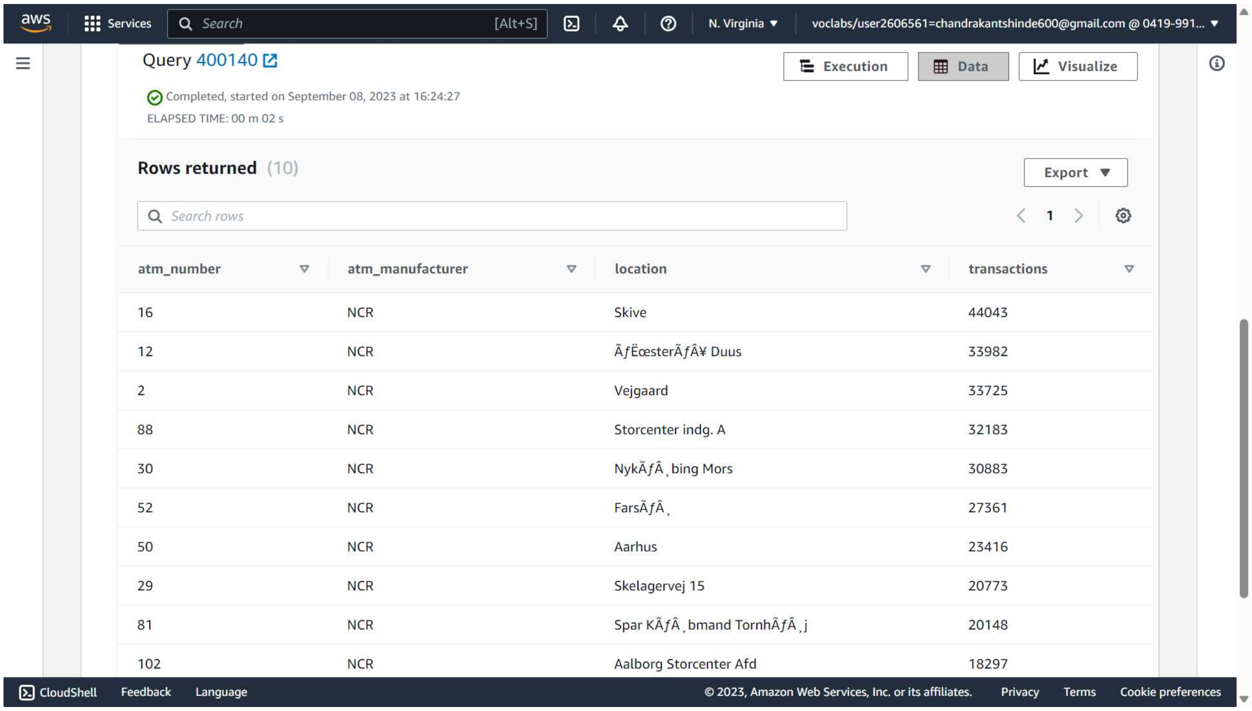
Solving analytical queries on Redshift Cluster

