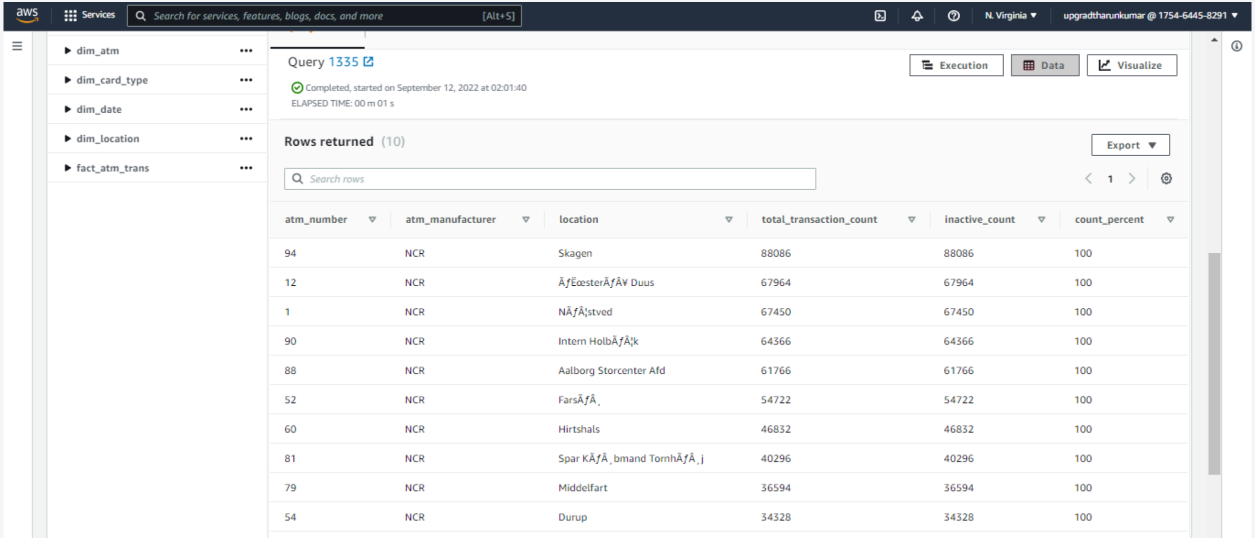
- **There are the few analytical queries on a Redshift cluster to find the solutions.**

