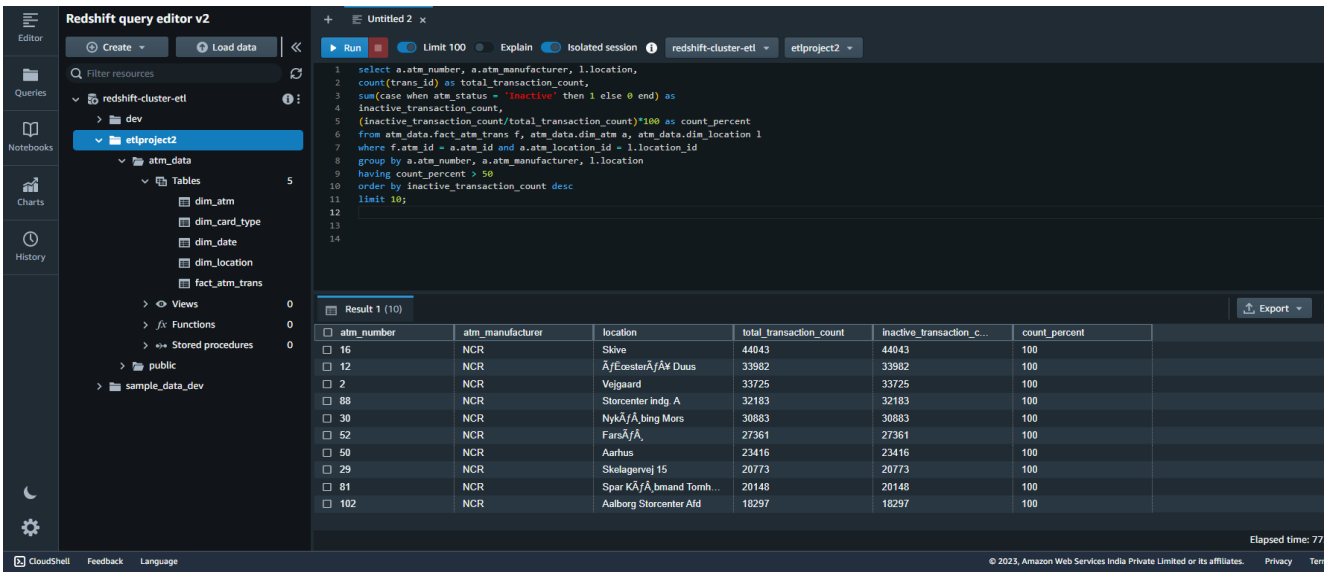
Solving queries on RedShift Cluster

Queries used for solving the question and the screenshots of the table with outputs after the query is run on the AWS RedShift Query editor UI:

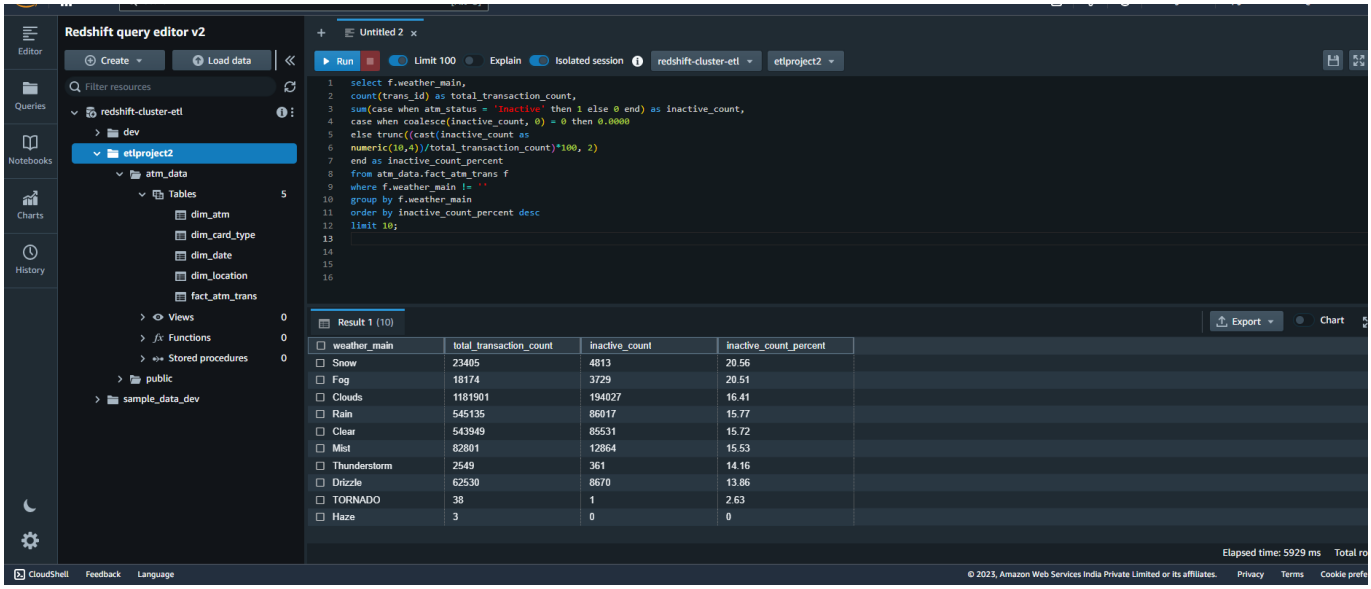
1. Top 10 ATMs where most transactions are in the ‘inactive’ state

