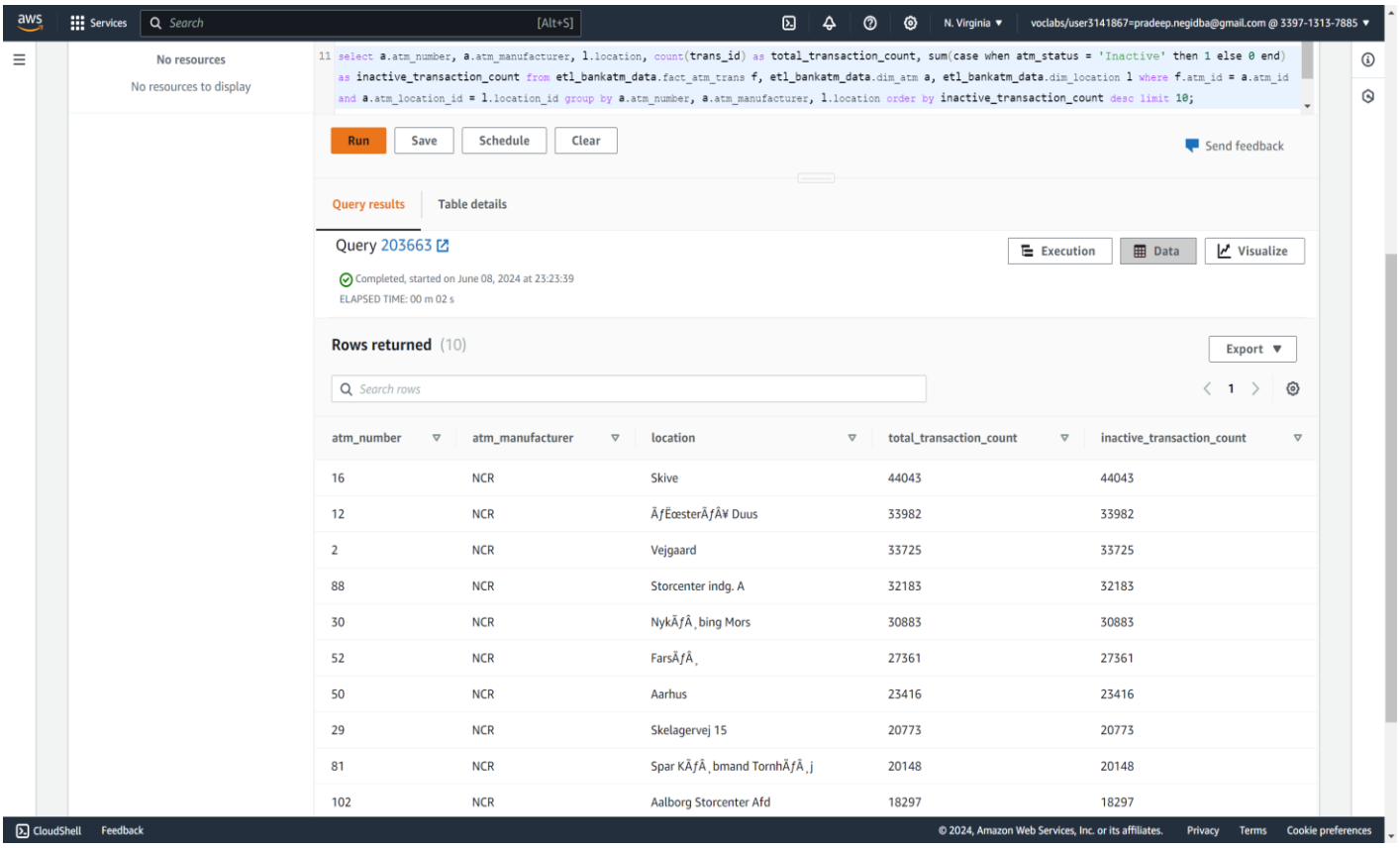
Solving analytical queries on Redshift Cluster

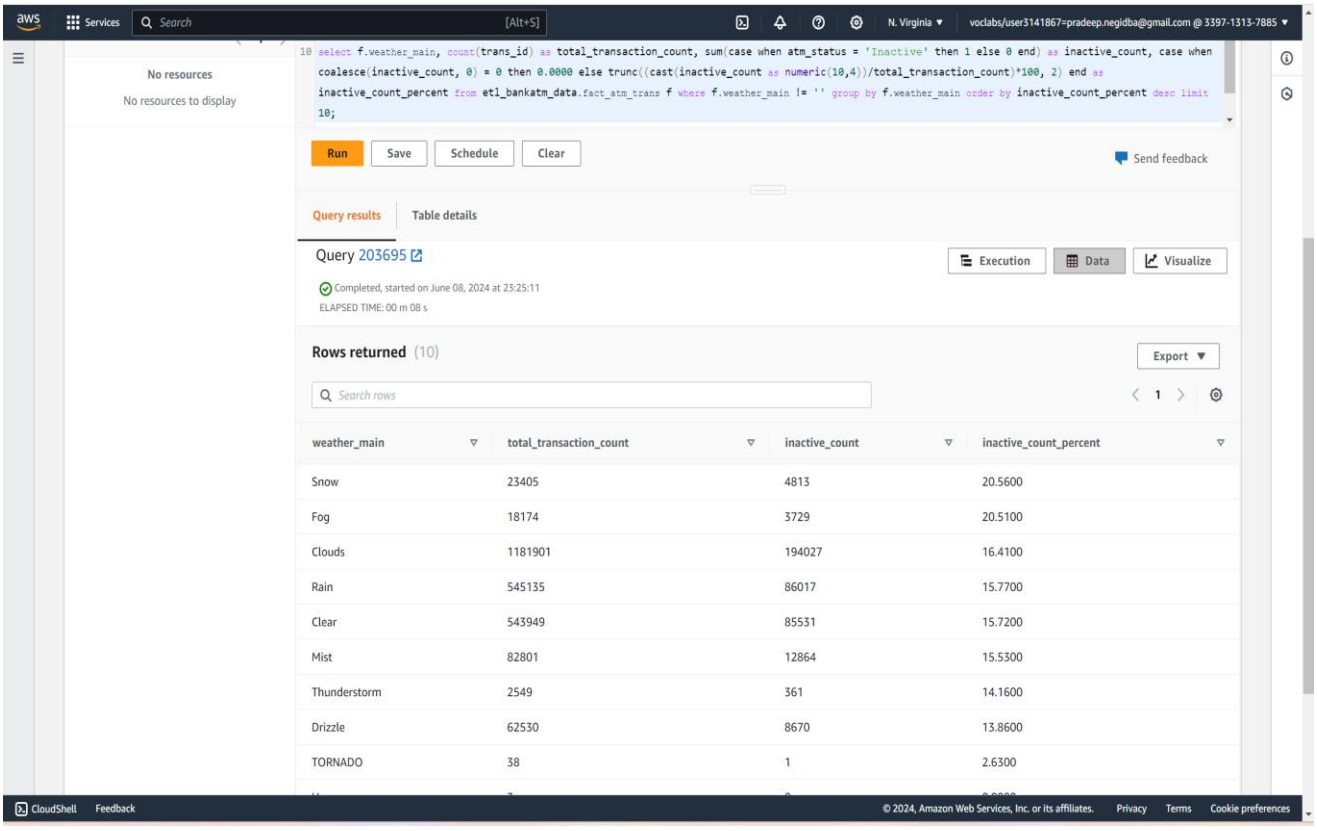
1. Top 10 ATMs where most transactions are in the 'inactive' state

```
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_transaction_count
From  etl_bankatm_data.fact_atm_trans f,
  etl_bankatm_data.dim_atm a,
  etl_bankatm_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  inactive_transaction_count desc
limit 10;
```



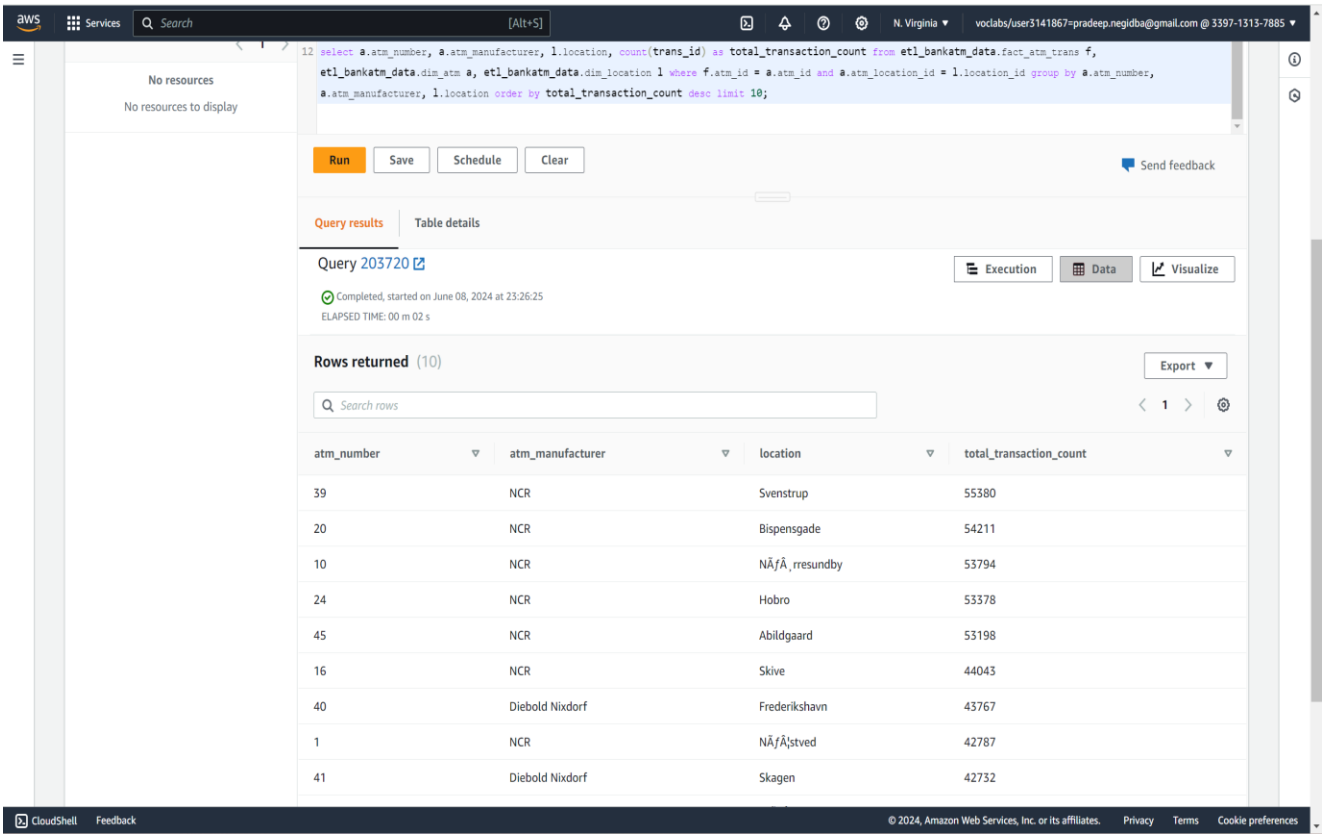
