

## 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 top 10 atm_number, atm_manufacturer, location, count(trans_id) as
total_transaction_count, count(case
when atm_status='Inactive' then 1 end) as inactive_count,
round(((inactive_count*100.0)/total_transaction_count),1) as inactive_count_per
from sparnord.atm_dim a
inner join sparnord.transaction_fact t
on a.atm_id=t.atm_id
inner join sparnord.location_dim l
on l.location_id=t.weather_loc_id
where atm_status='Inactive'
group by atm_number, atm_manufacturer, location
order by atm_number desc
```

<Screenshot of the resultant table>

atm_number ▾	atm_manufacturer ▾	location ▾	total_transaction_count ▾	inactive_count ▾	inactive_count_per ▾
94	NCR	ÅfEosterÅfÅ¸ Duus	33982	33982	100.0
92	NCR	NykÅfÅ, bing Mors	30883	30883	100.0
91	NCR	Spar KÅfÅ, bmand TornhÅfÅ, j	20148	20148	100.0
88	NCR	Durup	17164	17164	100.0
87	NCR	FarsÅfÅ,	27361	27361	100.0
87	NCR	Aarhus	23416	23416	100.0
82	NCR	Ikast	13640	13640	100.0
78	Diebold Nixdorf	Intern BrÅfÅ, nderslev	9926	9926	100.0
77	NCR	Intern HolbÅfÅ, k	3758	3758	100.0
67	NCR	Intern Odense	568	568	100.0

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

<Query>

```
select weather_main,count(trans_id) as total_transaction_count,
count(case
when atm_status='Inactive' then 1 end) as inactive_count,
round(((inactive_count*100.0)/total_transaction_count),4) as inactive_count_per
from sparnord.transaction_fact t
group by weather_main
order by total_transaction_count desc
```

<Screenshot of the resultant table>

weather_main	total_transaction_count	inactive_count	inactive_count_per
Clouds	1181901	194027	16.4165
Rain	545135	86017	15.7790
Clear	543949	85531	15.7241
Mist	82801	12864	15.5360
Drizzle	62530	8670	13.8653
Snow	23405	4813	20.5640
Fog	18174	3729	20.5183
	8087	1645	20.3413
Thunderstorm	2549	361	14.1624
TORNADO	38	1	2.6316
Haze	3	0	0.0000

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

<Query>

```
select top 10 atm_number , atm_manufacturer, location,count(trans_id) as
total_transaction_count
from sparnord.atm_dim a
inner join sparnord.transaction_fact t
on a.atm_id=t.atm_id
inner join sparnord.location_dim l
on l.location_id=t.weather_loc_id
group by atm_number,atm_manufacturer,location
order by total_transaction_count desc
```

<Screenshot of the resultant table>

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atm_number ▼	atm_manufacturer ▼	location ▼	total_transaction_count ▼	
12	NCR	Svenstrup	55380	
110	Diebold Nixdorf	Bispensgade	54211	
41	Diebold Nixdorf	NÃfÃ, rresundby	53794	
84	NCR	Hobro	53378	
104	NCR	Abildgaard	53198	
26	NCR	Skive	44043	
12	NCR	Frederikshavn	43767	
109	Diebold Nixdorf	NÃfÃ;stved	42787	
21	NCR	Skagen	42732	
37	NCR	BrÃfÃ, nderslev	42493	

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

<Query>

```
select year, month, count(trans_id) as total_transaction_count,
count(case
when atm_status='Inactive' then 1 end) as inactive_count,
round(((inactive_count*100.0)/total_transaction_count),4) as inactive_count_per
from sparnord.date_dim d
inner join sparnord.transaction_fact t
on d.date_id=t.date_id
group by year, month
order by total_transaction_count desc
```

<Screenshot of the resultant table>

year	month	total_transaction_count	inactive_count	inactive_count_per
2017	July	227682	38139	16.7510
2017	June	225166	36789	16.3386
2017	May	222418	37679	16.9406
2017	April	218865	41830	19.1122
2017	August	217218	36713	16.9015
2017	March	209586	41046	19.5843
2017	September	202101	28913	14.3062
2017	December	197048	20476	10.3914
2017	November	193967	21684	11.1792
2017	October	191667	21780	11.3635

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

<Query>