select 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, (inactive_transaction_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_transaction_count desc limit 10;



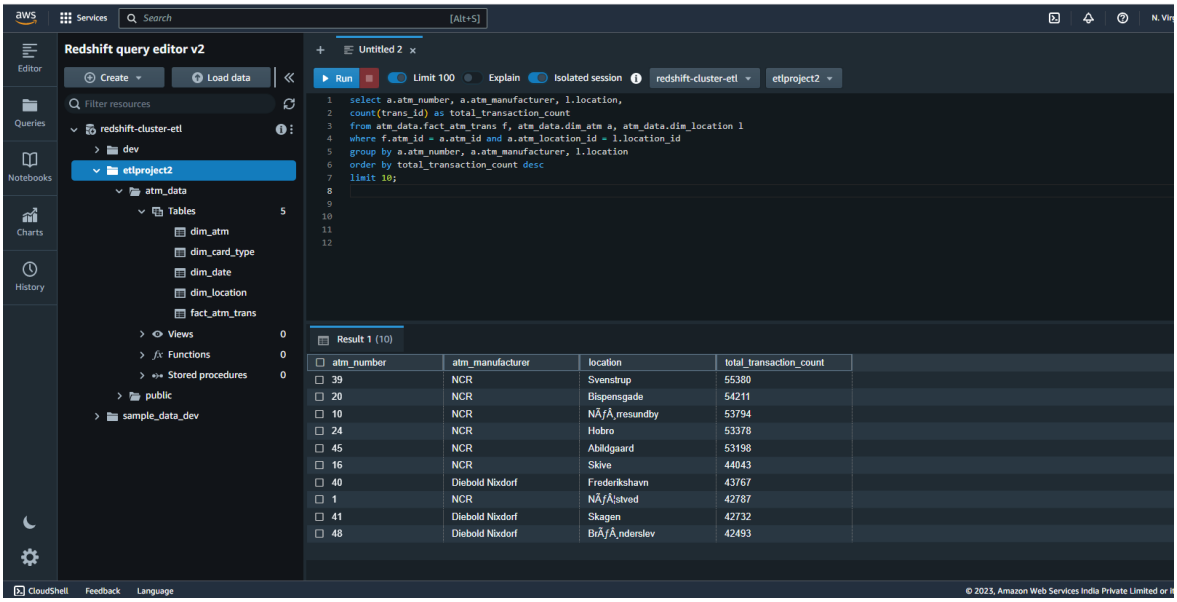
2. Number of ATM failures corresponding to the different weather conditions recorded at the time of the transactions

