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 dim.atm_id,dim.atm_number,count(dim.atm_id) as count
from atm.fact_atm_tran fact left join atm.dim_atm dim
on fact.atm_id=dim.atm_id
where fact.atm_status='Inactive'
group by dim.atm_id,dim.atm_number
order by count desc
limit 10;
```

<Screenshot of the resultant table>

Rows returned (10)

Export

Search rows

1

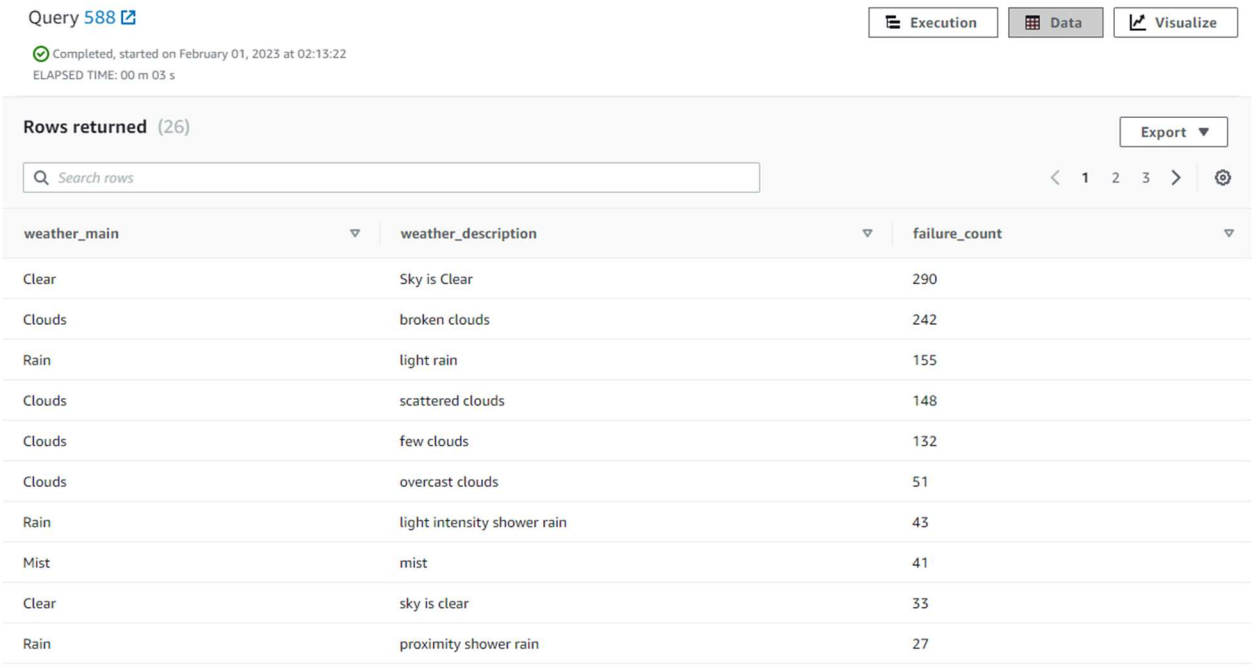
| atm_id | atm_number | count |
|---|---|---|
| 40045 | 16 | 43973 |
| 40037 | 12 | 33927 |
| 40053 | 2 | 33572 |
| 40203 | 88 | 32065 |
| 40077 | 30 | 30509 |
| 40125 | 52 | 27295 |
| 40121 | 50 | 23404 |
| 40073 | 29 | 20752 |
| 40189 | 81 | 20105 |
| 40011 | 102 | 18288 |

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

<Query>

