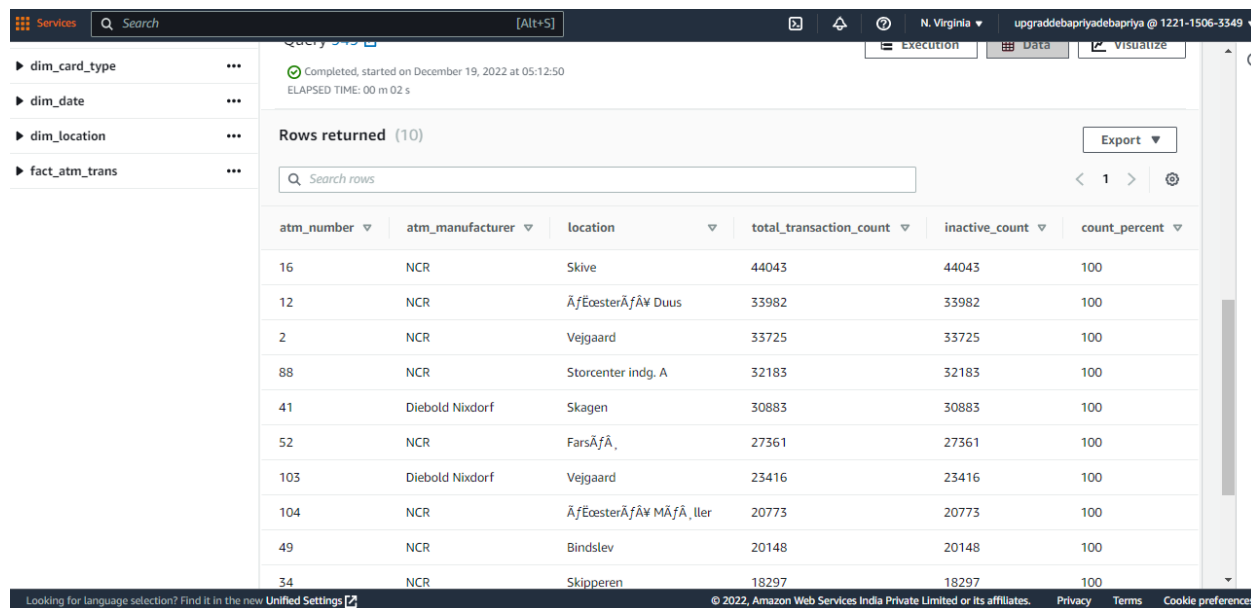


## Solving analytical queries on Redshift Cluster

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_count,
(inactive_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_count desc
limit 10;
```



The screenshot shows the AWS Redshift Query Editor interface. The query has been executed successfully, and the results are displayed in a table. The table has 6 columns: atm\_number, atm\_manufacturer, location, total\_transaction\_count, inactive\_count, and count\_percent. The results are sorted by inactive\_count in descending order.

atm_number	atm_manufacturer	location	total_transaction_count	inactive_count	count_percent
16	NCR	Skive	44043	44043	100
12	NCR	ÅfEosterÅfÅV Duus	33982	33982	100
2	NCR	Vejgaard	33725	33725	100
88	NCR	Storcenter indg. A	32183	32183	100
41	Diebold Nixdorf	Skagen	30883	30883	100
52	NCR	FarsÅfÅ,	27361	27361	100
103	Diebold Nixdorf	Vejgaard	23416	23416	100
104	NCR	ÅfEosterÅfÅV MÅfÅ, ller	20773	20773	100
49	NCR	Bindlev	20148	20148	100
34	NCR	Skipperen	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  [Alt+S] Execution Data Visualize

