

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
  a.atm_number,
  a.atm_manufacturer,
  l.location,
  count(trans_id) as total_transaction_count,
  sum(
    case when atm_status = 'Inactive' then 1 else 0 end
  ) as inactive_transaction_count,
  (
    inactive_transaction_count / total_transaction_count
  ) * 100 as count_percent
from
  atm_data.fact_atm_trans f,
  atm_data.dim_atm a,
  atm_data.dim_location l
where
  f.atm_id = a.atm_id
  and a.atm_location_id = l.location_id
group by
  a.atm_number,
  a.atm_manufacturer,
  l.location
having
  count_percent > 50
order by
  inactive_transaction_count desc
limit
  10;
```

Services

Search

[Alt+S]

N. Virginia

voclabs/user2631029=abhijeet044@gmail.com @ 9713-7809-5647

dim_card_type

dim_date

dim_location

fact_atm_trans

Completed, started on January 16, 2024 at 01:16:14
ELAPSED TIME: 00 m 20 s

Rows returned (10)

Export

Search rows

< 1 > ⚙

atm_number	atm_manufacturer	location	total_transaction_count	inactive_transaction_count	count_percent
62	Diebold Nixdorf	Terndrup	44043	44043	100
9	Diebold Nixdorf	Hadsund	33982	33982	100
10	NCR	NÃfÃ, rresundby	33725	33725	100
48	Diebold Nixdorf	BrÃfÃ, nderslev	32183	32183	100
30	NCR	NykÃfÃ, bing Mors	30883	30883	100
52	NCR	FarsÃfÃ,	27361	27361	100
50	NCR	Aarhus	23416	23416	100
29	NCR	Skelagervej 15	20773	20773	100
42	NCR	Vinderup	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
f.weather_main,
count(trans_id) as total_transaction_count,
sum(
case when 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_data.fact_atm_trans f
where
f.weather_main != ''
group by
f.weather_main
order by
inactive_count_percent desc
limit
10;
```

Services Search [Alt+S] ELAPSED TIME: 00 m 02 s N. Virginia voclabs/user2631029=abhijeet044@gmail.com @ 9713-7809-5647				
► dim_date	...	Rows returned (10)		
► dim_location	...	Search rows		
► fact_atm_trans	...	Export		
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(trans_id) as total_transaction_count
from
  atm_data.fact_atm_trans f,
  atm_data.dim_atm a,
  atm_data.dim_location l
where
  f.atm_id = a.atm_id
  and a.atm_location_id = l.location_id
group by
  a.atm_number,
  a.atm_manufacturer,
  l.location
order by
  total_transaction_count desc
limit
  10;
```

Services	Search	[Alt+S]	N. Virginia	voclabs/user2631029=abhijeet044@gmail.com @ 9713-7809-5647
dim_date	...	ELAPSED TIME: 00 m 02 s		
dim_location	...	Rows returned (10)	Export	
fact_atm_trans	...	Search rows	< 1 >	
atm_number	atm_manufacturer	location	total_transaction_count	
39	NCR	Svenstrup	55380	
54	NCR	Durup	54211	
101	NCR	Bryggen Vejle	53794	
24	NCR	Hobro	53378	
59	Diebold Nixdorf	Nykjøbing Mors Lobby	53198	
62	Diebold Nixdorf	Terndrup	44043	
28	NCR	Landskron, r	43767	
1	NCR	Nykjøbsted	42787	
41	Diebold Nixdorf	Skagen	42732	
56	Diebold Nixdorf	Kjøbenhavn, ge	42493	

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

```
select
  d.year,
  d.month,
  count(trans_id) as total_transaction_count,
  sum(
    case when 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_data.fact_atm_trans f
  inner join atm_data.dim_date d on f.date_id = d.date_id
group by
  d.year,
  d.month
order by
  d.year,
  d.month
```

Services	Search	[Alt+S]	N. Virginia	voclabs/user2631029=abhijeet044@gmail.com @ 9713-7809-5647
dim_date	...	ELAPSED TIME: 00 m 02 s		
dim_location	...	Rows returned (12)	Export	
fact_atm_trans	...	Search rows	< 1 2 >	
year	month	total_transaction_count	inactive_count	inactive_count_percent
2017	April	218150	33660	15.4200
2017	August	211624	38743	18.3000
2017	December	203632	29744	14.6000
2017	February	191893	33628	17.5200
2017	January	199044	34582	17.3700
2017	July	209023	36985	17.6900
2017	June	198007	27342	13.8000
2017	March	214714	37102	17.2700
2017	May	221019	31085	14.0600
2017	November	194566	29535	15.1700

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