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;
```



Query 1335

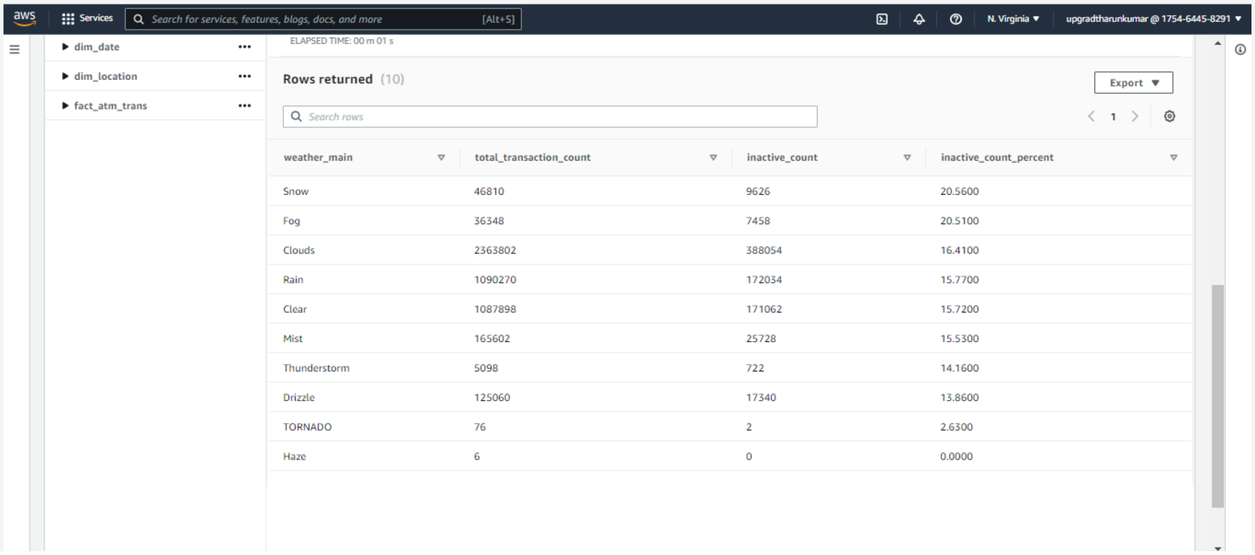
Completed, started on September 12, 2022 at 02:01:40
ELAPSED TIME: 00 m 01 s

Rows returned (10)

atm_number	atm_manufacturer	location	total_transaction_count	inactive_count	count_percent
94	NCR	Skagen	88086	88086	100
12	NCR	ÃƒËœsterÃƒÂ¥ Duus	67964	67964	100
1	NCR	NÃƒÂ¦stved	67450	67450	100
90	NCR	Intern HolbÃƒÂ¦k	64366	64366	100
88	NCR	Aalborg Storcenter Afd	61766	61766	100
52	NCR	FarsÃƒÂ¸	54722	54722	100
60	NCR	Hirtshals	46832	46832	100
81	NCR	Spar KÃƒÂ¸bmand TornhÃƒÂ¸j	40296	40296	100
79	NCR	Middelfart	36594	36594	100
