Solving analytical queries on Redshift Cluster

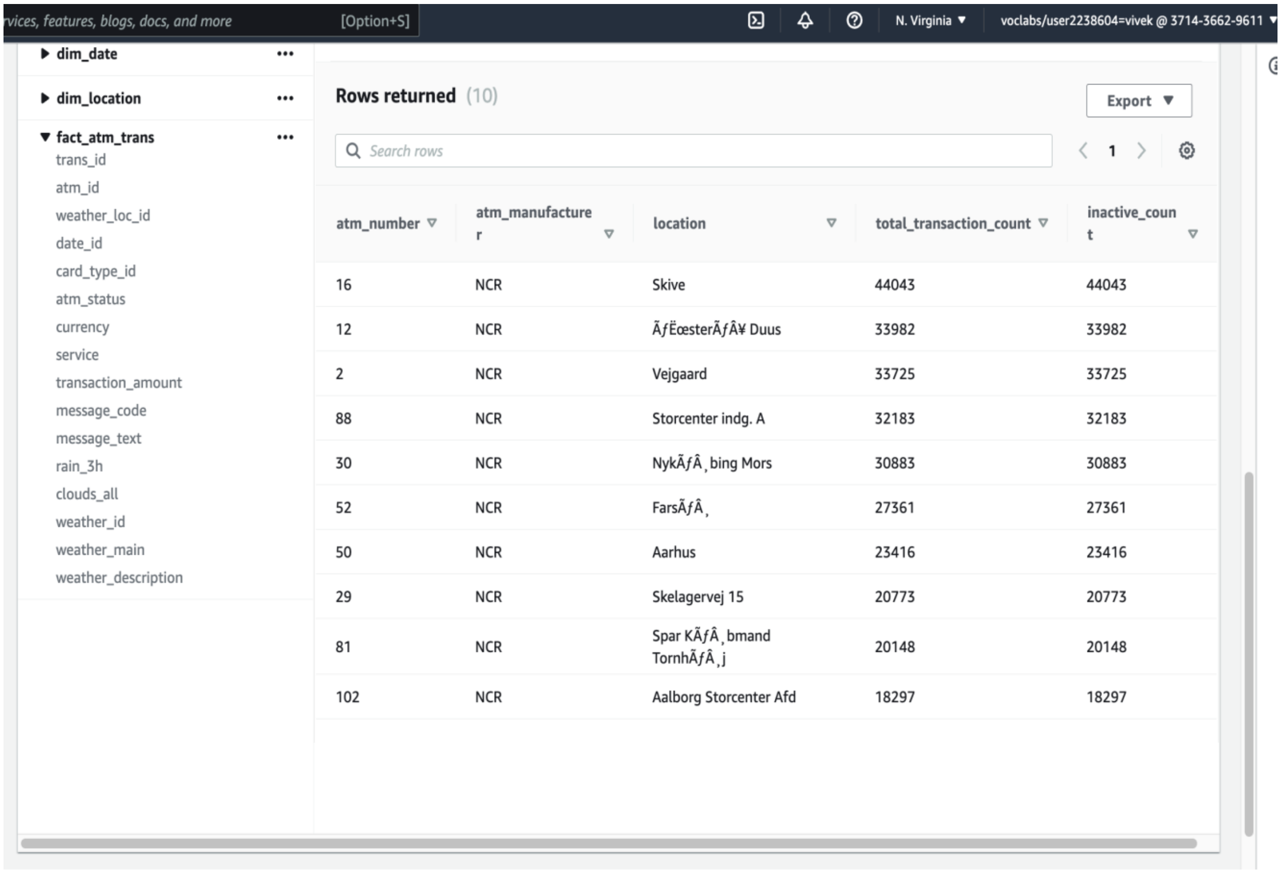
Here, you have to write the query used for solving the question and the screenshots of the table which is outputted after the query is run on the AWS Redshift Query editor UI.

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

<Query>

```
SELECT da.atm_number,
       da.atm_manufacturer,
       dl.location,
       count(ft.trans_id) as trans_count,
       sum(case when lower(ft.atm_status) = 'inactive' then 1 else 0 end) as inactive_count
FROM dmart1.fact_atm_trans ft
JOIN dmart1.dim_atm da ON ft.atm_id = da.atm_id
JOIN dmart1.dim_location dl ON ft.weather_loc_id = dl.location_id
GROUP BY da.atm_number,
         da.atm_manufacturer,
         dl.location
ORDER BY inactive_count DESC LIMIT 10;
```

<Screenshot of the resultant table>



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N. Virginia ▼
voclabs/user2238604=vivek @ 3714-3662-9611 ▼
Export ▼
Search rows
1

- ▶ dim_date
- ▶ dim_location
- ▼ fact_atm_trans
  - trans_id
  - atm_id
  - weather_loc_id
  - date_id
  - card_type_id
  - atm_status
  - currency
  - service
  - transaction_amount
  - message_code
  - message_text
  - rain_3h
  - clouds_all
  - weather_id
  - weather_main
  - weather_description

