

Solving analytical queries on Redshift Cluster

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

```
select
a.atm_number , a.atm_manufacturer , l.location ,
count(t.trans_id) AS total_transaction_count ,
sum(case when t.atm_status = 'Inactive' then 1 else 0 end) AS inactive_count,
(inactive_count/total_transaction_count)*100 as count_percent
from
atm_etl_db.transaction_fact t ,
atm_etl_db.atm_dimension a ,
atm_etl_db.loc_dimension l
where t.atm_id = a.atm_id and a.atm_loc_id = l.loc_id
group by 1,2,3
order by 5 desc
limit 10;
```

atm_number	atm_manufacturer	location	total_transaction_count	inactive_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 Kjøbmandstornhøj	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.

```
select
t.weather_main,
count(t.trans_id) AS total_transaction_count ,
sum(case when t.atm_status = 'Inactive' then 1 else 0 end) AS inactive_count,
case when coalesce(inactive_count,0) = 0 then 0.0000
else trunc((cast(inactive_count AS
numeric(10,4))/total_transaction_count)*100,2) end as inactive_count_percent
from
atm_etl_db.transaction_fact t
where t.weather_main != "
group by 1
order by 4 desc
limit 10;
```

amazon.com/redshiftv2/home?region=us-east-1#query-editor:

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weather_main ▼	total_transaction_count ▼	inactive_count ▼	inactive_count_percent ▼
Snow	23405	4813	20.5600
Fog	18174	3729	20.5100
Clouds	1181901	194027	16.4100
Rain	545135	86017	15.7700
Clear	543949	85531	15.7200
Mist	82801	12864	15.5300
Thunderstorm	2549	361	14.1600
Drizzle	62530	8670	13.8600
TORNADO	38	1	2.6300
Haze	3	0	0.0000

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





```
select
a.atm_number , a.atm_manufacturer , l.location ,
count(t.trans_id) as total_transaction_count
from
atm_etl_db.transaction_fact t ,
atm_etl_db.atm_dimension a ,
atm_etl_db.loc_dimension l
where t.atm_id = a.atm_id and a.atm_loc_id = l.loc_id
group by 1,2,3
order by 4 desc
limit 10;
```


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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, nderslev	42493

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


```
select
d.year , d.month ,
count(t.trans_id) AS total_transaction_count ,
sum(case when t.atm_status = 'Inactive' then 1 else 0 end) AS inactive_count,
case when coalesce(inactive_count,0) = 0 then 0.0000
else trunc((cast(inactive_count AS
numeric(10,4))/total_transaction_count)*100,2) end as inactive_count_percent
from
atm_etl_db.transaction_fact t inner join atm_etl_db.date_dimension d on t.date_id =
d.date_id
group by 1,2
order by 1,2;
```

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Rows returned (12)






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year ▼	month ▼	total_transaction_count ▼	inactive_count ▼	inactive_count_percent ▼
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	180195	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







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

```
select
a.atm_number , a.atm_manufacturer , l.location ,
sum(t.transaction_amount)as total_transaction_amount
from
atm_etl_db.transaction_fact t ,
atm_etl_db.atm_dimension a ,
atm_etl_db.loc_dimension l
where t.atm_id = a.atm_id and a.atm_loc_id = l.loc_id
group by 1,2,3
order by 4 desc
limit 10;
```

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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	NÃfÃ, rresundby	267379103
45	NCR	Abildgaard	265639616
16	NCR	Skive	220677013
40	Diebold Nixdorf	Frederikshavn	219812287
41	Diebold Nixdorf	Skagen	214127315
1	NCR	NÃfÃ'stved	213721117

6. Number of failed ATM transactions across various card types

```
select
c.card_type,
count(t.trans_id) AS total_transaction_count ,
sum(case when t.atm_status = 'Inactive' then 1 else 0 end) AS inactive_count,
case when coalesce(inactive_count,0) = 0 then 0.0000
else trunc((cast(inactive_count AS
numeric(10,4))/total_transaction_count)*100,2) end as inactive_count_percent
from
atm_etl_db.transaction_fact t inner join atm_etl_db.card_dimension c on
t.card_type_id = c.card_type_id
group by 1
order by 4 desc;
```

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Rows returned (12)				Export ▼
<input type="text" value="Search rows"/> < 1 2 > 				
card_type ▼	total_transaction_count ▼	inactive_count ▼	inactive_count_percent ▼	
Mastercard - on-us	458226	86000	18.7600	
VISA	170828	30713	17.9700	
Dankort - on-us	143813	24680	17.1600	
CIRRUS	17362	2953	17.0000	
HÃfÃ\vekort - on-us	62487	10331	16.5300	
Dankort	28581	4557	15.9400	
MasterCard	400507	63482	15.8500	
Visa Dankort - on-us	748805	112972	15.0800	
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

```
select a.atm_number, a.atm_manufacturer, l.location,
case when d.weekday in ('Saturday','Sunday') then 1 else 0 end as
weekend_flag,
count(t.trans_id) as total_transaction_count
from atm_etl_db.transaction_fact t ,
atm_etl_db.atm_dimension a ,
atm_etl_db.loc_dimension l ,
atm_etl_db.date_dimension d
where t.atm_id = a.atm_id and a.atm_loc_id = l.loc_id and t.date_id = d.date_id
group by 1,2,3,4
order by 1,2,3,4,5;
```

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Rows returned (222)

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< 1 2 3 4 5 6 7 ... 23 >

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atm_number ▼	atm_manufacturer ▼	location ▼	weekend_flag ▼	total_transaction_count ▼
1	NCR	NÃfÃ'stved	0	32711
1	NCR	NÃfÃ'stved	1	10076
10	NCR	NÃfÃ,rresundby	0	41667
10	NCR	NÃfÃ,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

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

```
select atm_number,atm_manufacturer,location,weekday,total_transaction_count from
(select a.atm_number, a.atm_manufacturer, l.location,d.weekday,
count(t.trans_id) as total_transaction_count ,
row_number() over(partition by a.atm_number order by total_transaction_count desc) as
Rank
from atm_etl_db.transaction_fact t ,
atm_etl_db.atm_dimension a ,
atm_etl_db.loc_dimension l ,
atm_etl_db.date_dimension d
where t.atm_id = a.atm_id and a.atm_loc_id = l.loc_id and t.date_id = d.date_id and
l.location = 'Vejgaard'
group by 1,2,3,4
order by 5) T
where T.Rank <= 1
```

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Rows returned (2)

Export

Search rows

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atm_number	atm_manufacturer	location	weekday	total_transaction_count
103	Diebold Nixdorf	Vejgaard	Friday	4757
2	NCR	Vejgaard	Friday	6290