

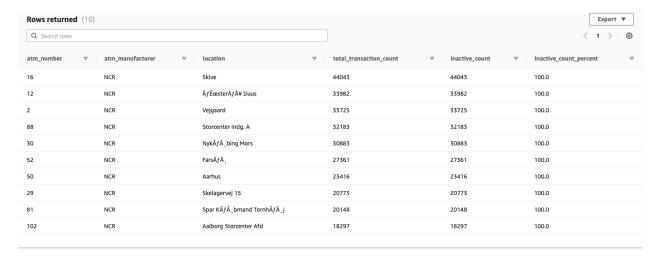


Solving analytical queries on RedShift Cluster

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

```
select atm_number, atm_manufacturer, location,total_transaction_count,
total transaction count as inactive count,
round(100.0*total transaction count/total transaction count,1) as inactive count percent from
(select atm number, weather loc id, atm manufacturer, total transaction count,
total transaction count as inactive count,
round(100.0*total transaction count/total transaction count,1) as inactive count percent from
(select atm id, weather loc id, total transaction count from
(select atm id, weather loc id, atm status, count(transaction amount) total transaction count
from etl project.fact atm trans group by atm id, weather loc id, atm status having atm status
= 'Inactive' order by 2, 3, 1) fat
where atm status = 'Inactive' order by total transaction count desc limit 10) as fat 1
join
(select atm id, atm number, atm manufacturer from etl project.dim atm) as atm
on fat 1.atm id = atm.atm id
) as a
join
(select location id, location from etl project.dim location) b
on a.weather loc id = b.location id
order by total transaction count desc LIMIT 10;
```







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

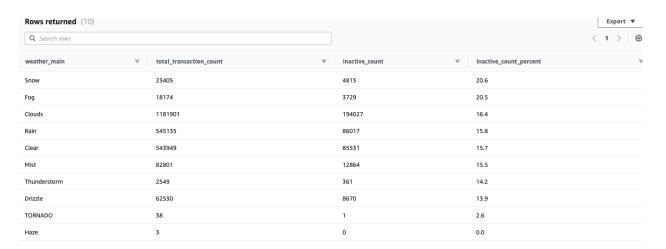
select a.weather_main as weather_main, total_transaction_count, nvl(inactive_count,0) inactive_count, round(100.0*nvl(inactive_count,0)/total_transaction_count,1) as inactive count percent from

(select weather_main, count(transaction_amount) total_transaction_count from etl_project.fact_atm_trans group by weather_main having weather_main is not null and weather main!=" and weather main!=") as a,

(select weather_main, atm_status, count(transaction_amount) inactive_count from etl_project.fact_atm_trans group by weather_main, atm_status having atm_status = 'Inactive' and weather_main is not null and weather_main!=" and weather_main!=" order by 1,2) as b

where

a.weather_main = b.weather_main(+)
order by inactive count percent desc;



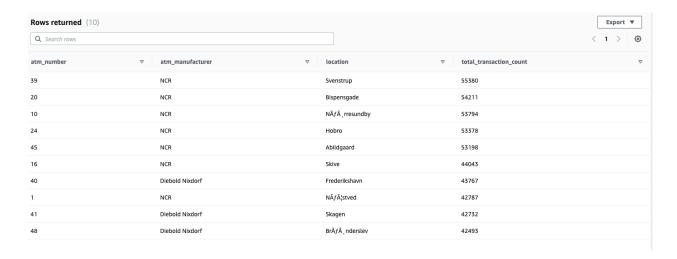




3. Top 10 ATMs with the most number of transactions throughout the year

select atm.atm_number as atm_number, atm.atm_manufacturer as atm_manufacturer, weather.location as location, total_transaction_count from (select atm_id, weather_loc_id, count(transaction_amount) total_transaction_count from etl_project.fact_atm_trans group by atm_id, weather_loc_id) as fact_atm_trans, (select atm_id, atm_number,atm_manufacturer from etl_project.dim_atm) as atm, (select location_id, location from etl_project.dim_location) weather where fact_atm_trans.atm_id = atm.atm_id and

fact_atm_trans.weather_loc_id = weather.location_id order by total_transaction_count desc limit 10;

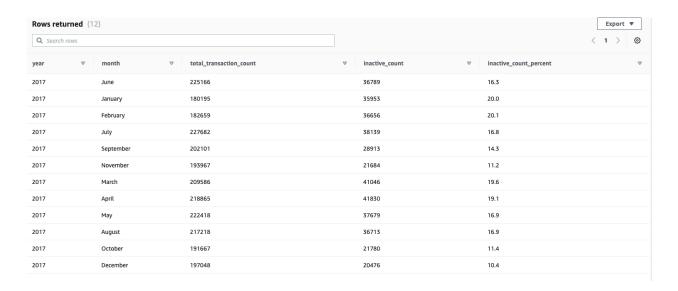






4. Number of overall ATM transactions going inactive per month for each month

select a total.year as year, a total.month as month, total transaction count, inactive count, round(100.0*inactive count/total transaction count,1) as inactive count percent from (select year, month, count(trans id) as total transaction count from (select date id, year, month from etl project.dim date) date dt, (select date id, trans id, atm status from etl project.fact atm trans) fat 1 where date dt.date id = fat 1.date id group by year, month) as a total join (select year, month, count(trans id) as inactive count from (select date id, year, month from etl project.dim date) date dt 2, (select date id, trans id, atm status from etl project.fact atm trans where atm status='Inactive') fat 2 where date_dt_2.date_id = fat_2.date_id and fat_2.atm_status='Inactive' group by year, month) as b inactive on a total.year = b inactive.year and a total.month = b inactive.month --order by round(100.0*inactive count/total transaction count,1) desc;