```
select weather_main,weather_description,count(atm_status) as failure_count
from atm.fact_atm_tran
where atm_status ='Inactive'
group by weather_main,weather_description
order by failure_count desc;
```

<Screenshot of the resultant table>



Query 588

Completed, started on February 01, 2023 at 02:13:22
ELAPSED TIME: 00 m 03 s

Execution | Data | Visualize

Rows returned (26)

Export

Search rows

1 2 3

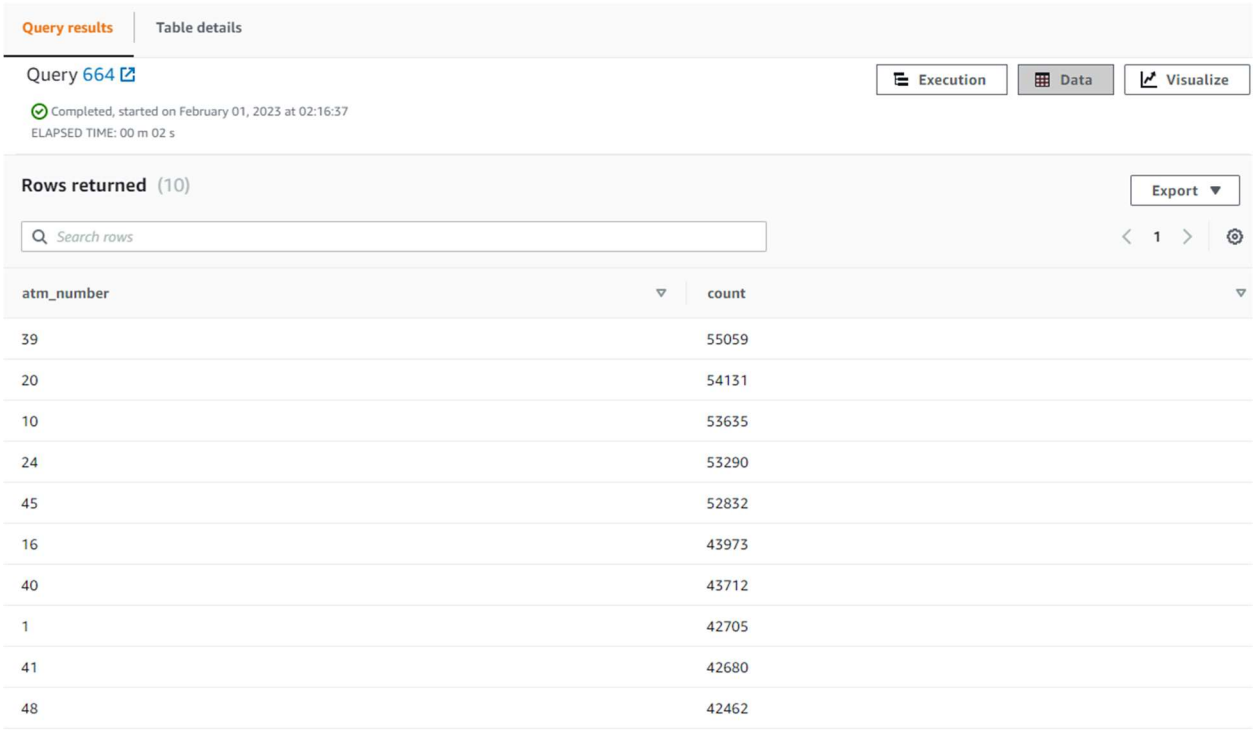
| weather_main | weather_description | failure_count |
|---|---|---|
| Clear | Sky is Clear | 290 |
| Clouds | broken clouds | 242 |
| Rain | light rain | 155 |
| Clouds | scattered clouds | 148 |
| Clouds | few clouds | 132 |
| Clouds | overcast clouds | 51 |
| Rain | light intensity shower rain | 43 |
| Mist | mist | 41 |
| Clear | sky is clear | 33 |
| Rain | proximity shower rain | 27 |

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

<Query>