Rows returned (10)

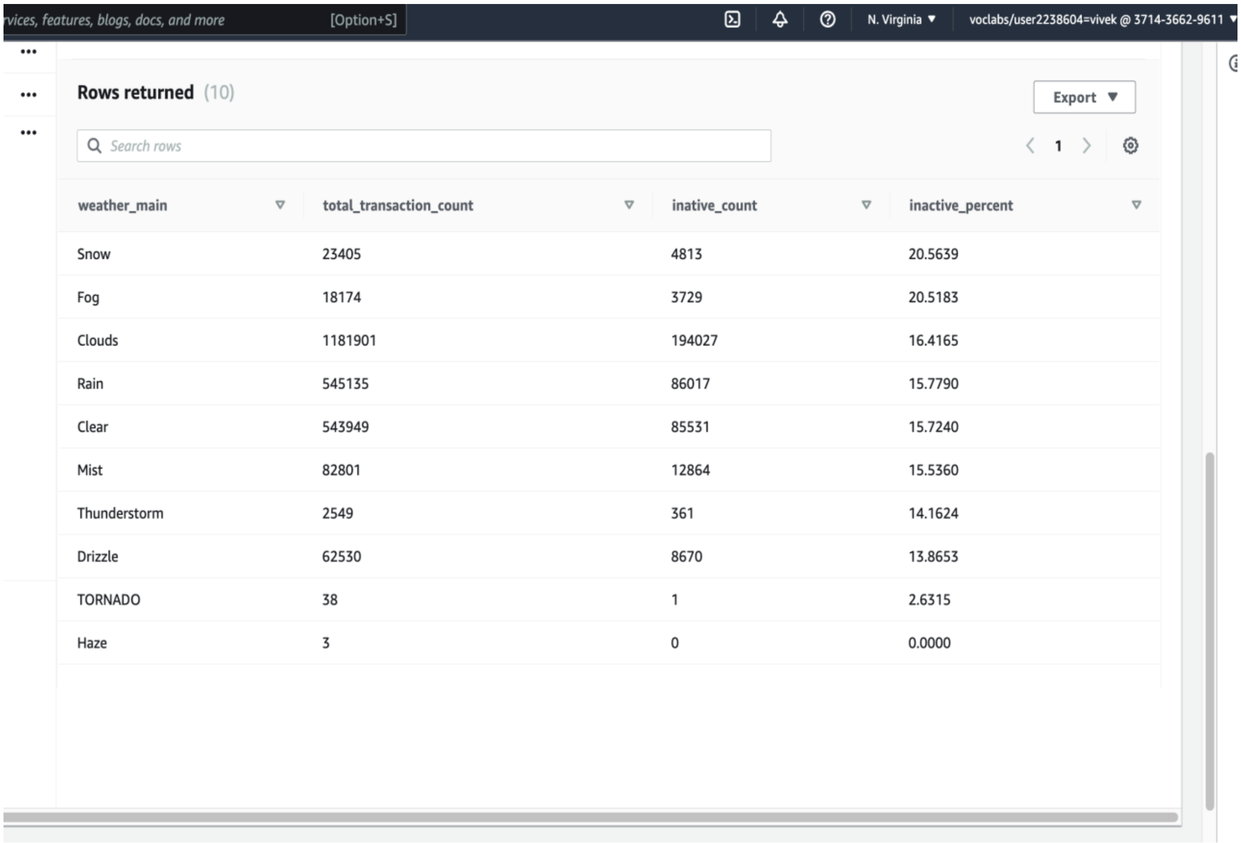
atm_number	atm_manufacturer	location	total_transaction_count	inactive_count
16	NCR	Skive	44043	44043
12	NCR	ÃƒËœsterÃƒÂ¥ Duus	33982	33982
2	NCR	Vejgaard	33725	33725
88	NCR	Storcenter indg. A	32183	32183
30	NCR	NykÃƒÂ¸bing Mors	30883	30883
52	NCR	FarsÃƒÂ¸	27361	27361
50	NCR	Aarhus	23416	23416
29	NCR	Skelagervej 15	20773	20773
81	NCR	Spar KÃƒÂ¸bmand TornhÃƒÂ¸j	20148	20148
102	NCR	Aalborg Storcenter Afd	18297	18297

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

<Query>

```
SELECT f.weather_main AS weather_main,
                COUNT(f.trans_id) AS total_transaction_count,
                sum(case when atm_status='Inactive' then 1 else 0 end) AS inative_count ,
                trunc(((cast(inative_count AS numeric(10,4))/total_transaction_count))*100,4) AS
Inactive_percent
FROM dmart1.fact_atm_trans f
WHERE f.weather_main!=''
GROUP BY f.weather_main
ORDER BY Inactive_percent DESC;
```