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,
        COUNT(trans_id) AS transactions
FROM
        atm_data.fact_atm_trans T
        INNER JOIN atm_data.dim_atm A
                ON T.atm_id = a.atm_id
        INNER JOIN atm_data.dim_location L
                ON A.atm_location_id = L.location_id
WHERE
        atm_status = ‘Inactive’
GROUP BY
        atm_number,
        atm_manufacturer,
        location
ORDER BY
        transactions DESC
LIMIT 10 ;
```



Query 400140

Completed, started on September 08, 2023 at 16:24:27

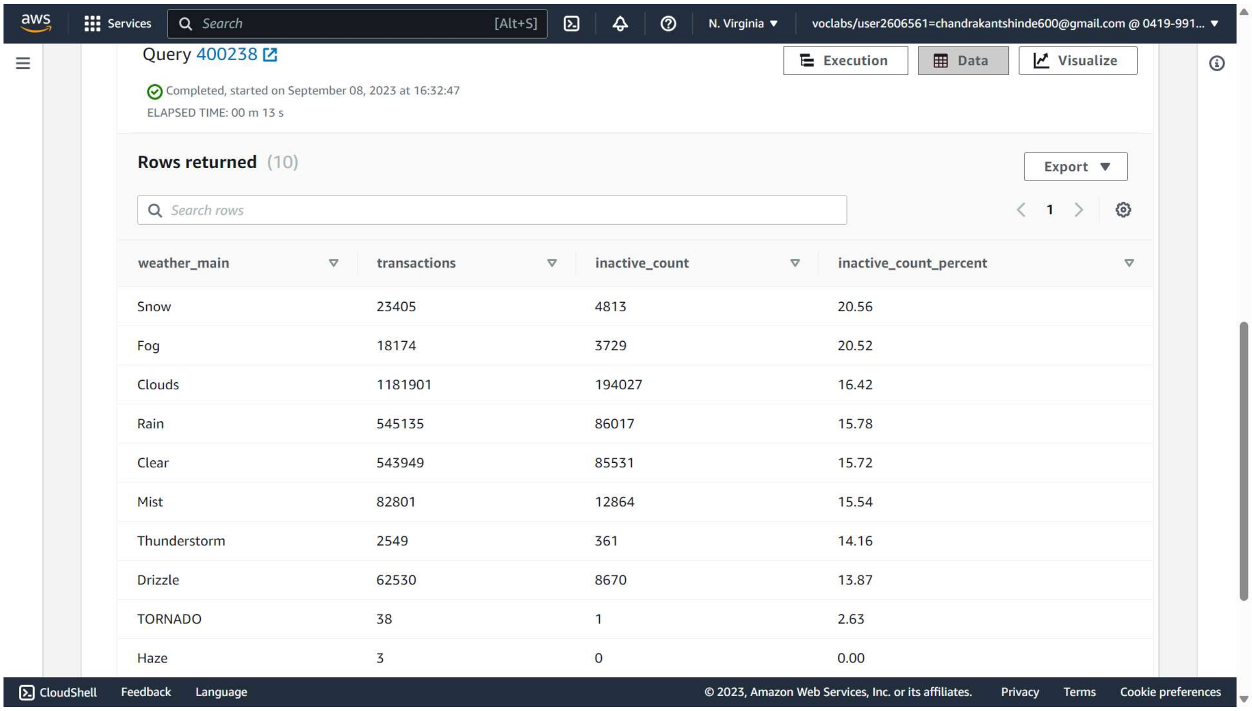
ELAPSED TIME: 00 m 02 s

Rows returned (10)

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

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