```
select dim.atm_number,count(fact.atm_id) as count
from atm.fact_atm_tran as fact left join atm.dim_atm as dim
on fact.atm_id=dim.atm_id
group by dim.atm_number
order by count desc
limit 10;
```

<Screenshot of the resultant table>



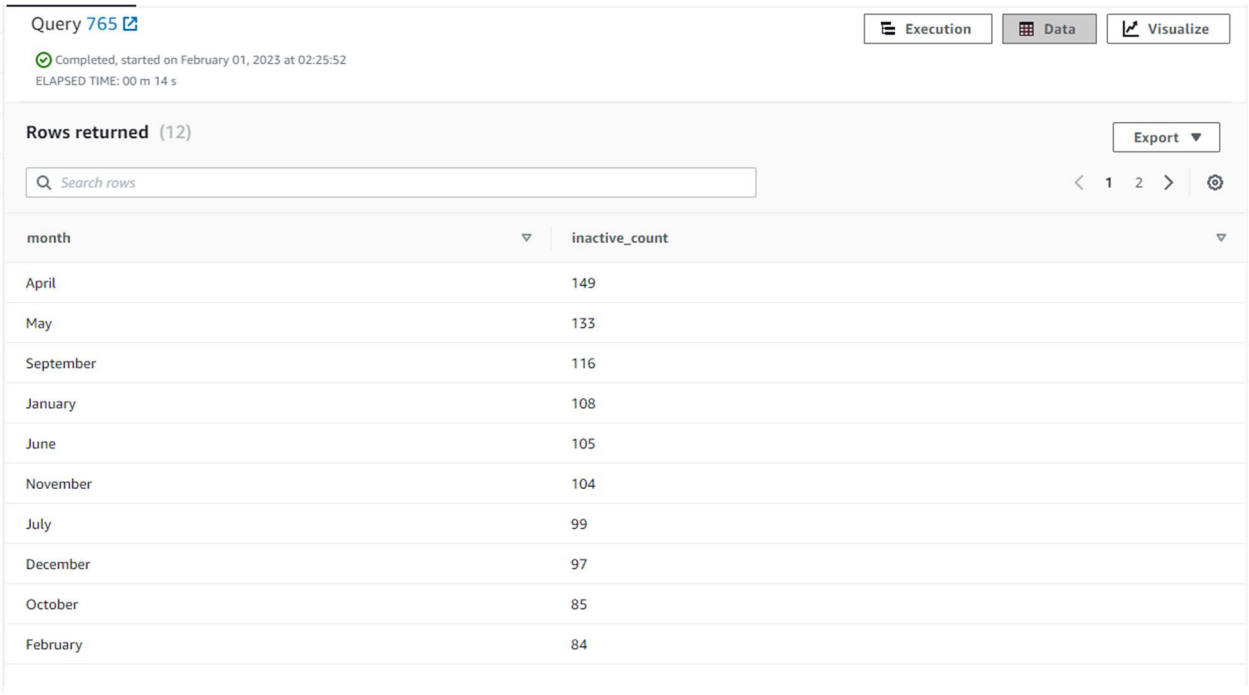

| atm_number | count |
|---|---|
| 39 | 55059 |
| 20 | 54131 |
| 10 | 53635 |
| 24 | 53290 |
| 45 | 52832 |
| 16 | 43973 |
| 40 | 43712 |
| 1 | 42705 |
| 41 | 42680 |
| 48 | 42462 |

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

<Query>