<Screenshot of the resultant table>



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voclabs/user2238604=vivek @ 3714-3662-9611 ▼
Export ▼
Search rows
1

Rows returned (10)

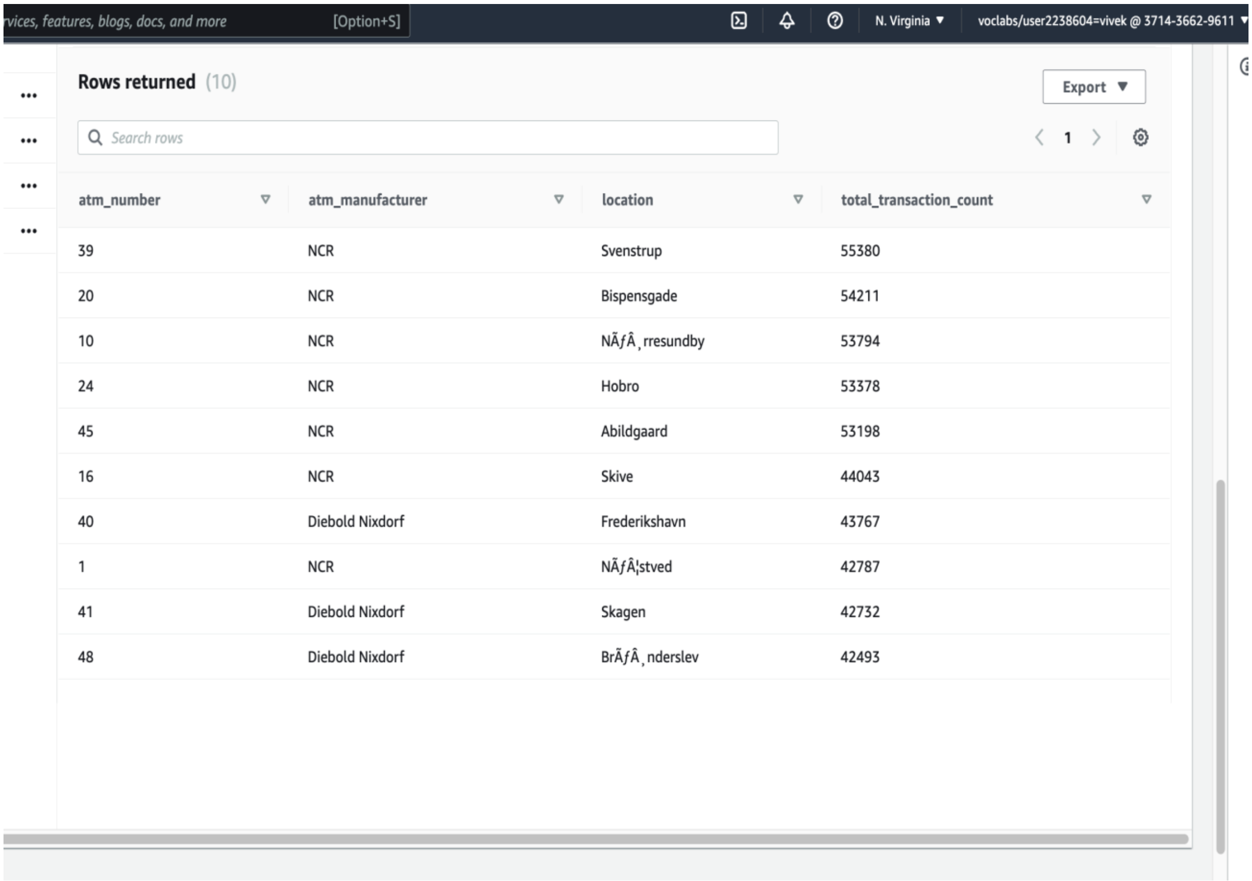
weather_main	total_transaction_count	inative_count	inactive_percent
Snow	23405	4813	20.5639
Fog	18174	3729	20.5183
Clouds	1181901	194027	16.4165
Rain	545135	86017	15.7790
Clear	543949	85531	15.7240
Mist	82801	12864	15.5360
Thunderstorm	2549	361	14.1624
Drizzle	62530	8670	13.8653
TORNADO	38	1	2.6315
Haze	3	0	0.0000

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

<Query>

```
SELECT da.atm_number,
       da.atm_manufacturer,
       dl.location,
       count(ft.trans_id) as total_transaction_count
FROM dmart1.fact_atm_trans ft
JOIN dmart1.dim_atm da ON ft.atm_id = da.atm_id
JOIN dmart1.dim_location dl ON ft.weather_loc_id = dl.location_id
GROUP BY da.atm_number,atm_manufacturer,dl.location
ORDER BY total_transaction_count DESC limit 10;
```