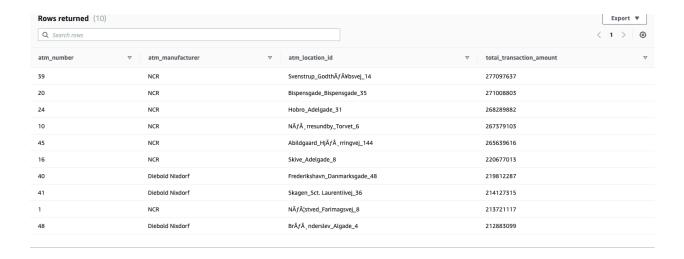


5. Top 10 ATMs with the highest total withdrawn amount throughout the year

select b.atm_number, b.atm_manufacturer, b.atm_location_id, SUM(TRANSACTION_AMOUNT) AS TOTAL_TRANSACTION_AMOUNT from etl_project.fact_atm_trans a, etl_project.DIM_ATM b where a.ATM_ID = b.ATM_ID

GROUP BY b.atm_number, b.atm_manufacturer, b.atm_location_id

ORDER BY TOTAL_TRANSACTION_AMOUNT DESC limit 10;







6. Number of failed ATM transactions across various card types

select fat_active.card_type as card_type, TOTAL_TRANSACTION_count, inactive_count, round(100.0*inactive_count/total_transaction_count,4) invalid_count_percent from (select b.card_type, count(*) AS TOTAL_TRANSACTION_count from etl_project.fact_atm_trans a, etl_project.DIM_CARD_TYPE b where a.CARD_TYPE_ID = b.CARD_TYPE_ID GROUP BY b.card_type) as fat_active join

(select b.card_type, count(*) AS inactive_count from etl_project.fact_atm_trans a, etl_project.DIM_CARD_TYPE b where a.CARD_TYPE_ID = b.CARD_TYPE_ID and a.atm_Status = 'Inactive' GROUP BY b.card_type) as fat_inactive on fat_inactive.card_type = fat_active.card_type

ORDER BY invalid count percent DESC;

card_type	▼ total_transaction_count	▽ inactive_count	▽ invalid_count_percent
Mastercard - on-us	458226	86000	18.7680
VISA	170828	30713	17.9789
Dankort - on-us	143813	24680	17.1612
CIRRUS	17362	2953	17.0084
$ extsf{H} ilde{A}f\hat{A}_{ extsf{i}}^{ extsf{I}} extsf{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
$H ilde{A}f\hat{A}_{i}^{t}vekort$	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

```
select a.ATM number, a.ATM manufacturer, I.location,
case when d.weekday = 'Sunday' then 1
when d.weekday = 'Saturday' then 1
else 0
end as weekend flag, count(*) as total transaction count
from etl_project.fact_atm_trans f,
etl project.dim Date d,
etl project.dim Atm a,
etl project.dim location l
where a.atm id = f.atm id
and d.date id = f.date id
and I.location_id = f.weather_loc_id
and (a.ATM number like '10%' or a.ATM number = 1)
group by a.ATM number, a.ATM manufacturer, I.location, weekend flag
order by a.atm number asc, weekend flag asc, total transaction count desc, a.atm number
asc limit 10;
```

atm_number	▽	atm_manufacturer	▽	location	▽	weekend_flag	▽	total_transaction_count	▽
1		NCR		N $ ilde{A}f\hat{A}^{I}_{I}$ stved		0		32711	
1		NCR		N $ ilde{A}f\hat{A}_{i}^{l}$ stved		1		10076	
10		NCR		$N\tilde{A}f\hat{A}$, rresundby		0		41667	
10		NCR		$N\tilde{A}f\hat{A}$, 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"

```
select b.ATM number, b.ATM manufacturer, b.location, b.weekday, a.total trnsaction count
(select ATM number, max(cnt) as total trnsaction count from
select a.ATM number, a.atm id, a.ATM manufacturer, I.location,
d.weekday, count(*) as cnt from etl_project.fact_atm_trans f,
etl project.dim Date d,
etl project.dim Atm a,
etl project.dim location l
where I.location='Veigaard'
and a.atm id = f.atm id
and d.date id = f.date id
and I.location id = f.weather loc id
group by a.ATM_number, a.atm_id, a.ATM_manufacturer, l.location,
d.weekday) group by ATM number) a,
 (select a.ATM number, a.atm id, a.ATM manufacturer, I.location,
d.weekday, count(*) as cnt from etl project.fact atm trans f,
etl project.dim Date d,
etl_project.dim_Atm a,
etl project.dim location l
where I.location='Veigaard'
and a.atm_id = f.atm_id
and d.date id = f.date id
and I.location id = f.weather loc id
group by a.ATM number, a.atm id, a.ATM manufacturer, l.location,
d.weekday) b
 where a.ATM number = b.atm number
 and a.total trnsaction count = b.cnt;
```

103 Diebold Nixdorf Velgaard Friday 4757 2 NCR Velgaard Friday 6290	atm_number	▽ atm_manufacturer	▽ location	▽ weekday	▽ total_trnsaction_count	▽
2 NCR Vejgaard Friday 6290	103	Diebold Nixdorf	Vejgaard	Friday	4757	
	2	NCR	Vejgaard	Friday	6290	