```
select dim.month,count(fact.atm_status) as Inactive_count
from atm.fact_atm_tran as fact left join atm.dim_date as dim
on fact.date_id=dim.date_id
where fact.atm_status='Active' and fact.message_code<>'0000'
group by dim.month
order by Inactive_count desc;
```

<Screenshot of the resultant table>



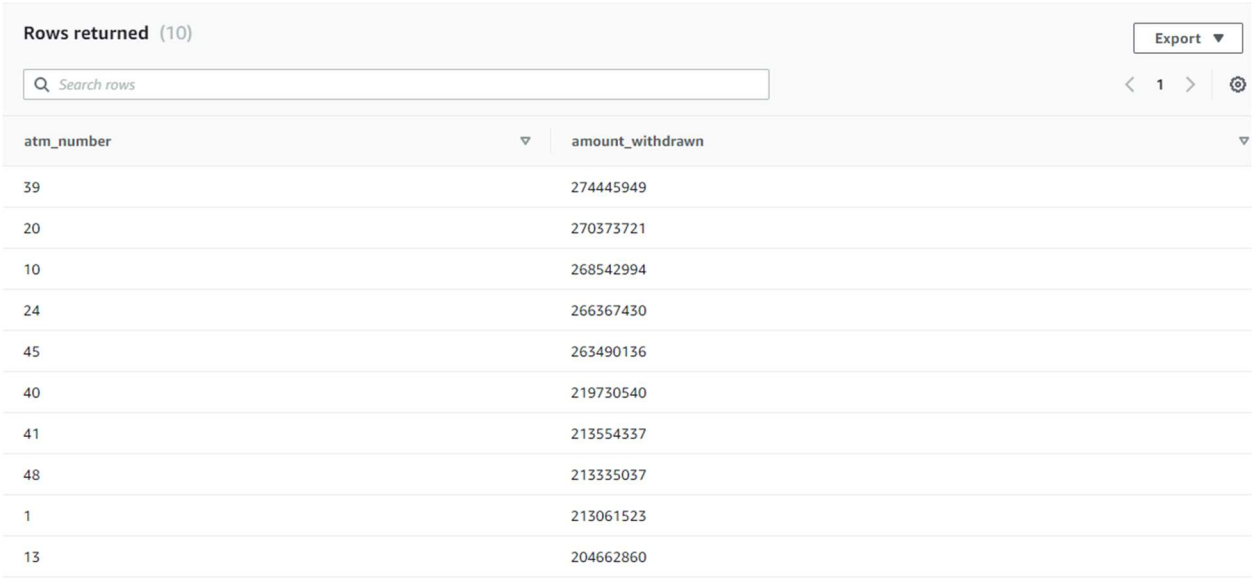

| month | inactive_count |
|---|---|
| April | 149 |
| May | 133 |
| September | 116 |
| January | 108 |
| June | 105 |
| November | 104 |
| July | 99 |
| December | 97 |
| October | 85 |
| February | 84 |

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

<Query>