<Screenshot of the resultant table>


rvices, features, blogs, docs, and more
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N. Virginia ▼
voclabs/user2238604=vivek @ 3714-3662-9611 ▼
Rows returned (10)
Export ▼
Search rows
1

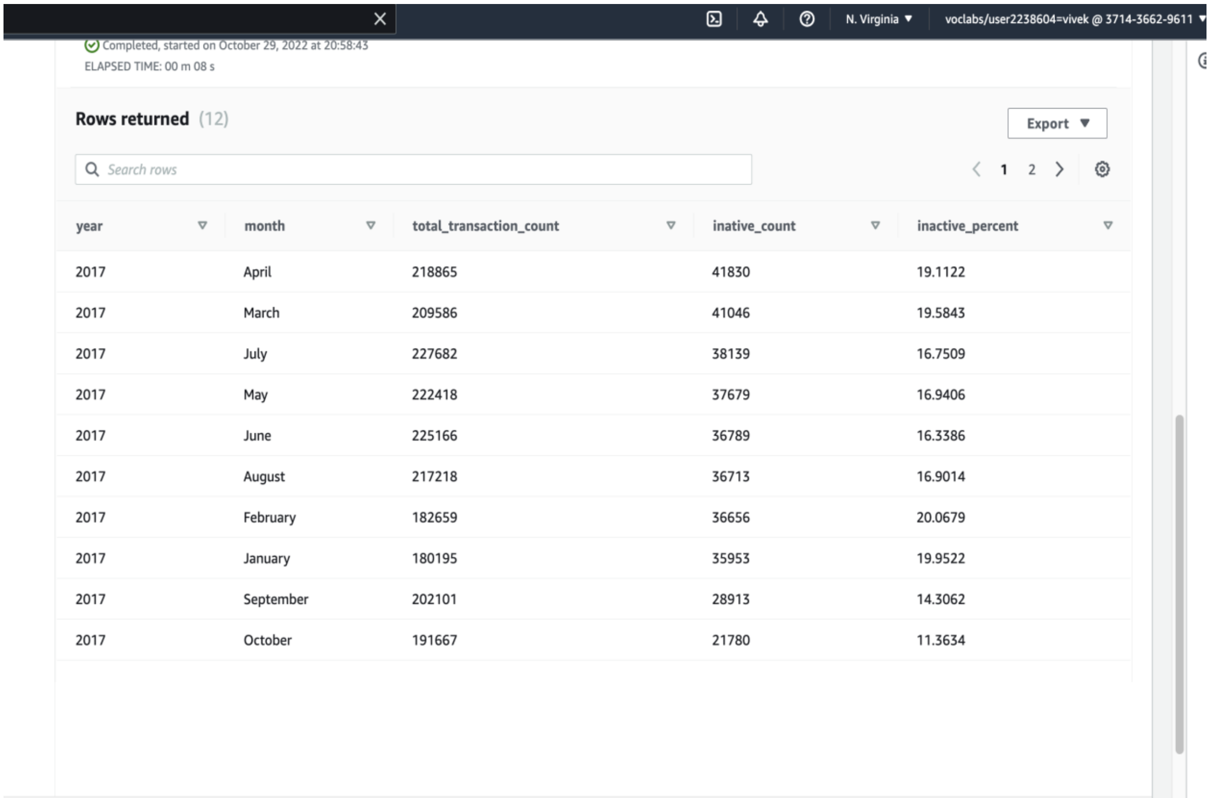
atm_number	atm_manufacturer	location	total_transaction_count
39	NCR	Svenstrup	55380
20	NCR	Bispensgade	54211
10	NCR	NÃƒÂ¸rresundby	53794
24	NCR	Hobro	53378
45	NCR	Abildgaard	53198
16	NCR	Skive	44043
40	Diebold Nixdorf	Frederikshavn	43767
1	NCR	NÃƒÂ¦stved	42787
41	Diebold Nixdorf	Skagen	42732
48	Diebold Nixdorf	BrÃƒÂ¸nderslev	42493

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

<Query>

```
SELECT dd.year,
       dd.month,
       COUNT(f.trans_id) AS total_transaction_count,
       sum(case when f.atm_status='Inactive' then 1 else 0 end) AS inative_count ,
       trunc(((cast(inative_count AS numeric(10,4))/total_transaction_count))*100,4) AS
Inactive_percent
FROM dmart1.fact_atm_trans f,dmart1.dim_date dd
WHERE f.date_id = dd.date_id
GROUP BY dd.year,
         dd.month
ORDER BY inative_count DESC;
```