Query 1004 Completed, started on December 19, 2022 at 05:17:50  
ELAPSED TIME: 00 m 02 s

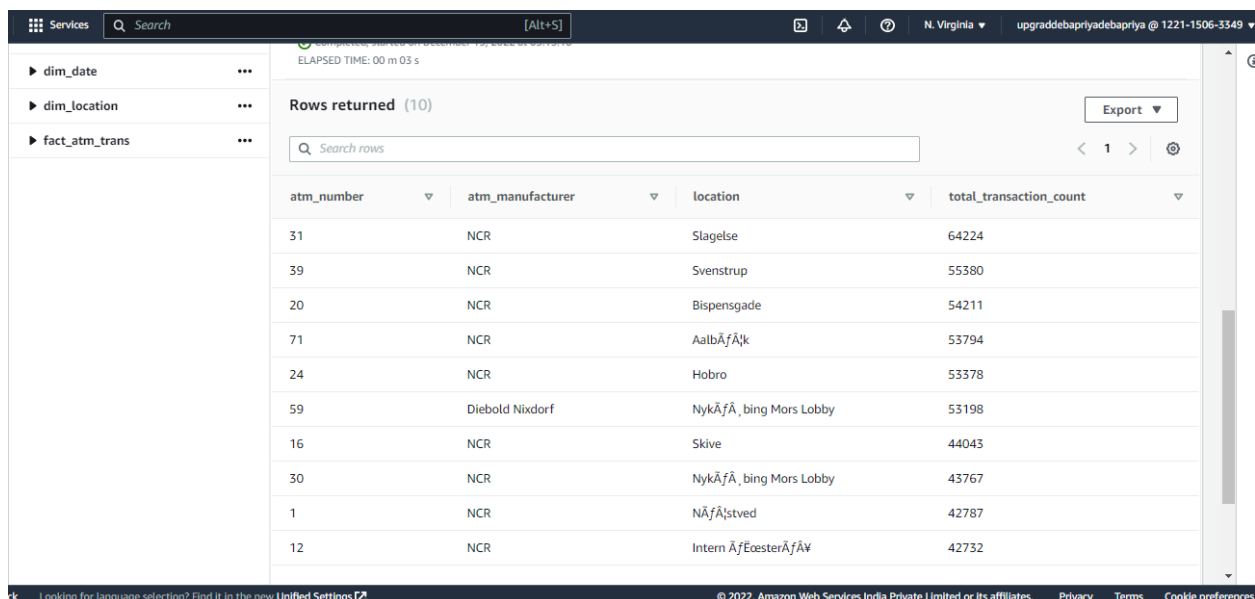
Rows returned (10) Export

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

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### 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;
```



The screenshot shows a data table with 10 rows, sorted by total transaction count in descending order. The columns are atm\_number, atm\_manufacturer, location, and total\_transaction\_count. The data is as follows:

atm_number	atm_manufacturer	location	total_transaction_count
31	NCR	Slagelse	64224
39	NCR	Svenstrup	55380
20	NCR	Bispensgade	54211
71	NCR	AalbÃfÃk	53794
24	NCR	Hobro	53378
59	Diebold Nixdorf	NykÃfÃ_bing Mors Lobby	53198
16	NCR	Skive	44043
30	NCR	NykÃfÃ_bing Mors Lobby	43767
1	NCR	NÃfÃstved	42787
12	NCR	Intern ÃfEosterÃfÃ	42732

#### 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  [Alt+S]

dim\_atm ...

dim\_card\_type ...

dim\_date ...

dim\_location ...

fact\_atm\_trans ...

Query 1045 [\[Link\]](#)

Execution Data Visualize

Completed, started on December 19, 2022 at 05:20:25  
ELAPSED TIME: 00 m 02 s

Rows returned (12)

