127315	
1	NCR	NÅfÅ, stved	213721117	
48	Diebold Nixdorf	BrÅfÅ, nderslev	212883099	

- 6. Number of failed ATM transactions across various card types

<Query>

```

select C.card_type, total_transaction_count, inactive_count,
convert(decimal(10,4),100.0*inactive_count/total_transaction_count) as
inactive_count_percentage
from
(
select card_type_id, count(atm_id) as total_transaction_count
from
etl_proj_schema.fact_atm_trans
group by card_type_id
order by total_transaction_count desc limit 10
) A,
(
select card_type_id, count(atm_id) as inactive_count
from
etl_proj_schema.fact_atm_trans
where atm_status = 'Inactive'
group by card_type_id
order by inactive_count desc limit 10

```

) B,
 etl_proj_schema.dim_card_type C
 where A.card_type_id = B.card_type_id AND A.card_type_id = C.card_type_id
 order by inactive_count_percentage desc;

<Screenshot of the resultant table>

The screenshot shows a web interface with a table of card types. The table has four columns: card_type, total_transaction_count, inactive_count, and inactive_count_percentage. There are 10 rows of data. The interface includes a search bar, a 'Rows returned (10)' indicator, and an 'Export' button.

card_type	total_transaction_count	inactive_count	inactive_count_percentage
Mastercard - on-us	458226	86000	18.7680
VISA	170828	30713	17.9789
Dankort - on-us	143813	24680	17.1611
CIRRUS	17362	2953	17.0084
HÃfÃ\vekort - on-us	62487	10331	16.5330
Dankort	28581	4557	15.9441
MasterCard	400507	63482	15.8504
Visa Dankort - on-us	748805	112972	15.0869
HÃfÃ\vekort	8459	1208	14.2806
Visa Dankort	427840	60547	14.1517

- **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 atm.atm_number,
loc.location,
CASE(date.weekday) when 'Saturday' then '1' when 'Sunday' then '1' else '0' end as
weekend_flag, count(*) as total_transaction_count
from etl_proj_schema.fact_atm_trans fact,
etl_proj_schema.dim_atm atm ,
etl_proj_schema.dim_location loc,
etl_proj_schema.dim_date date
```

where fact.atm_id = atm.atm_id
and fact.weather_loc_id = loc.location_id and fact.date_id = date.date_id
group by atm_number, location, weekend_flag
order by atm_number, location, weekend_flag;

<Screenshot of the resultant table>

Rows returned (100)

Search rows

Export

atm_number	location	weekend_flag	total_transaction_count
1	NÄfÄ'stved	0	32711
1	NÄfÄ'stved	1	10076
10	NÄfÄ ,rresundby	0	41667
10	NÄfÄ ,rresundby	1	12127
100	Intern Skive	0	17812
100	Intern Skive	1	1
101	Bryggen Vejle	0	11693
101	Bryggen Vejle	1	3247
102	Aalborg Storcenter Afd	0	14556
102	Aalborg Storcenter Afd	1	3741

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

<Query>

<Screenshot of the resultant table>