<Screenshot of the resultant table>

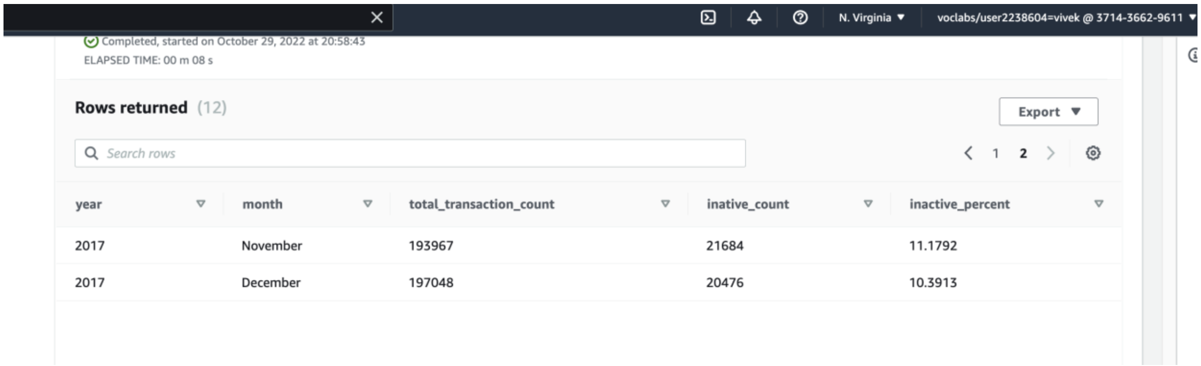


Completed, started on October 29, 2022 at 20:58:43

ELAPSED TIME: 00 m 08 s

Rows returned (12)

year	month	total_transaction_count	inative_count	inactive_percent
2017	April	218865	41830	19.1122
2017	March	209586	41046	19.5843
2017	July	227682	38139	16.7509
2017	May	222418	37679	16.9406
2017	June	225166	36789	16.3386
2017	August	217218	36713	16.9014
2017	February	182659	36656	20.0679
2017	January	180195	35953	19.9522
2017	September	202101	28913	14.3062
2017	October	191667	21780	11.3634



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Rows returned (12)

year	month	total_transaction_count	inative_count	inactive_percent
2017	November	193967	21684	11.1792
2017	December	197048	20476	10.3913

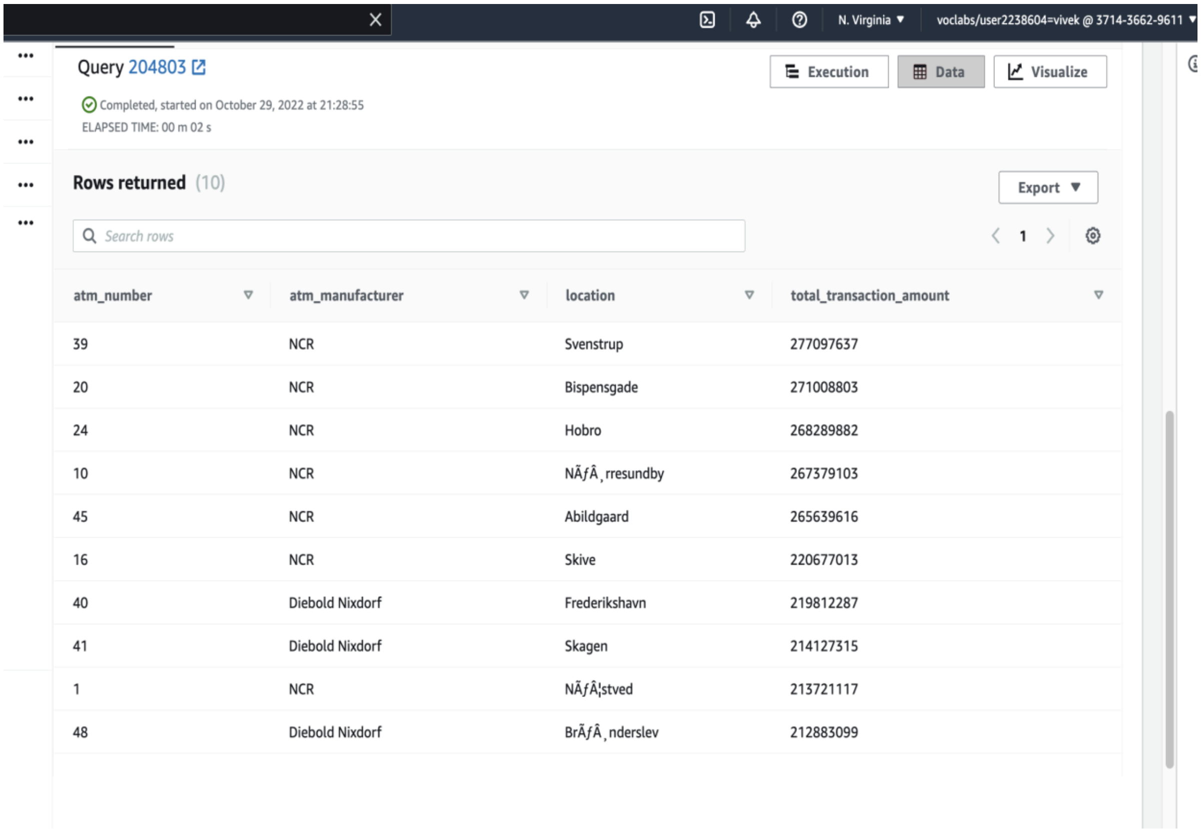
5. Top 10 ATMs with the highest total withdrawn amount throughout the year