```
select dim.atm_number,sum(fact.transaction_amount) as amount_withdrawn
from atm.fact_atm_tran fact left join atm.dim_atm dim
on fact.atm_id=dim.atm_id
where fact.atm_status='Active' and fact.service='Withdrawal'
group by fact.atm_id
order by amount_withdrawn desc
limit 10;
```

<Screenshot of the resultant table>



Rows returned (10)

Export

Search rows

1

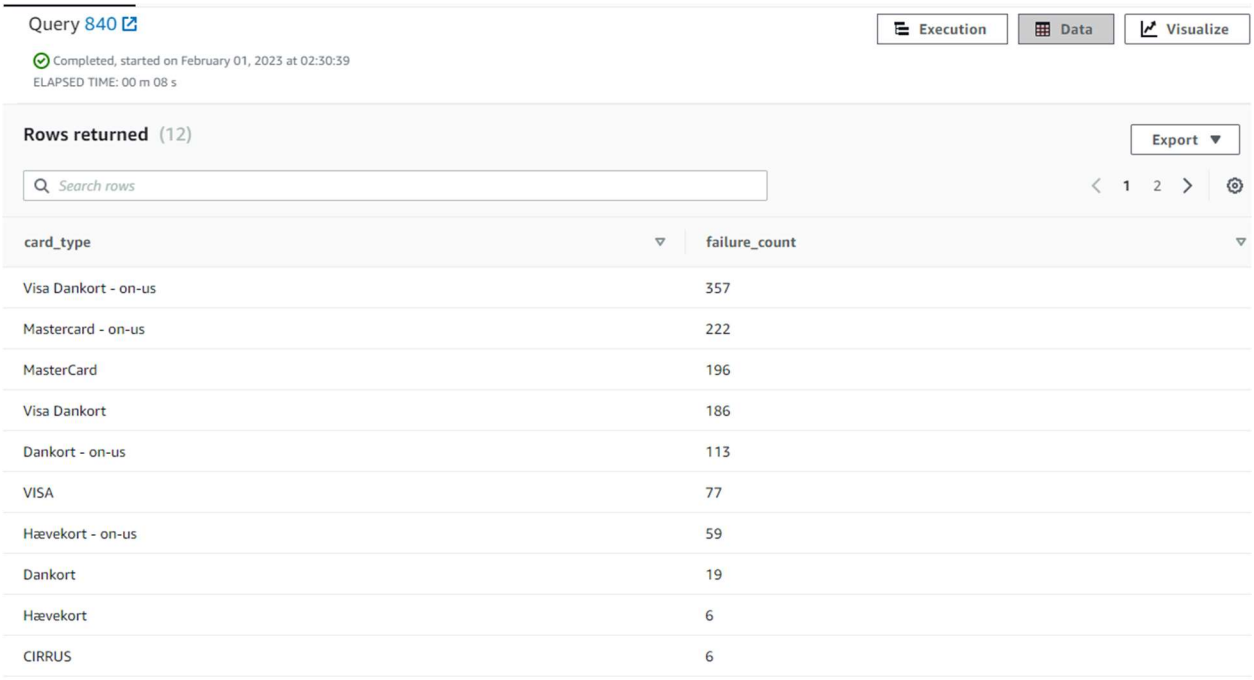
| atm_number | amount_withdrawn |
|---|---|
| 39 | 274445949 |
| 20 | 270373721 |
| 10 | 268542994 |
| 24 | 266367430 |
| 45 | 263490136 |
| 40 | 219730540 |
| 41 | 213554337 |
| 48 | 213335037 |
| 1 | 213061523 |
| 13 | 204662860 |

## 6. Number of failed ATM transactions across various card types

<Query>

```
select dim.card_type,count(fact.message_code) as failure_count
from atm.fact_atm_tran fact left join atm.dim_card_type dim
on fact.card_type_id=dim.card_type_id
where fact.message_code<>'0000' and fact.atm_status='Active'
group by dim.card_type
order by failure_count desc;
```

<Screenshot of the resultant table>



Query 840

Execution | Data | Visualize

Completed, started on February 01, 2023 at 02:30:39
ELAPSED TIME: 00 m 08 s

Rows returned (12)

Export

Search rows

1 2

| card_type | failure_count |
|---|---|
| Visa Dankort - on-us | 357 |
| Mastercard - on-us | 222 |
| MasterCard | 196 |
| Visa Dankort | 186 |
| Dankort - on-us | 113 |
| VISA | 77 |
| Hævekort - on-us | 59 |
| Dankort | 19 |
| Hævekort | 6 |
| CIRRUS | 6 |

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 dim_atm.atm_number,dim_atm.atm_manufacturer,dim_loc.location,
        case dim_date.weekday
   when 'Saturday' then True
   when 'Sunday' then True
   else False
   end as weekend_flag,
   count(fact.tran_id) as total_transaction_count
from atm.fact_atm_tran fact
left join atm.dim_atm dim_atm
on fact.atm_id=dim_atm.atm_id
left join atm.dim_loc dim_loc
on fact.weather_loc_id=dim_loc.location_id
left join atm.dim_date dim_date
on fact.date_id=dim_date.date_id
where fact.atm_status='Active'
group by dim_atm.atm_number,dim_atm.atm_manufacturer,dim_loc.location,weekend_flag
order by
dim_atm.atm_number,dim_atm.atm_manufacturer,dim_loc.location,weekend_flag,total_transact
ion_count;
```