2. Number of ATM failures corresponding to the different weather conditions recorded at the time of the transactions

```
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   etl_ankatm_data.fact_atm_trans f
where  f.weather_main != ''
group by  f.weather_main
order by  inactive_count_percent desc
limit  10;
```



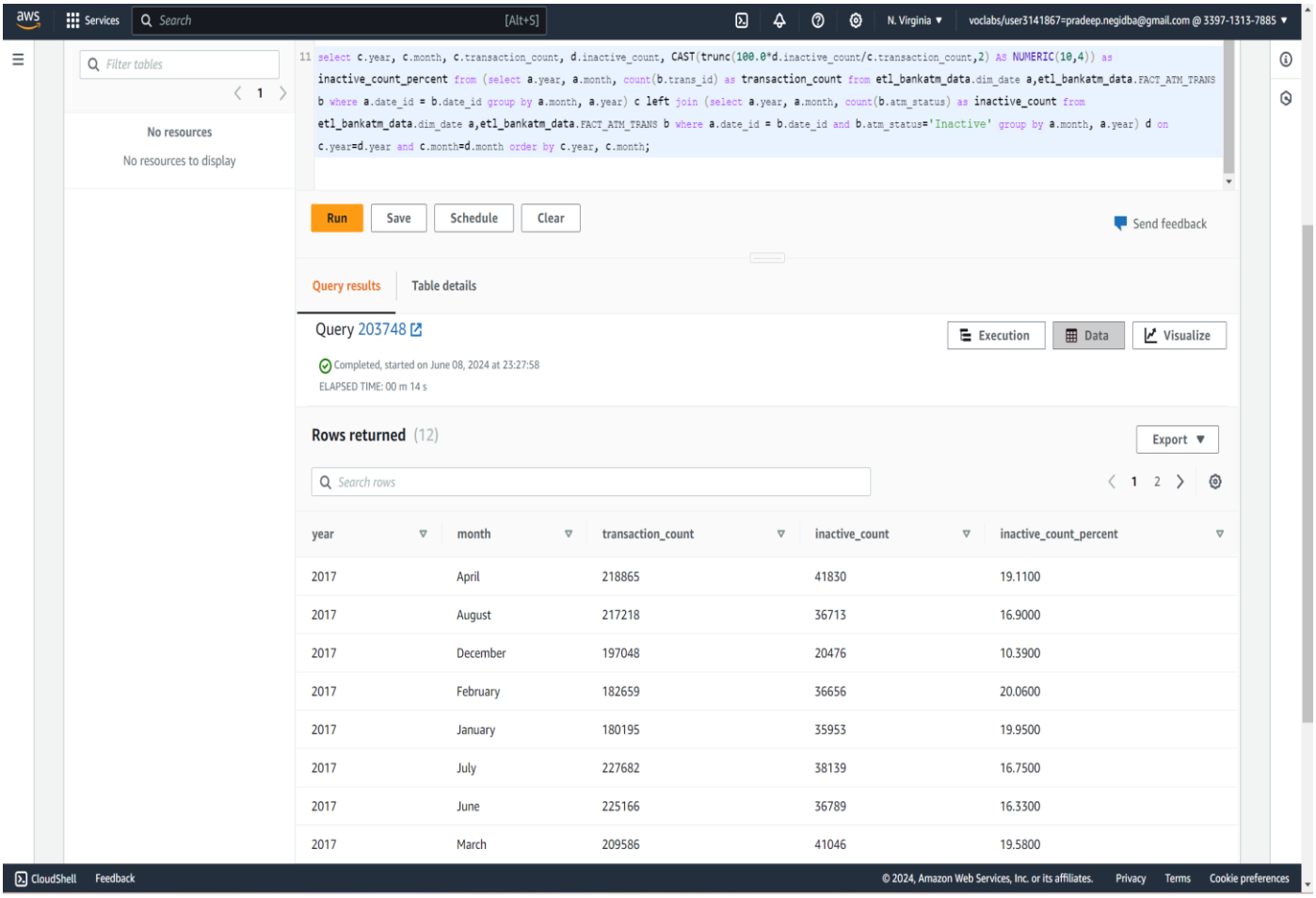
3. Top 10 ATMs with the most number of transactions throughout the year

```
Select  a.atm_number,
  a.atm_manufacturer,
  l.location,