```
WITH weather_atm_failure AS
(
SELECT
        weather_main,
        COUNT(trans_id) AS transactions,
        SUM(CASE WHEN atm_status='Inactive' THEN 1 ELSE 0 END) AS inactive_count
FROM
        Atm_data.fact_atm_trans
WHERE
        weather_main != ''
GROUP BY
        weather_main
)
SELECT
        *,
        ROUND(CAST(inactive_count as numeric(10,2))/transactions*100, 2) AS
        inactive_count_percent
FROM
        weather_atm_failure
ORDER BY
        inactive_count_percent DESC;
```



Query 400238

Completed, started on September 08, 2023 at 16:32:47

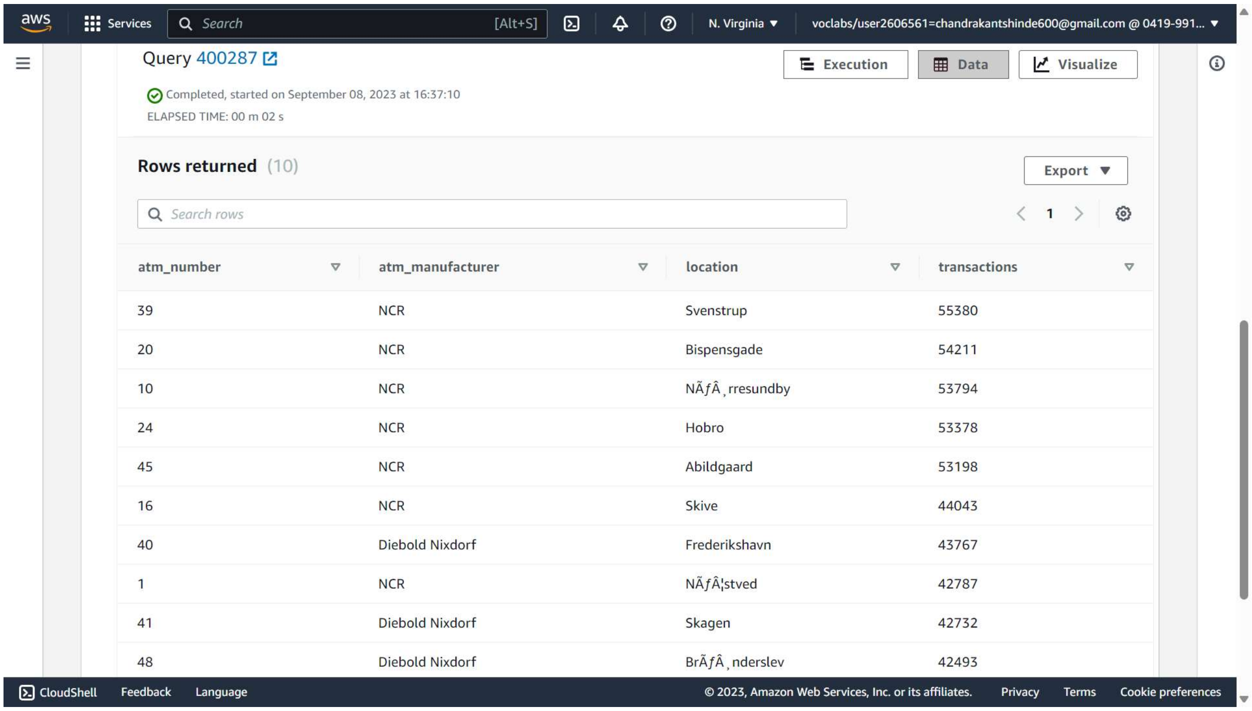
ELAPSED TIME: 00 m 13 s

Rows returned (10)

weather_main	transactions	inactive_count	inactive_count_percent
Snow	23405	4813	20.56
Fog	18174	3729	20.52
Clouds	1181901	194027	16.42
Rain	545135	86017	15.78
Clear	543949	85531	15.72
Mist	82801	12864	15.54
Thunderstorm	2549	361	14.16
Drizzle	62530	8670	13.87
TORNADO	38	1	2.63
Haze	3	0	0.00

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