54	NCR	Durup	34328	34328	100

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

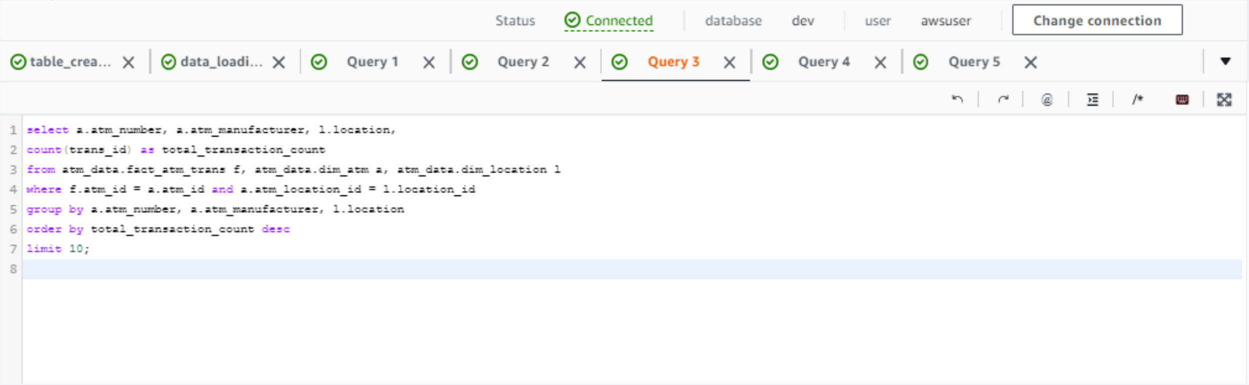
```
select f.weather_main,

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;
```



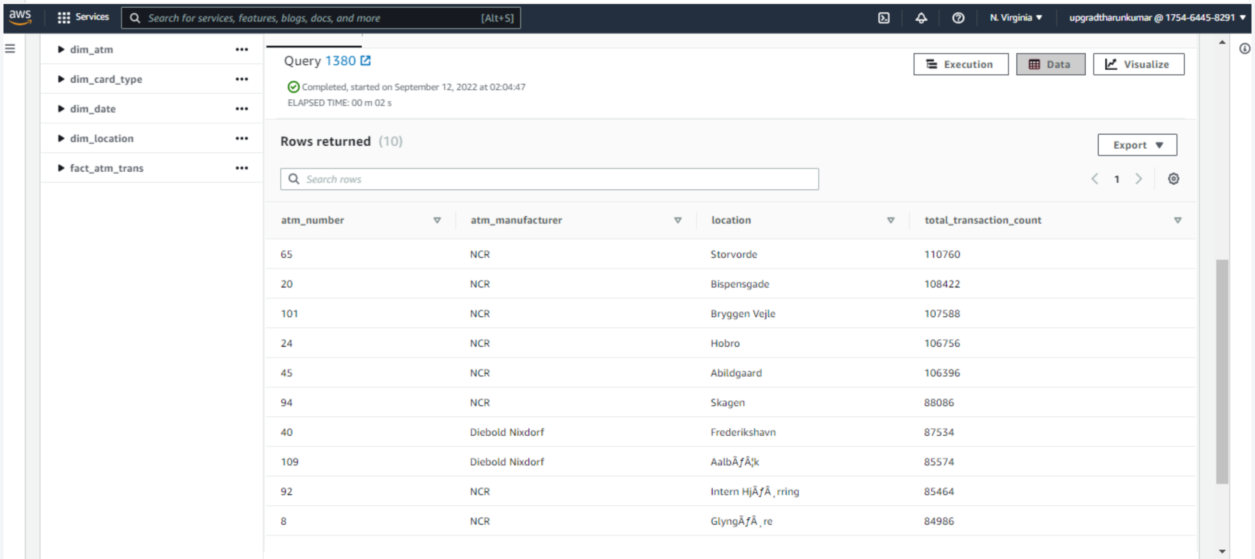
Rows returned (10)

weather_main	total_transaction_count	inactive_count	inactive_count_percent
Snow	46810	9626	20.5600
Fog	36348	7458	20.5100
Clouds	2363802	388054	16.4100
Rain	1090270	172034	15.7700
Clear	1087898	171062	15.7200
Mist	165602	25728	15.5300
Thunderstorm	5098	722	14.1600
Drizzle	125060	17340	13.8600
TORNADO	76	2	2.6300
Haze	6	0	0.0000

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