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



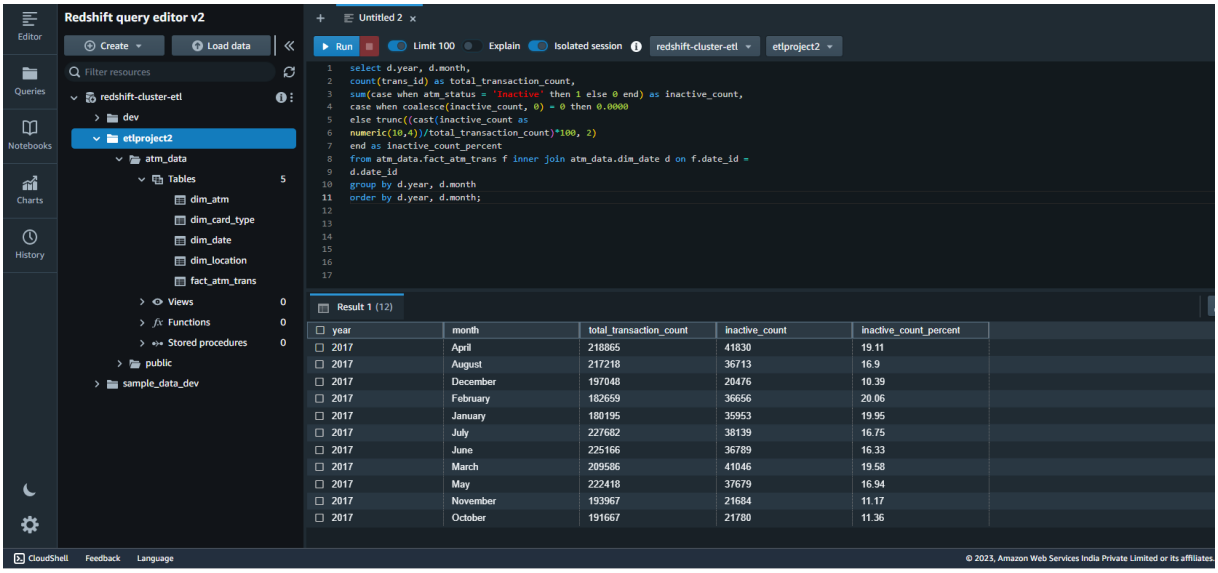
3. Top 10 ATMs with the most number of transactions throughout the year

select a.atm_number, a.atm_manufacturer, l.location, count(trans_id) as total_transaction_count from 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;



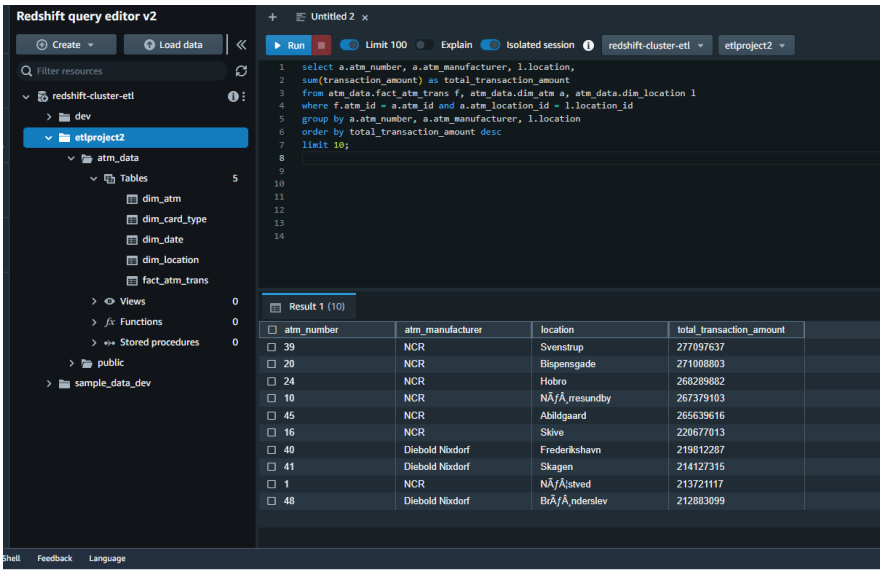
4. Number of overall ATM transactions going inactive per month for each month

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;