```
SELECT
        atm_number,
        atm_manufacturer,
        location,
        COUNT(trans_id) AS transactions
FROM
        atm_data.fact_atm_trans T
        INNER JOIN atm_data.dim_atm A
                ON T.atm_id = a.atm_id
        INNER JOIN atm_data.dim_location L
                ON A.atm_location_id = L.location_id
GROUP BY
        atm_number,
        atm_manufacturer,
        location
ORDER BY
        transactions DESC
LIMIT 10 ;
```



Query 400287

Completed, started on September 08, 2023 at 16:37:10

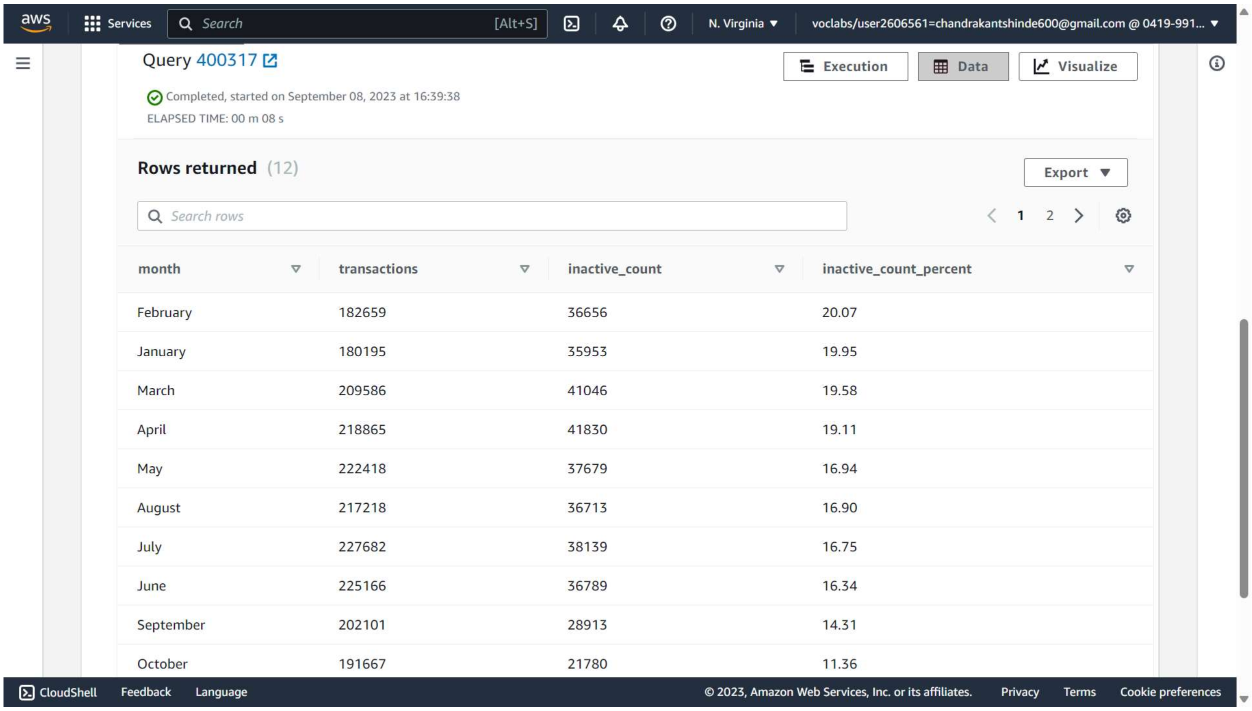
ELAPSED TIME: 00 m 02 s

Rows returned (10)

atm_number	atm_manufacturer	location	transactions
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