  count(trans_id) as total_transaction_count
From
  etl_bankatm_data.fact_atm_trans f,
  etl_bankatm_data.dim_atm a,
  etl_bankatm_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;
```



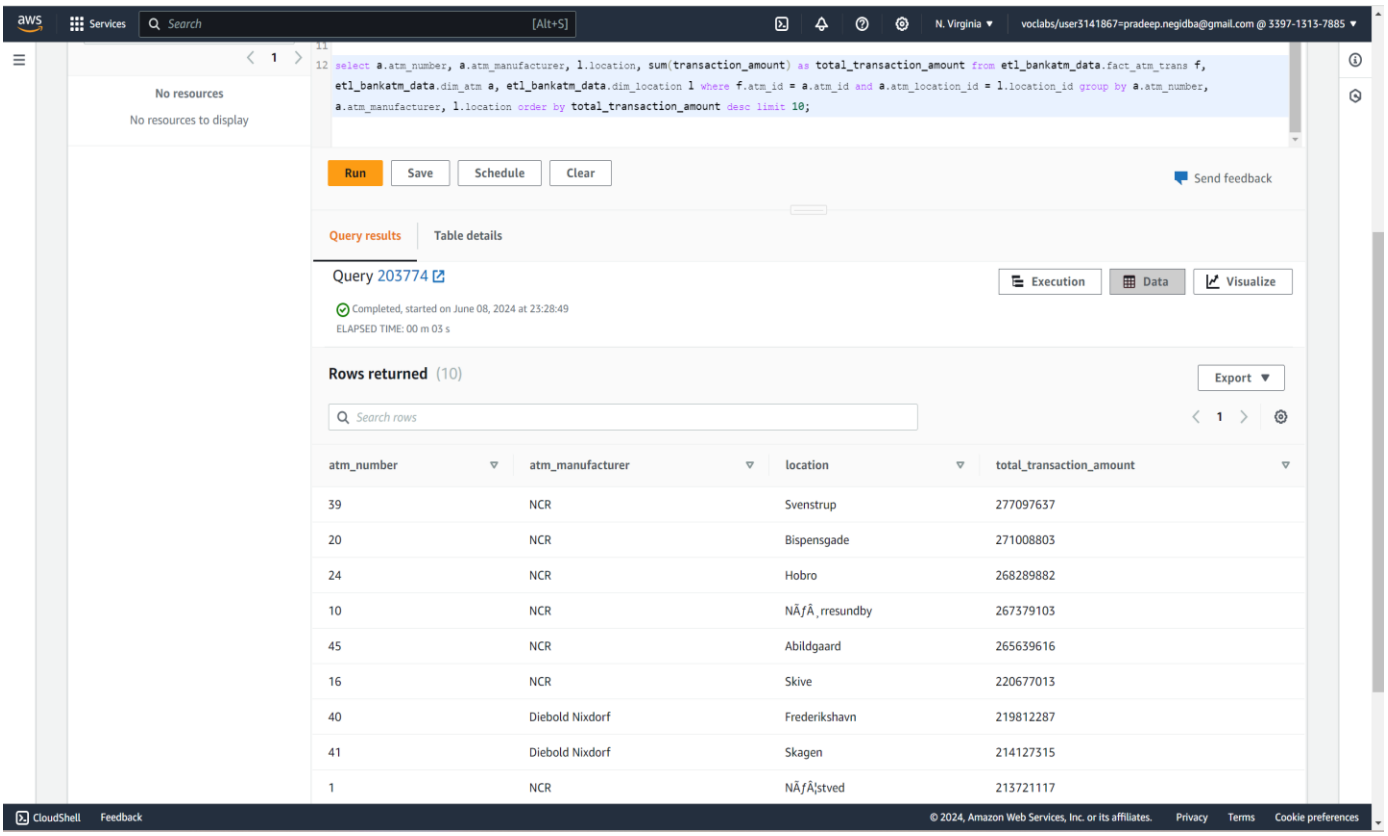
4. Number of overall ATM transactions going inactive per month for each month

```
Select c.year,
  c.month,
  c.transaction_count,
  d.inactive_count,
  CAST(trunc(100.0 * d.inactive_count / c.transaction_count,2) AS NUMERIC(10, 4)
  ) as inactive_count_percent
from
  (select a.year,
      a.month,