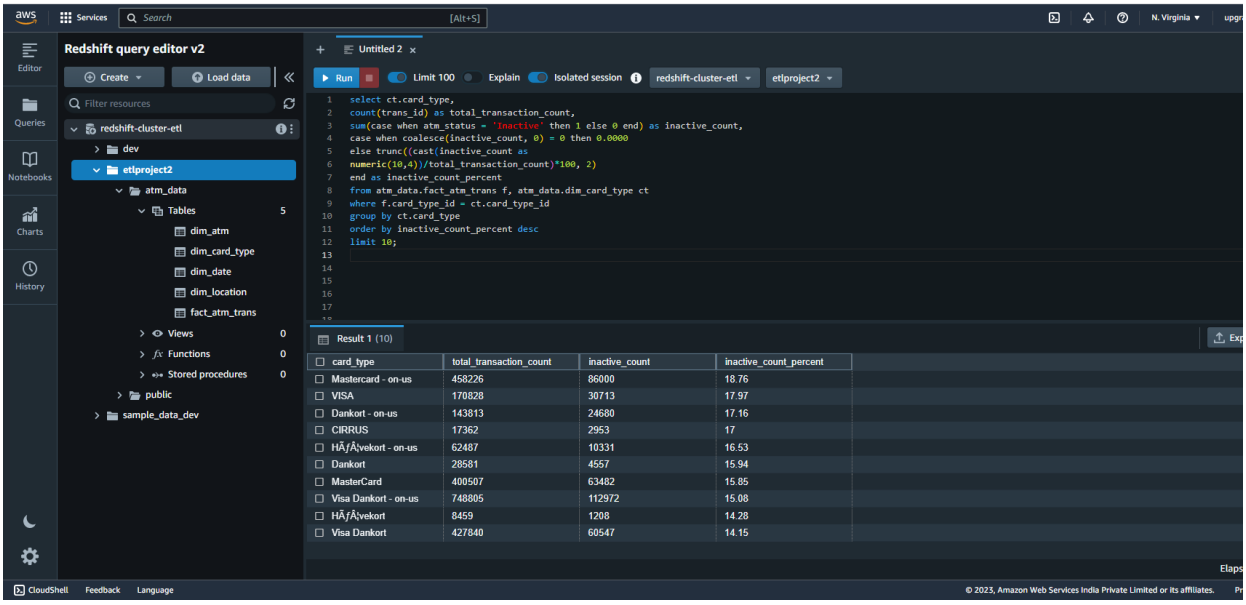
5. Top 10 ATMs with the highest total withdrawn amount throughout the year

select a.atm_number, a.atm_manufacturer, l.location, sum(transaction_amount) as total_transaction_amount from 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;



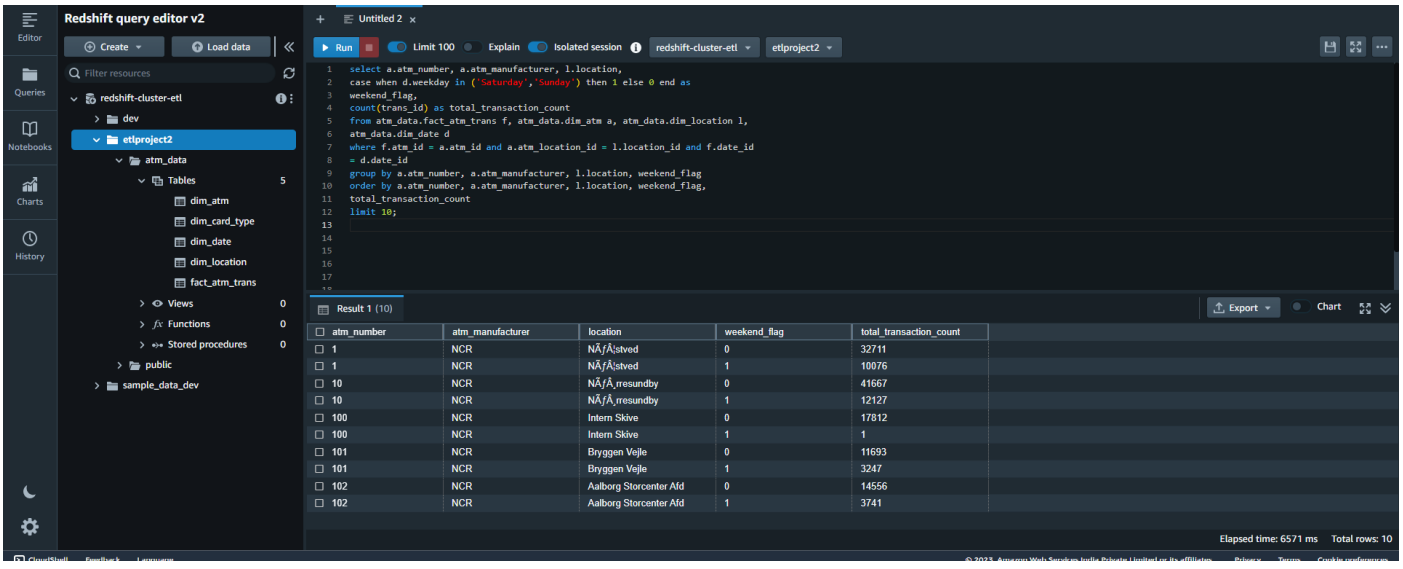
6. Number of failed ATM transactions across various card types

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;



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 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;



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;