```
WITH monthwise_atm_failure AS (
SELECT
        month,
        COUNT(F.trans_id) AS transactions,
        SUM(CASE WHEN F.atm_status='Inactive' THEN 1 ELSE 0 END) AS inactive_count
FROM
        atm_data.fact_atm_trans F
        INNER JOIN atm_data.dim_date D
                ON F.date_id=D.date_id
GROUP BY
        D.month
)
SELECT *,
        ROUND(CAST(inactive_count as numeric(10,2))/transactions*100, 2) AS
        inactive_count_percent
FROM
        monthwise_atm_failure
ORDER BY
        inactive_count_percent DESC;
```



Query 400317

Completed, started on September 08, 2023 at 16:39:38

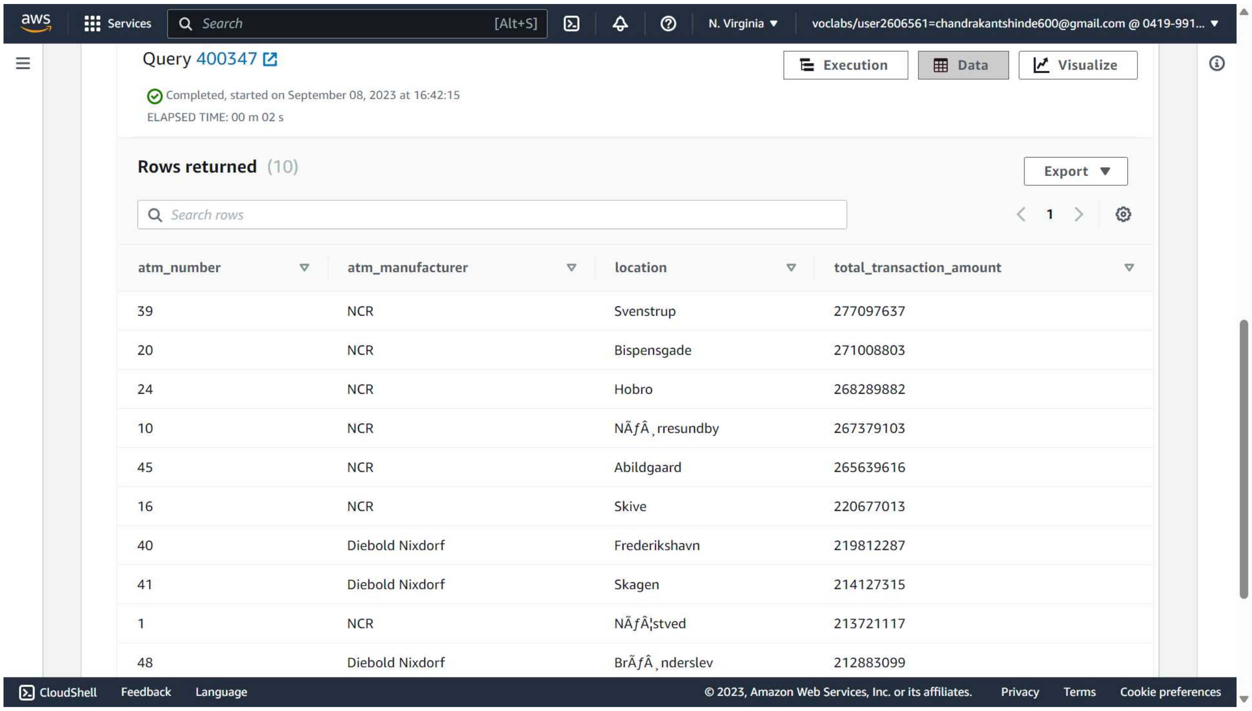
ELAPSED TIME: 00 m 08 s

Rows returned (12)

month	transactions	inactive_count	inactive_count_percent
February	182659	36656	20.07
January	180195	35953	19.95
March	209586	41046	19.58
April	218865	41830	19.11
May	222418	37679	16.94
August	217218	36713	16.90
July	227682	38139	16.75
June	225166	36789	16.34
September	202101	28913	14.31
October	191667	21780	11.36

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