Search rows

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

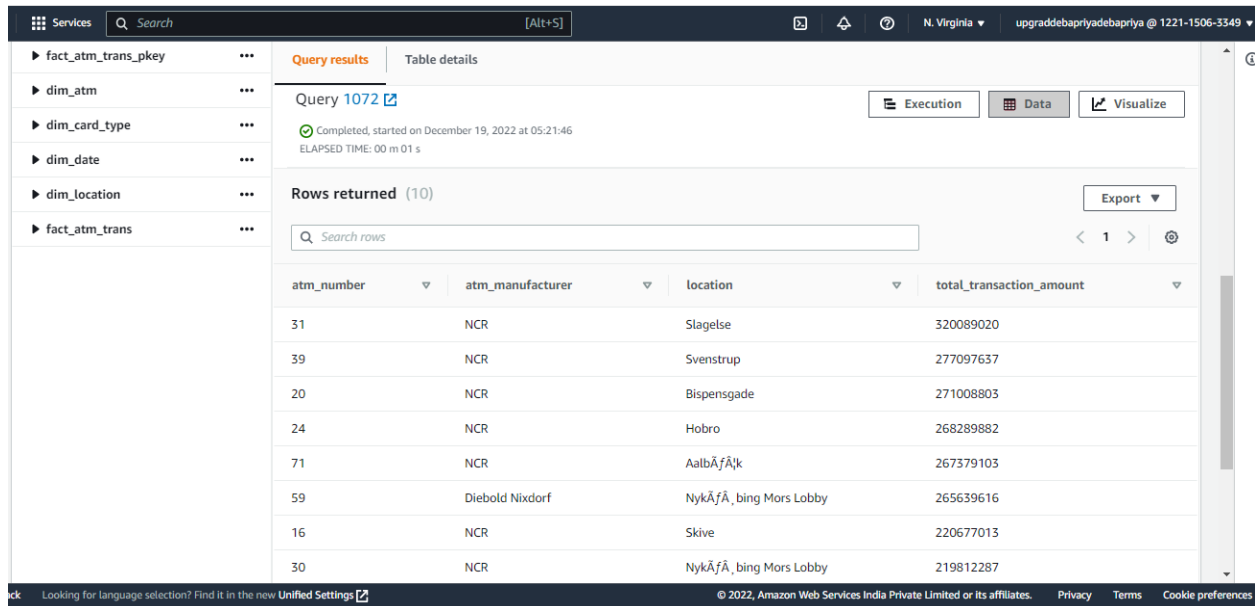
Export

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## 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;
```



The screenshot shows the AWS Glue console interface. On the left, a list of services is visible, including fact\_atm\_trans\_pkey, dim\_atm, dim\_card\_type, dim\_date, dim\_location, and fact\_atm\_trans. The main panel displays the query results for Query 1072, which was completed on December 19, 2022, at 05:21:46. The query results are shown in a table with 10 rows, ordered by total\_transaction\_amount in descending order. The table has four columns: atm\_number, atm\_manufacturer, location, and total\_transaction\_amount. The data is as follows:

atm_number	atm_manufacturer	location	total_transaction_amount
31	NCR	Slagelse	320089020
39	NCR	Svenstrup	277097637
20	NCR	Bispensgade	271008803
24	NCR	Hobro	268289882
71	NCR	AalbÃfÃk	267379103
59	Diebold Nixdorf	NykÃfÃ_bing Mors Lobby	265639616
16	NCR	Skive	220677013
30	NCR	NykÃfÃ_bing Mors Lobby	219812287

## 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	[Alt+S]	N. Virginia	upgraddebapriyadebapriya @ 1221-1506-3349
fact_atm_trans_pkey	...	Query results	Table details	
dim_atm	...	Query 1094	Execution	Data
dim_card_type	...	Completed, started on December 19, 2022 at 05:22:52		Visualize
dim_date	...	ELAPSED TIME: 00 m 02 s		
dim_location	...	Rows returned (10)		Export
fact_atm_trans	...	Search rows		
		card_type	total_transaction_count	inactive_count
		Mastercard - on-us	458226	86000
		VISA	170828	30713