<Query>

```
SELECT da.atm_number,
       da.atm_manufacturer,
       dl.location,
       sum(f.transaction_amount) AS total_transaction_amount

FROM dmart1.fact_atm_trans f,dmart1.dim_location dl, dmart1.dim_atm da
WHERE f.weather_loc_id = dl.location_id AND f.atm_id = da.atm_id
GROUP BY da.atm_number,da.atm_manufacturer,dl.location
ORDER BY total_transaction_amount DESC LIMIT 10;
```

<Screenshot of the resultant table>



Query 204803

Completed, started on October 29, 2022 at 21:28:55

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Rows returned (10)

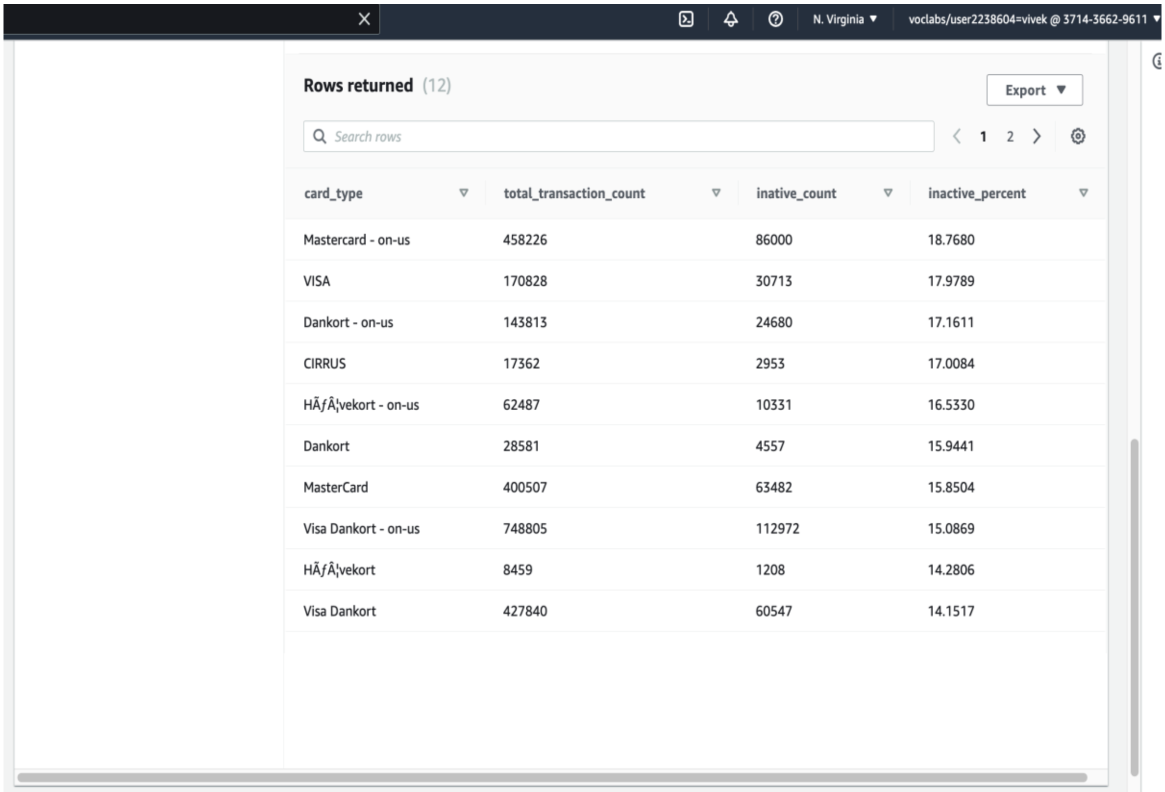
atm_number	atm_manufacturer	location	total_transaction_amount
39	NCR	Svenstrup	277097637
20	NCR	Bispensgade	271008803
24	NCR	Hobro	268289882
10	NCR	NÃƒÂ¸rresundby	267379103
45	NCR	Abildgaard	265639616
16	NCR	Skive	220677013
40	Diebold Nixdorf	Frederikshavn	219812287
41	Diebold Nixdorf	Skagen	214127315
1	NCR	NÃƒÂ¦stved	213721117
48	Diebold Nixdorf	BrÃƒÂ¸nderslev	212883099