```
SELECT
        atm_number,
        atm_manufacturer,
        location,
        SUM(transaction_amount) AS total_transaction_amount
FROM
        atm_data.fact_atm_trans T
        INNER JOIN atm_data.dim_atm A
                ON T.atm_id = A.atm_id
        INNER JOIN atm_data.dim_location L
                ON A.atm_location_id = L.location_id
GROUP BY
        atm_number,
        atm_manufacturer,
        location
ORDER BY
        total_transaction_amount DESC
LIMIT 10 ;
```



Query 400347

Completed, started on September 08, 2023 at 16:42:15

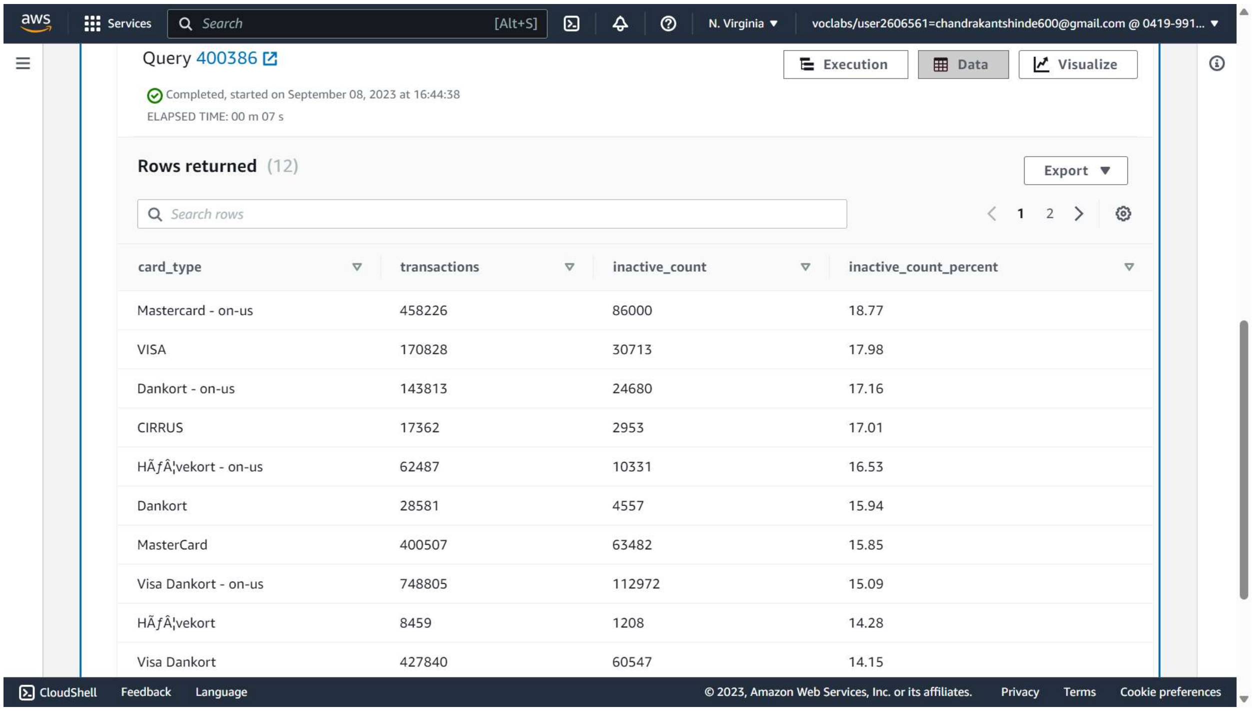
ELAPSED TIME: 00 m 02 s

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