```sql
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;
```



Query 1380

Completed, started on September 12, 2022 at 02:04:47
ELAPSED TIME: 00 m 02 s

Rows returned (10)

atm_number	atm_manufacturer	location	total_transaction_count
65	NCR	Storvorde	110760
20	NCR	Bispensgade	108422
101	NCR	Bryggen Vejle	107588
24	NCR	Hobro	106756
45	NCR	Abildgaard	106396
94	NCR	Skagen	88086
40	Diebold Nixdorf	Frederikshavn	87534
109	Diebold Nixdorf	AalbÃƒÂ¦k	85574
92	NCR	Intern HjÃƒÂ¸rring	85464
8	NCR	GlyngÃƒÂ¸re	84986

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,

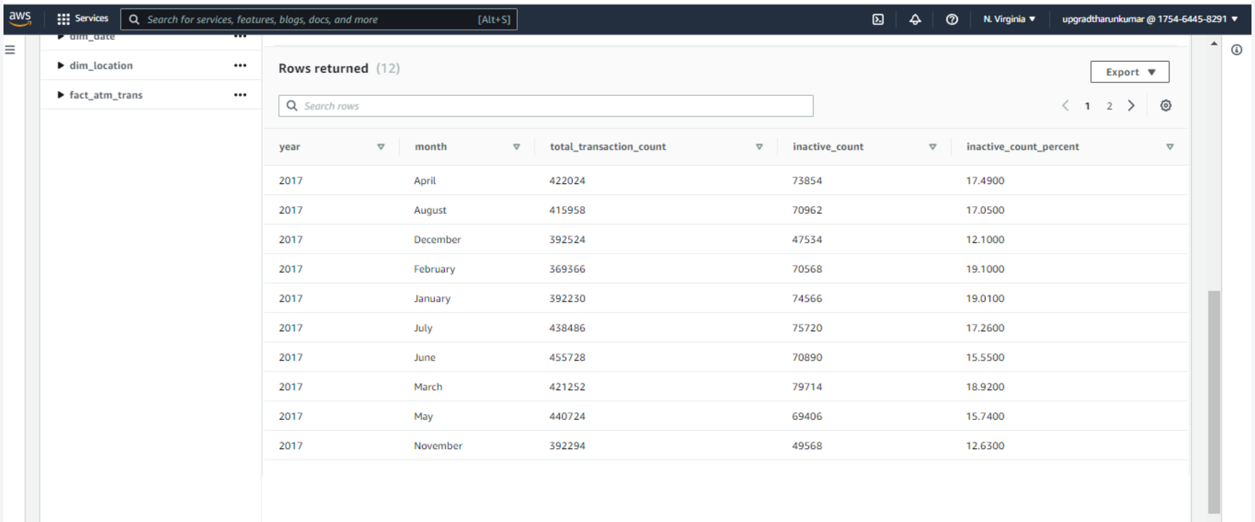
case when coalesce(inactive_count, 0) = 0 then 0.0000

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
```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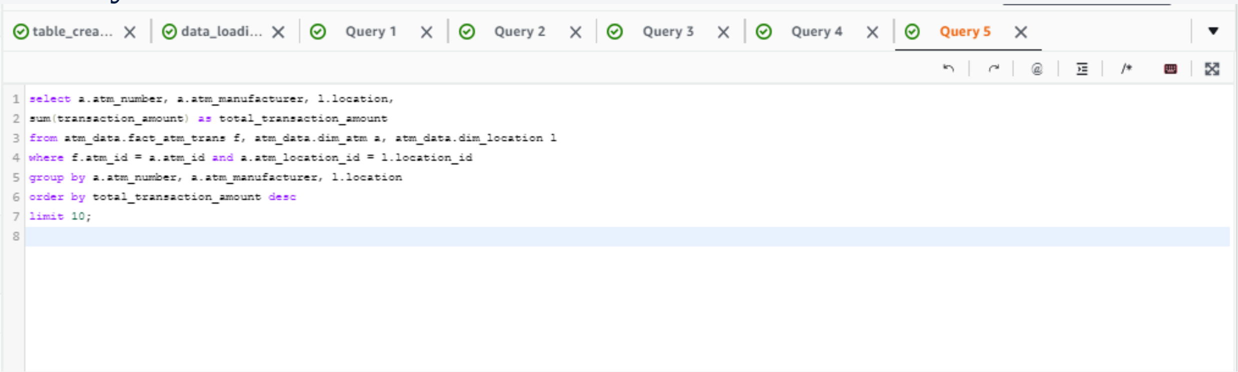
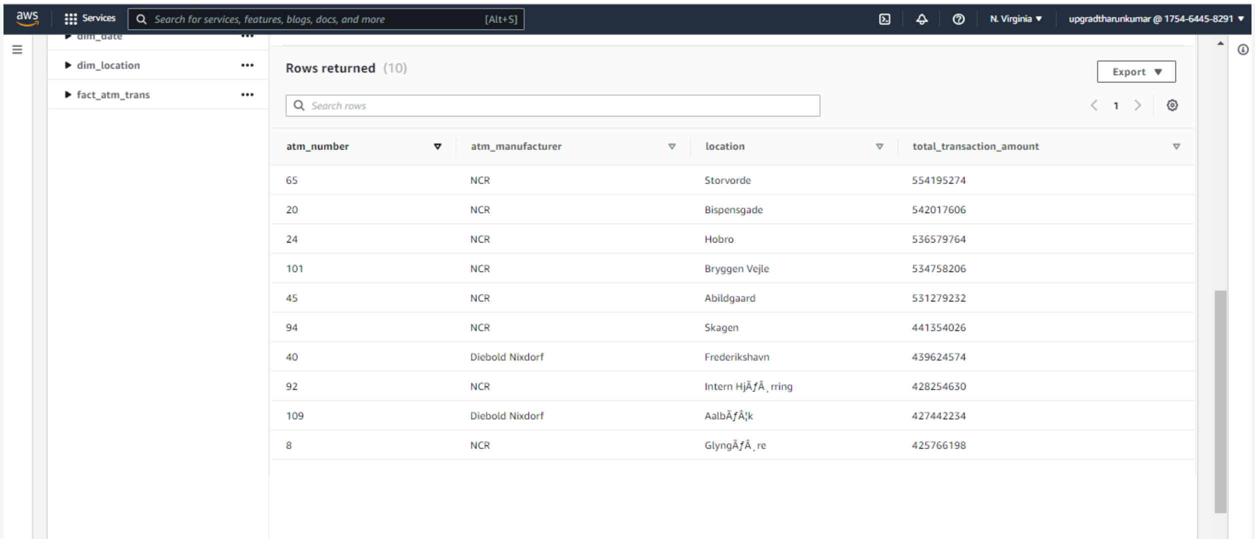
Rows returned (12)