<Screenshot of the resultant table>

Query 988

Execution | Data | Visualize

Completed, started on February 01, 2023 at 02:41:12
ELAPSED TIME: 00 m 07 s

**Rows returned** (175)

Export

Search rows

1 2 3 4 5 6 7 ... 18

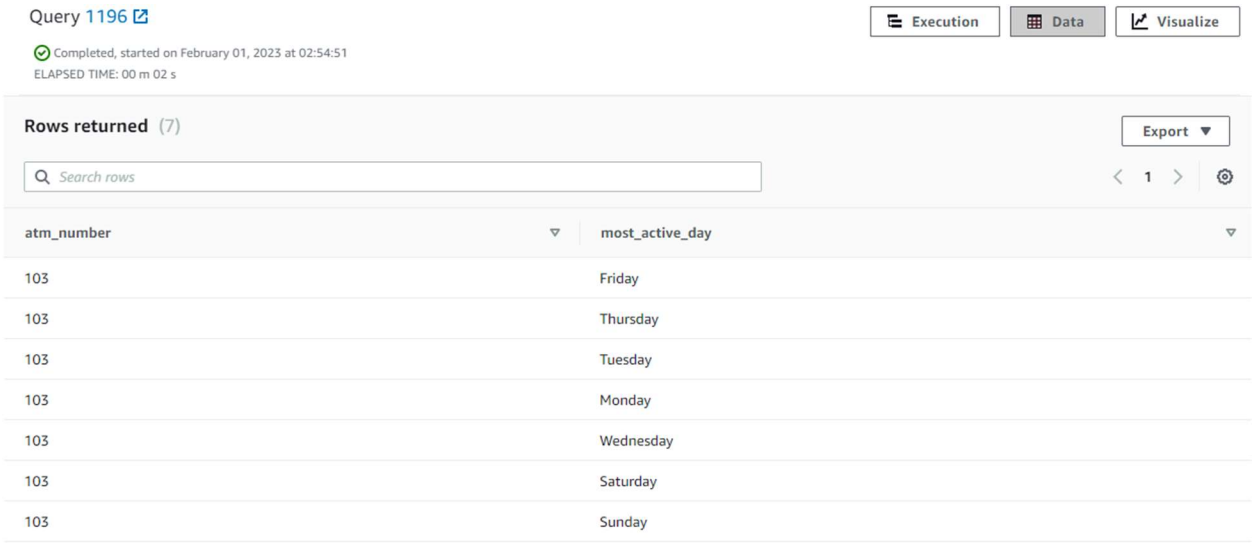
| atm_number | atm_manufacturer | location | weekend_flag | total_transaction_count |
|---|---|---|---|---|
| 1 | NCR | Næstved | false | 32654 |
| 1 | NCR | Næstved | true | 10051 |
| 10 | NCR | Nørresundby | false | 41542 |
| 10 | NCR | Nørresundby | true | 12093 |
| 100 | NCR | Intern Skive | false | 17769 |
| 100 | NCR | Intern Skive | true | 1 |
| 101 | NCR | Bryggen Vejle | false | 11665 |
| 101 | NCR | Bryggen Vejle | true | 3238 |
| 103 | Diebold Nixdorf | Vejgaard | false | 18517 |
| 103 | Diebold Nixdorf | Vejgaard | true | 2606 |

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

Considering day as weekday
<Query>

```
select dim_atm.atm_number,dim_date.weekday as most_active_day
from atm.fact_atm_tran fact
left join atm.dim_atm dim_atm
on fact.atm_id=dim_atm.atm_id
left join atm.dim_loc dim_loc
on fact.weather_loc_id=dim_loc.location_id
left join atm.dim_date dim_date
on fact.date_id=dim_date.date_id
where fact.atm_status='Active' and dim_loc.location='Vejgaard'
group by dim_atm.atm_number,dim_date.weekday
order by count(fact.tran_id) desc;
```

<Screenshot of the resultant table>




| atm_number | most_active_day |
|---|---|
| 103 | Friday |
| 103 | Thursday |
| 103 | Tuesday |
| 103 | Monday |
| 103 | Wednesday |
| 103 | Saturday |
| 103 | Sunday |