```
WITH card_type_failure AS (
SELECT
        card_type,
        count(trans_id) AS transactions,
        SUM(CASE WHEN atm_status= 'Inactive' THEN 1 ELSE 0 END) AS inactive_count
FROM
        atm_data.fact_atm_trans F
        INNER JOIN atm_data.dim_card_type C
                ON F.card_type_id = C.card_type_id
GROUP BY
        card_type
)
SELECT
        *,
        ROUND(CAST(inactive_count as numeric(10,2))/transactions*100, 2) AS
        inactive_count_percent
FROM
        Card_type_failure
ORDER BY
        Inactive_count_percent DESC ;
```



Query 400386

Completed, started on September 08, 2023 at 16:44:38

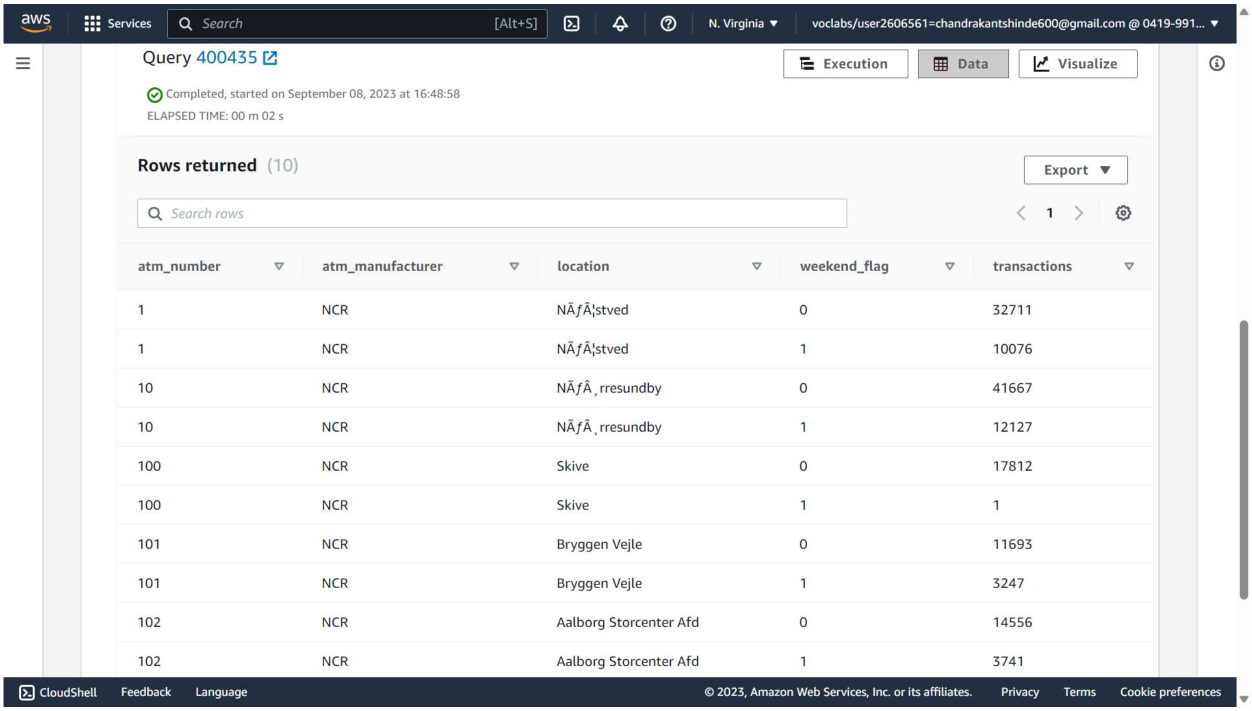
ELAPSED TIME: 00 m 07 s

Rows returned (12)

card_type	transactions	inactive_count	inactive_count_percent
Mastercard - on-us	458226	86000	18.77
VISA	170828	30713	17.98
Dankort - on-us	143813	24680	17.16
CIRRUS	17362	2953	17.01
HÃƒÂ¦vekort - on-us	62487	10331	16.53
Dankort	28581	4557	15.94
MasterCard	400507	63482	15.85
Visa Dankort - on-us	748805	112972	15.09
HÃƒÂ¦vekort	8459	1208	14.28
Visa Dankort	427840	60547	14.15

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
        atm_number,
        atm_manufacturer,
        location,
        CASE WHEN weekday IN ('Sunday','Saturday') then 1 ELSE 0 END AS weekend_flag,
        COUNT(trans_id) as transactions
FROM
        atm_data.fact_atm_trans T
        INNER JOIN atm_data.dim_atm A
                ON T.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 T.date_id = D.date_id
GROUP BY
        atm_number,
        atm_manufacturer,
        location,
        weekend_flag
ORDER BY
        atm_number,
        atm_manufacturer,
        location,
        weekend_flag,
        transactions
LIMIT 10 ;
```