year	month	total_transaction_count	inactive_count	inactive_count_percent
2017	April	422024	73854	17.4900
2017	August	415958	70962	17.0500
2017	December	392524	47534	12.1000
2017	February	369366	70568	19.1000
2017	January	392230	74566	19.0100
2017	July	438486	75720	17.2600
2017	June	455728	70890	15.5500
2017	March	421252	79714	18.9200
2017	May	440724	69406	15.7400
2017	November	392294	49568	12.6300

5. Top 10 ATMs with the highest total amount withdrawn 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;
```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dim_date
dim_location
fact_atm_trans
Export
Search rows
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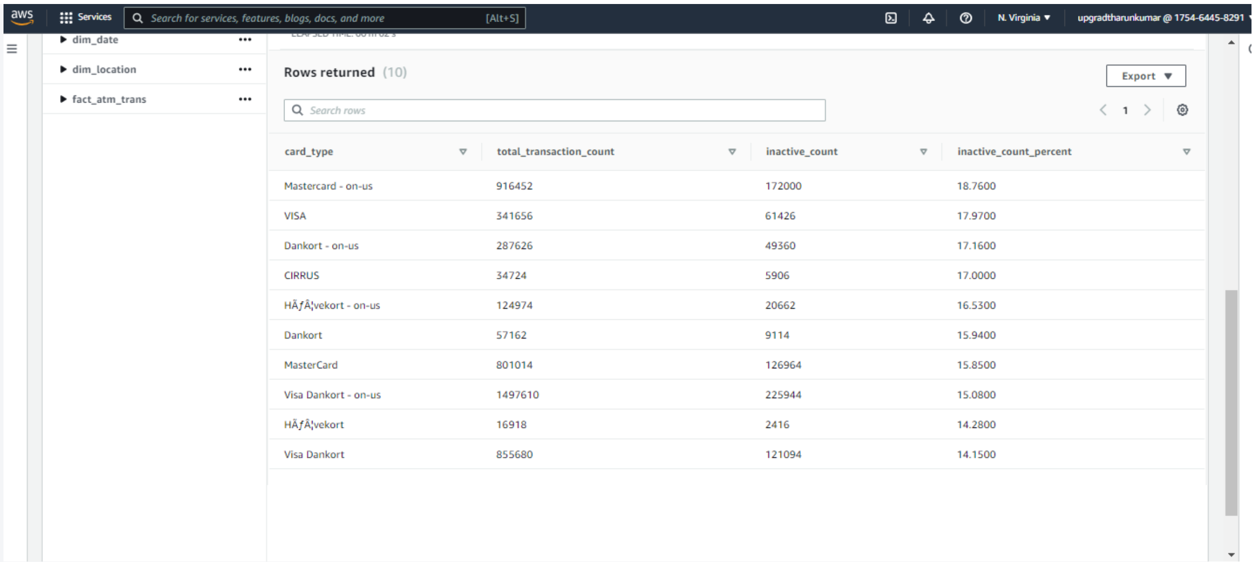
Rows returned (10)

atm_number	atm_manufacturer	location	total_transaction_amount
65	NCR	Storvorde	554195274
20	NCR	Bispensgade	542017606
24	NCR	Hobro	536579764
101	NCR	Bryggen Vejle	534758206
45	NCR	Abildgaard	531279232
94	NCR	Skagen	441354026
40	Diebold Nixdorf	Frederikshavn	439624574
92	NCR	Intern HjÃƒÂ¸rring	428254630
109	Diebold Nixdorf	AalbÃƒÂ¦k	427442234
8	NCR	GlyngÃƒÂ¸re	425766198

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;
```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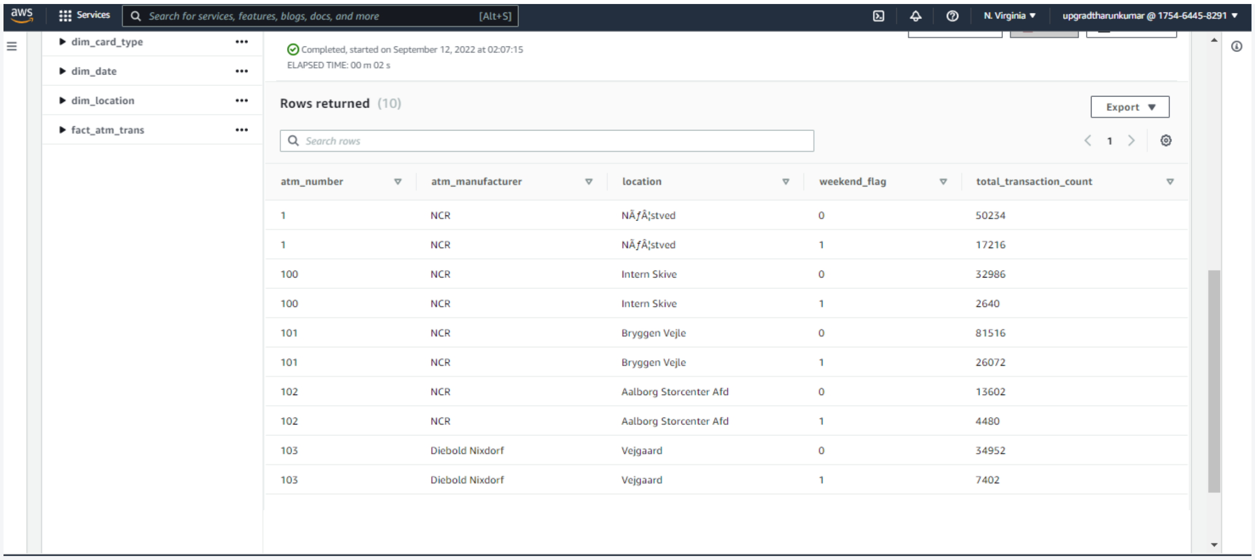
dim_date
dim_location
fact_atm_trans
Export
Search rows
1