      count(b.trans_id) as transaction_count
    from
      etl_bankatm_data.dim_date a,
      etl_bankatm_data.FACT_ATM_TRANS b
    where a.date_id = b.date_id
    group by
      a.month,
      a.year
  ) c
  left join (select a.year,
      a.month,
      count(b.atm_status) as inactive_count
    from
      etl_bankatm_data.dim_date a,
      etl_bankatm_data.FACT_ATM_TRANS b
    where
      a.date_id = b.date_id
      and b.atm_status = 'Inactive'
    group by
      a.month,
      a.year
  ) d on c.year = d.year
  and c.month = d.month
order by
  c.year,
  c.month;
```



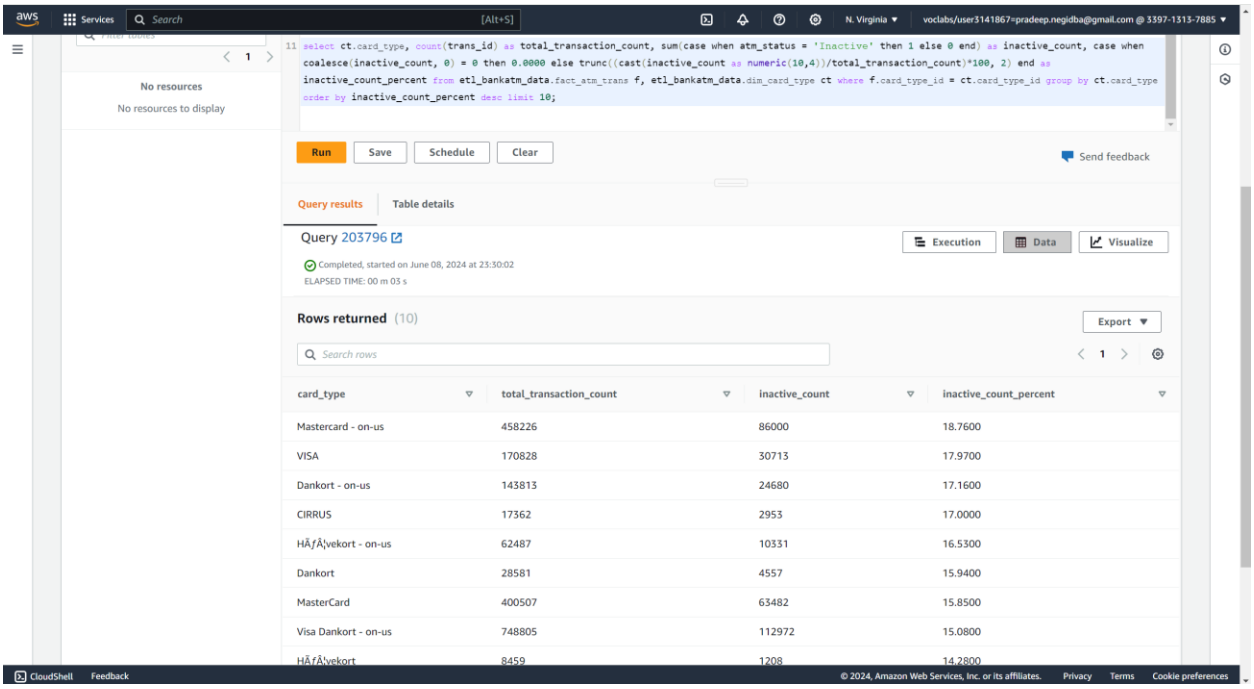
5. Top 10 ATMs with the highest total withdrawn amount throughout the year

```
Select  a.atm_number,  a.atm_manufacturer,  l.location,
  sum(transaction_amount) as total_transaction_amount
from
  etl_bankatm_data.fact_atm_trans f,
  etl_bankatm_data.dim_atm a,
  etl_bankatm_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;
```



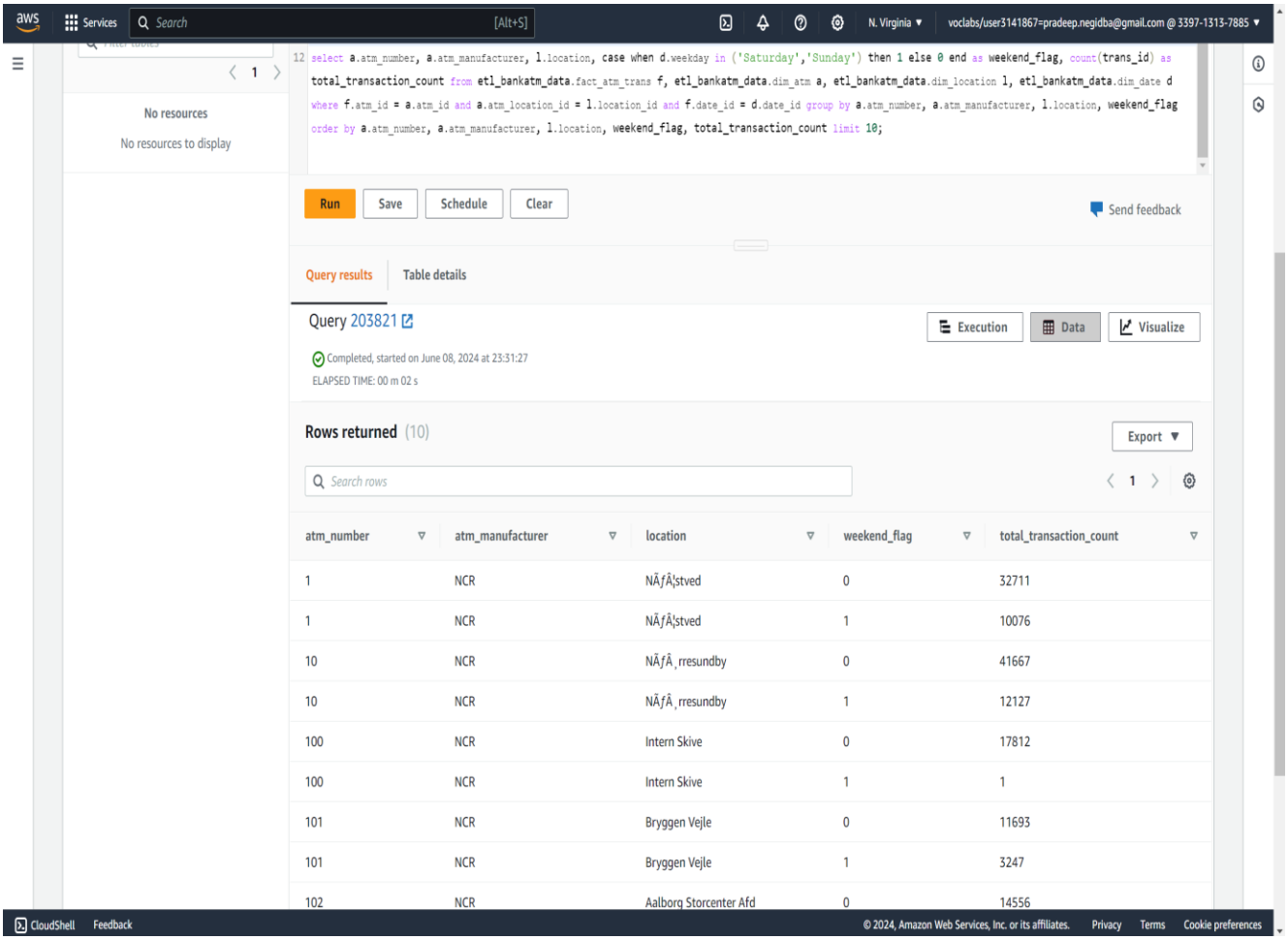
6. Number of failed ATM transactions across various card types

```
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
  etl_bankatm_data.fact_atm_trans f,
  etl_bankatm_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;
```



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
  etl_bankatm_data.fact_atm_trans f,
  etl_bankatm_data.dim_atm a,
  etl_bankatm_data.dim_location l,
  etl_bankatm_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;
```



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  etl_bankatm_data.fact_atm_trans f
  inner join etl_bankatm_data.dim_atm a on f.atm_id = a.atm_id
  inner join etl_bankatm_data.dim_location l on a.atm_location_id = l.location_id
  inner join etl_bankatm_data.dim_date d on f.date_id = d.date_id
where l.location = 'Vejgaard'
  and d.weekday in (select d.weekday
    from etl_bankatm_data.fact_atm_trans f
      inner join etl_bankatm_data.dim_date d on f.date_id = d.date_id
      inner join etl_bankatm_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;
```