6. Number of failed ATM transactions across various card types

<Query>

```
SELECT ct.card_type ,
  COUNT(f.trans_id) AS total_transaction_count,
      sum(case when atm_status='Inactive' then 1 else 0 end) AS inative_count ,
      trunc(((cast(inative_count AS numeric(10,4))/total_transaction_count))*100,4) AS
Inactive_percent
FROM dmart1.fact_atm_trans f,dmart1.dim_card_type ct
WHERE  ct.card_type_id = f.card_type_id
GROUP BY  ct.card_type
ORDER BY Inactive_percent DESC;
```

<Screenshot of the resultant table>



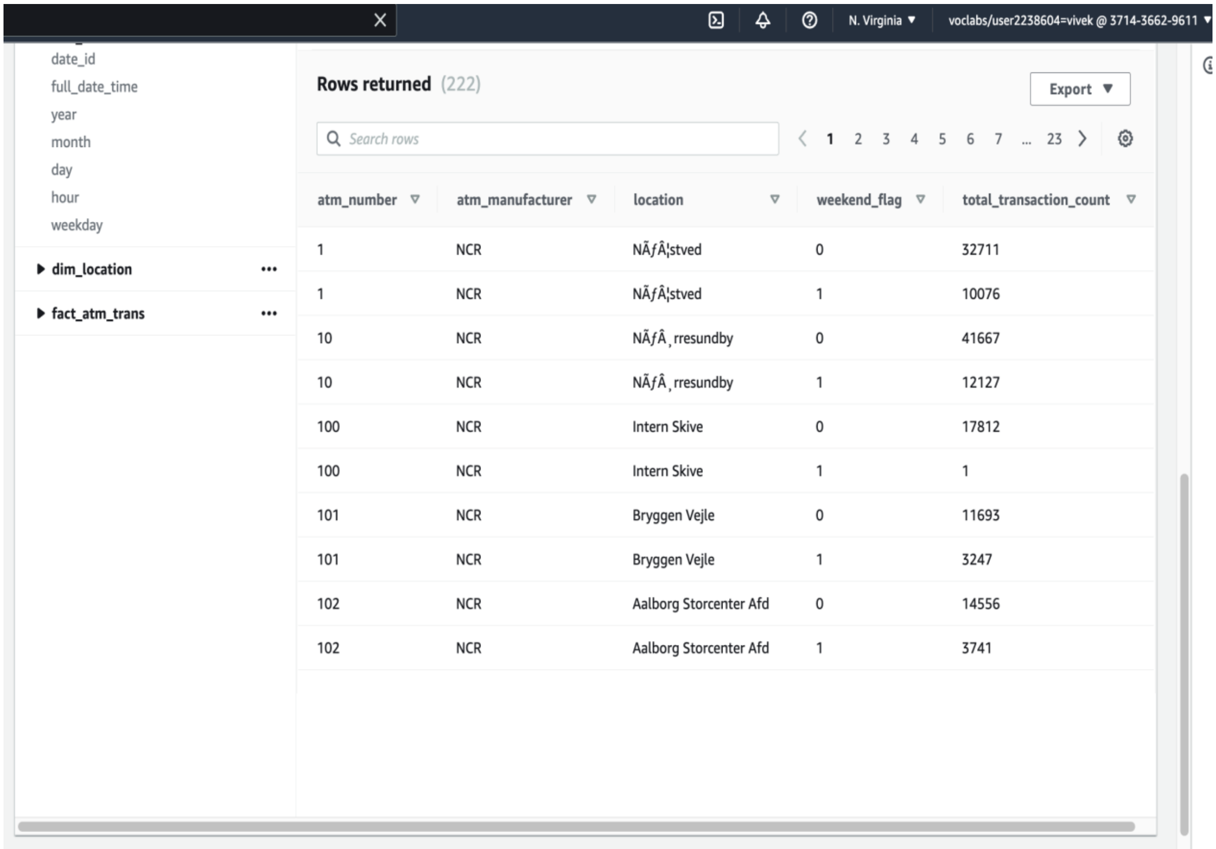
Rows returned (12)

card_type	total_transaction_count	inative_count	inactive_percent
Mastercard - on-us	458226	86000	18.7680
VISA	170828	30713	17.9789
Dankort - on-us	143813	24680	17.1611
CIRRUS	17362	2953	17.0084
HÃƒÂ¦vekort - on-us	62487	10331	16.5330
Dankort	28581	4557	15.9441
MasterCard	400507	63482	15.8504
Visa Dankort - on-us	748805	112972	15.0869
HÃƒÂ¦vekort	8459	1208	14.2806
Visa Dankort	427840	60547	14.1517

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**

```
<Query> SELECT da.atm_number,
       da.atm_manufacturer,
       dl.location,
       case when dd.weekday IN ('Saturday','Sunday') then 1 else 0 end AS weekend_flag,
       COUNT(f.trans_id) AS total_transaction_count
FROM dmart1.fact_atm_trans f,dmart1.dim_atm da,dmart1.dim_date dd,dmart1.dim_location dl
WHERE f.atm_id = da.atm_id AND f.date_id = dd.date_id AND f.weather_loc_id = dl.location_id
GROUP BY da.atm_number,da.atm_manufacturer,dl.location, case when dd.weekday IN
('Saturday','Sunday') then 1 else 0 end
ORDER BY da.atm_number,da.atm_manufacturer,dl.location, case when dd.weekday IN
('Saturday','Sunday') then 1 else 0 end,total_transaction_count DESC;
```