Rows returned (10)

card_type	total_transaction_count	inactive_count	inactive_count_percent
Mastercard - on-us	916452	172000	18.7600
VISA	341656	61426	17.9700
Dankort - on-us	287626	49360	17.1600
CIRRUS	34724	5906	17.0000
HÃƒÂ¦vekort - on-us	124974	20662	16.5300
Dankort	57162	9114	15.9400
MasterCard	801014	126964	15.8500
Visa Dankort - on-us	1497610	225944	15.0800
HÃƒÂ¦vekort	16918	2416	14.2800
Visa Dankort	855680	121094	14.1500

7. Top 10 records with the number of transactions ordered by the ATM_number, ATM_manufacturer, location, weekend_flag and then total_transaction_count, on weekdays and on weekends throughout the year

```
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;
```



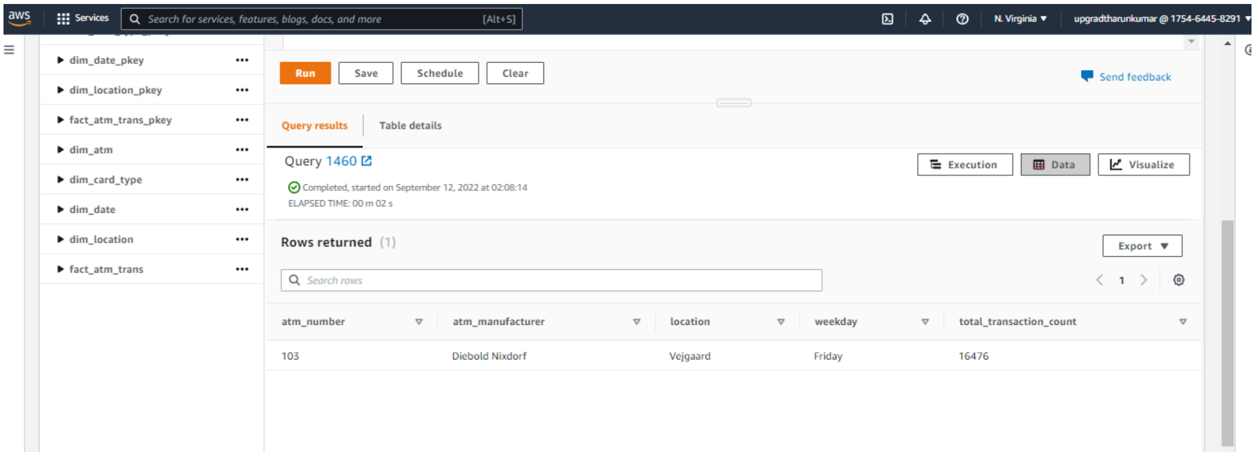
Completed, started on September 12, 2022 at 02:07:15
ELAPSED TIME: 00 m 02 s

Rows returned (10)

atm_number	atm_manufacturer	location	weekend_flag	total_transaction_count
1	NCR	NÃƒÂ¦stved	0	50234
1	NCR	NÃƒÂ¦stved	1	17216
100	NCR	Intern Skive	0	32986
100	NCR	Intern Skive	1	2640
101	NCR	Bryggen Vejle	0	81516
101	NCR	Bryggen Vejle	1	26072
102	NCR	Aalborg Storcenter Afd	0	13602
102	NCR	Aalborg Storcenter Afd	1	4480
103	Diebold Nixdorf	Vejgaard	0	34952
103	Diebold Nixdorf	Vejgaard	1	7402

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;
```



Query 1460

Completed, started on September 12, 2022 at 02:08:14
ELAPSED TIME: 00 m 02 s

Rows returned (1)

atm_number	atm_manufacturer	location	weekday	total_transaction_count
103	Diebold Nixdorf	Vejgaard	Friday	16476