```
select atm_number , atm_manufacturer, location, sum(transaction_amount)as
total_transaction_amount
from sparnord.atm_dim a
inner join sparnord.transaction_fact t
on a.atm_id=t.atm_id
inner join sparnord.location_dim l
on l.location_id=t.weather_loc_id
group by atm_manufacturer,atm_number,location
order by total_transaction_amount desc
```

<Screenshot of the resultant table>

atm_number	atm_manufacturer	location	total_transaction_amount
12	NCR	Svenstrup	277097637
110	Diebold Nixdorf	Bispensgade	271008803
84	NCR	Hobro	268289882
41	Diebold Nixdorf	NÃfÃ, rresundby	267379103
104	NCR	Abildgaard	265639616
26	NCR	Skive	220677013
12	NCR	Frederikshavn	219812287
21	NCR	Skagen	214127315
109	Diebold Nixdorf	NÃfÃstved	213721117
37	NCR	BrÃfÃ, nderslev	212883099

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

<Query>

```
select card_type , count(trans_id) as transaction_count,
count(case
when atm_status='Inactive' then 1 end) as inactive_count,
round(((inactive_count*100.0)/transaction_count),4) as inactive_count_per
from sparnord.card_type_dim ca
inner join sparnord.transaction_fact t
on ca.card_type_id=t.card_type_id
group by card_type
order by inactive_count_per desc
```

<Screenshot of the resultant table>

card_type ▼	transaction_count ▼	inactive_count ▼	inactive_count_per ▼
Mastercard - on-us	458226	86000	18.7680
VISA	170828	30713	17.9789
Dankort - on-us	143813	24680	17.1612
CIRRUS	17362	2953	17.0084
HÃfÃ\vekort - on-us	62487	10331	16.5330
Dankort	28581	4557	15.9442
MasterCard	400507	63482	15.8504
Visa Dankort - on-us	748805	112972	15.0870
HÃfÃ\vekort	8459	1208	14.2806
Visa Dankort	427840	60547	14.1518

**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_number,atm_manufacturer,location,
(CASE WHEN weekday='Sunday' or weekday='Saturday' THEN 1 ELSE 0 END) as
weekend_flag,
count(*) as total_transaction_count
from sparnord.date_dim d
inner join sparnord.transaction_fact t
on d.date_id=t.date_id
inner join sparnord.location_dim l
on l.location_id=t.weather_loc_id
inner join sparnord.atm_dim a
on a.atm_location_id=l.location_id
group by atm_number,atm_manufacturer,location,weekend_flag
order by atm_number,atm_manufacturer,location,weekend_flag,total_transaction_count desc
```

<Screenshot of the resultant table>

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

<Query>

```
select atm_number,atm_manufacturer,location,weekday,count(trans_id) as
total_transaction_count
from sparnord.date_dim d
inner join sparnord.transaction_fact t
on d.date_id=t.date_id
inner join sparnord.atm_dim a
on a.atm_id=t.atm_id
inner join sparnord.location_dim l
on a.atm_location_id=l.location_id
where location='Vejgaard' and weekday='Friday'
group by atm_number,atm_manufacturer,location,weekday
```

<Screenshot of the resultant table>

Rows returned (2)					Export ▼
<input type="text" value="Search rows"/>					< 1 > ⚙️
atm_number ▼	atm_manufacturer ▼	location ▼	weekday ▼	total_transaction_count ▼	
2	NCR	Vejgaard	Friday	1341	
103	Diebold Nixdorf	Vejgaard	Friday	6715	