```
select
  a.atm_number,
  a.atm_manufacturer,
  l.location,
  sum(transaction_amount) as total_transaction_amount
from
  atm_data.fact_atm_trans f,
  atm_data.dim_atm a,
  atm_data.dim_location l
where
  f.atm_id = a.atm_id
  and a.atm_location_id = l.location_id
group by
  a.atm_number,
  a.atm_manufacturer,
  l.location
order by
  total_transaction_amount desc
limit
  10;
```

Services	Search	[Alt+S]	N. Virginia	voclabs/user2631029=abhijeet044@gmail.com @ 9713-7809-5647
dim_date	...	ELAPSED TIME: 00 m 15 s		
dim_location	...	Rows returned (10)		
fact_atm_trans	...	Search rows		
		atm_number	atm_manufacturer	location
		39	NCR	Svenstrup
		54	NCR	Durup
		24	NCR	Hobro
		101	NCR	Bryggen Vejle
		59	Diebold Nixdorf	NykÄ, bing Mors Lobby
		62	Diebold Nixdorf	Terndrup
		28	NCR	LÄ, gstÄ, r
		41	Diebold Nixdorf	Skagen
		1	NCR	NÄ,stved
		56	Diebold Nixdorf	KÄ, ge

6. Number of failed ATM transactions across various card types

```
select
  ct.card_type,
  count(trans_id) as total_transaction_count,
  sum(
    case when 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_data.fact_atm_trans f,
  atm_data.dim_card_type ct
where
  f.card_type_id = ct.card_type_id
group by
  ct.card_type
order by
  inactive_count_percent desc
limit
  10;
```

Services

Search

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dim_date

...

dim_location

...

fact_atm_trans

...

ELAPSED TIME: 00 m 03 s

Rows returned (10)

Export

Search rows

< 1 >

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
HÅfÅ\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
HÅfÅ\vekort	8459	1208	14.2800
Visa Dankort	427840	60547	14.1500





- 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(trans_id) as total_transaction_count
from
  atm_data.fact_atm_trans f,
  atm_data.dim_atm a,
  atm_data.dim_location l,
  atm_data.dim_date d
where
  f.atm_id = a.atm_id
  and a.atm_location_id = l.location_id
  and f.date_id = d.date_id
group by
  a.atm_number,
  a.atm_manufacturer,
  l.location,
  weekend_flag
order by
  a.atm_number,
  a.atm_manufacturer,
  l.location,
  weekend_flag,
  total_transaction_count
limit
  10;
```


Services

Search

[Alt+S]



N. Virginia

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► dim_date

► dim_location


► fact_atm_trans

ELAPSED TIME: 00 m 15 s

Rows returned (10)

Export

Search rows

< 1 > 

atm_number	atm_manufacturer	location	weekend_flag	total_transaction_count
1	NCR	NÃfÃstved	0	31565
1	NCR	NÃfÃstved	1	11222
10	NCR	NÃfÃ_rresundby	0	24659
10	NCR	NÃfÃ_rresundby	1	9066
100	NCR	Intern Skive	0	4890
100	NCR	Intern Skive	1	1360
101	NCR	Bryggen Vejle	0	40116
101	NCR	Bryggen Vejle	1	13678
102	NCR	Aalborg Storcenter Afd	0	13910
102	NCR	Aalborg Storcenter Afd	1	4387

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

```
select
  a.atm_number,
  a.atm_manufacturer,
  l.location,
  d.weekday,
  count(trans_id) as total_transaction_count
from
  atm_data.fact_atm_trans f
  inner join atm_data.dim_atm a on f.atm_id = a.atm_id
  inner join atm_data.dim_location l on a.atm_location_id = l.location_id
  inner join atm_data.dim_date d on f.date_id = d.date_id
where
  l.location = 'Vejgaard'
  and d.weekday in (
    select
      d.weekday
    from
      atm_data.fact_atm_trans f
      inner join atm_data.dim_date d on f.date_id = d.date_id
      inner join atm_data.dim_location l on f.weather_loc_id = l.location_id
    where
      l.location = 'Vejgaard'
    group by
      d.weekday
    order by
      count(f.trans_id) desc
    limit
      1
  )
group by
  a.atm_number,
  a.atm_manufacturer,
  l.location,
  d.weekday
order by
  total_transaction_count;
```

Services

Search

[Alt+S]

fact_atm_trans_pkey

dim_atm

dim_card_type

dim_date

dim_location

fact_atm_trans

Query results

Table details

Query 3213

Execution

Data

Visualize

Completed, started on January 16, 2024 at 01:41:40

ELAPSED TIME: 00 m 13 s

Rows returned (1)

Export

Search rows

< 1 >

atm_number	atm_manufacturer	location	weekday	total_transaction_count
103	Diebold Nixdorf	Vejgaard	Friday	3599