		Dankort - on-us	143813	24680
		CIRRUS	17362	2953
		HÃfÃ\vekort - on-us	62487	10331
		Dankort	28581	4557
		MasterCard	400507	63482
		Visa Dankort - on-us	748805	112972
				inactive_count_percent
				18.7600
				17.9700
				17.1600
				17.0000
				16.5300
				15.9400
				15.8500
				15.0800

**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 upgraddebapriyadebapriya @ 1221-1506-3349

dim\_atm dim\_card\_type dim\_date dim\_location fact\_atm\_trans

Query 1119

Completed, started on December 19, 2022 at 05:24:38  
ELAPSED TIME: 00 m 02 s

Execution Data Visualize

Rows returned (10)

Search rows

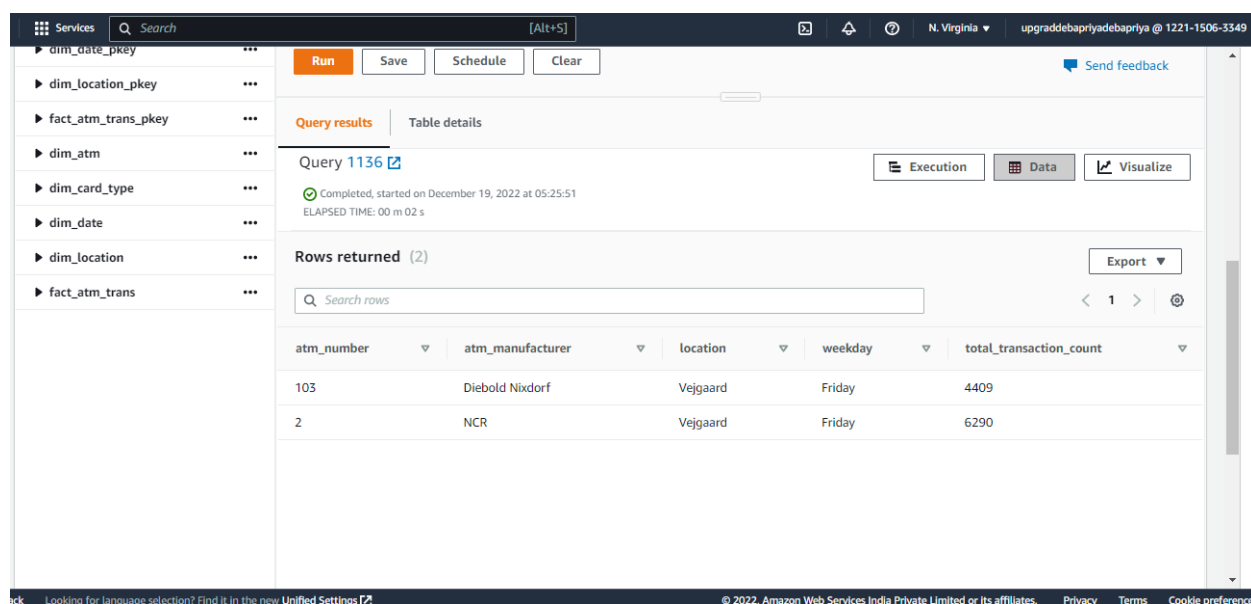
atm_number	atm_manufacturer	location	weekend_flag	total_transaction_count
1	NCR	NÄfÄ'stved	0	32711
1	NCR	NÄfÄ'stved	1	10076
100	NCR	Intern Skive	0	18902
100	NCR	Intern Skive	1	6542
102	NCR	Aalborg Storcenter Afd	0	6868
102	NCR	Aalborg Storcenter Afd	1	2173
103	Diebold Nixdorf	Vejgaard	0	18593
103	Diebold Nixdorf	Vejgaard	1	4823
104	NCR	Intern ÄfEosterÄfÄ	0	29079

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## 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.location_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;
```



The screenshot shows the Amazon Redshift Query Editor interface. The query results are displayed in a table with the following columns: atm\_number, atm\_manufacturer, location, weekday, and total\_transaction\_count. The results show two rows of data for the location 'Vejgaard' on Friday.

atm_number	atm_manufacturer	location	weekday	total_transaction_count
103	Diebold Nixdorf	Vejgaard	Friday	4409
2	NCR	Vejgaard	Friday	6290