Query 400435

Completed, started on September 08, 2023 at 16:48:58

ELAPSED TIME: 00 m 02 s

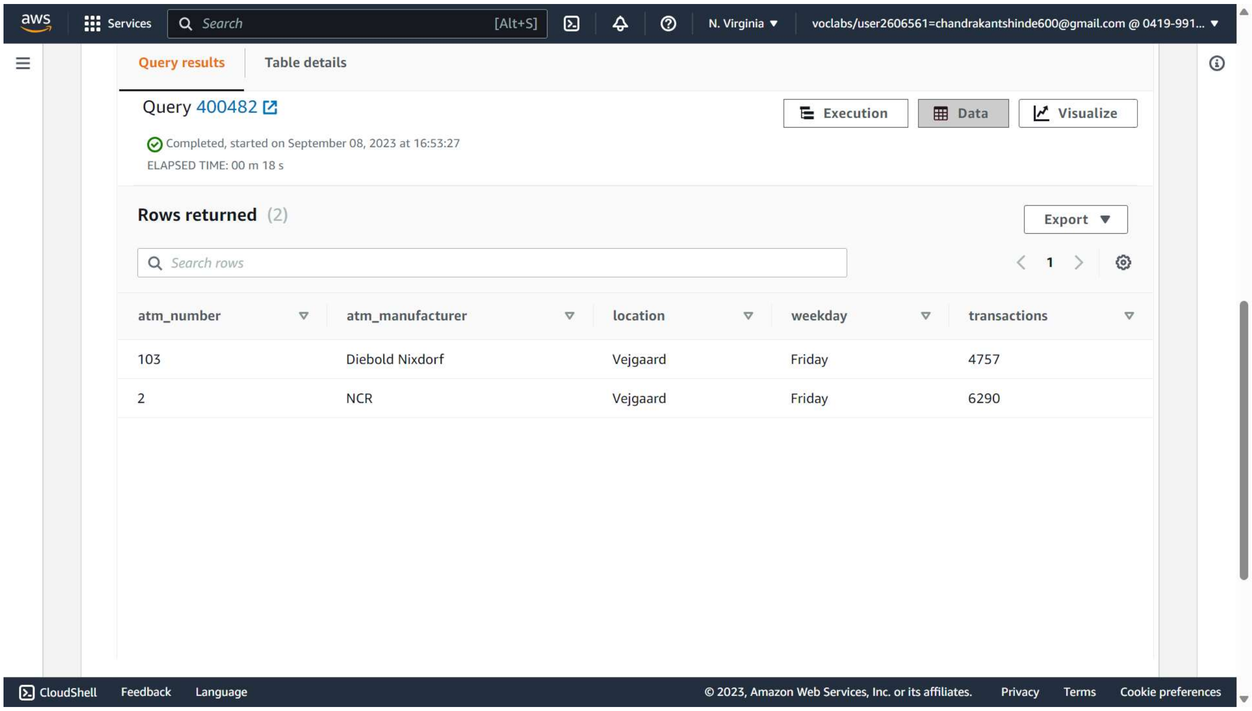
Rows returned (10)

atm_number	atm_manufacturer	location	weekend_flag	transactions
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	Skive	0	17812
100	NCR	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"

```
WITH atm_weekday_details AS (
SELECT
        atm_number,
        atm_manufacturer,
        location,
        weekday,
        COUNT(trans_id) AS transactions
FROM
        atm_data.fact_atm_trans T
        INNER JOIN atm_data.dim_atm A
                ON T.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 T.date_id = D.date_id
WHERE
        location = 'Vejgaard'
GROUP BY
        atm_number,
        atm_manufacturer,
        location,
        weekday
),
max_weekday AS (
SELECT
        weekday
FROM
        atm_weekday_details
WHERE
        transactions = (
        SELECT
                MAX(transactions)
        FROM
                atm_weekday_details
        )
LIMIT
        1
)
SELECT
        *
FROM
```

```
    atm_weekday_details
WHERE
    weekday = (
        SELECT
            weekday
        FROM
            max_weekday
    )
ORDER BY
    transactions;
```



Query 400482

Completed, started on September 08, 2023 at 16:53:27

ELAPSED TIME: 00 m 18 s

Rows returned (2)

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