<Screenshot of the resultant table>



Rows returned (222)

atm_number	atm_manufacturer	location	weekend_flag	total_transaction_count
1	NCR	NÃƒÂ¦stved	0	32711
1	NCR	NÃƒÂ¦stved	1	10076
10	NCR	NÃƒÂ¸rresundby	0	41667
10	NCR	NÃƒÂ¸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"

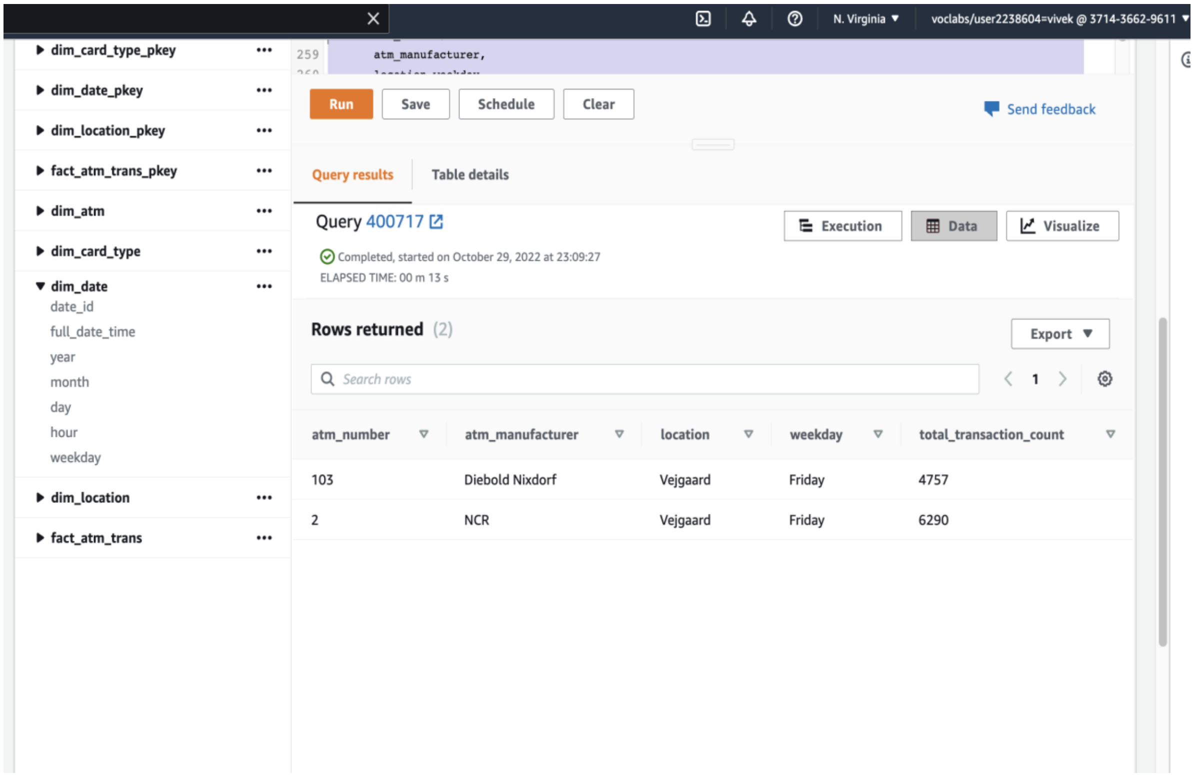
<Query>

```
SELECT atm_number,
       atm_manufacturer,
       location,weekday,
       total_Transaction_count FROM
(SELECT at.atm_number,dd.weekday,at.atm_manufacturer,l.location,count(f.trans_id) AS
total_Transaction_count,row_number() over(partition by at.atm_number ORDER BY
COUNT(f.trans_id )DESC )AS rn FROM dmart1.fact_atm_trans f
left JOIN dmart1.dim_atm at on at.atm_id=f.atm_id
left JOIN dmart1.dim_location l ON f.weather_loc_id=l.location_id
left JOIN dmart1.dim_date dd ON dd.date_id=f.date_id
WHERE l.location='Vejgaard'
GROUP BY at.atm_number,dd.weekday,at.atm_manufacturer,l.location

)aa

WHERE aa.rn=1
ORDER BY total_transaction_count ASC;
```

<Screenshot of the resultant table>



```
atm_manufacturer,
```

Query 400717

Completed, started on October 29, 2022 at 23:09:27

ELAPSED TIME: 00 m 13 s

Rows returned (2)

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