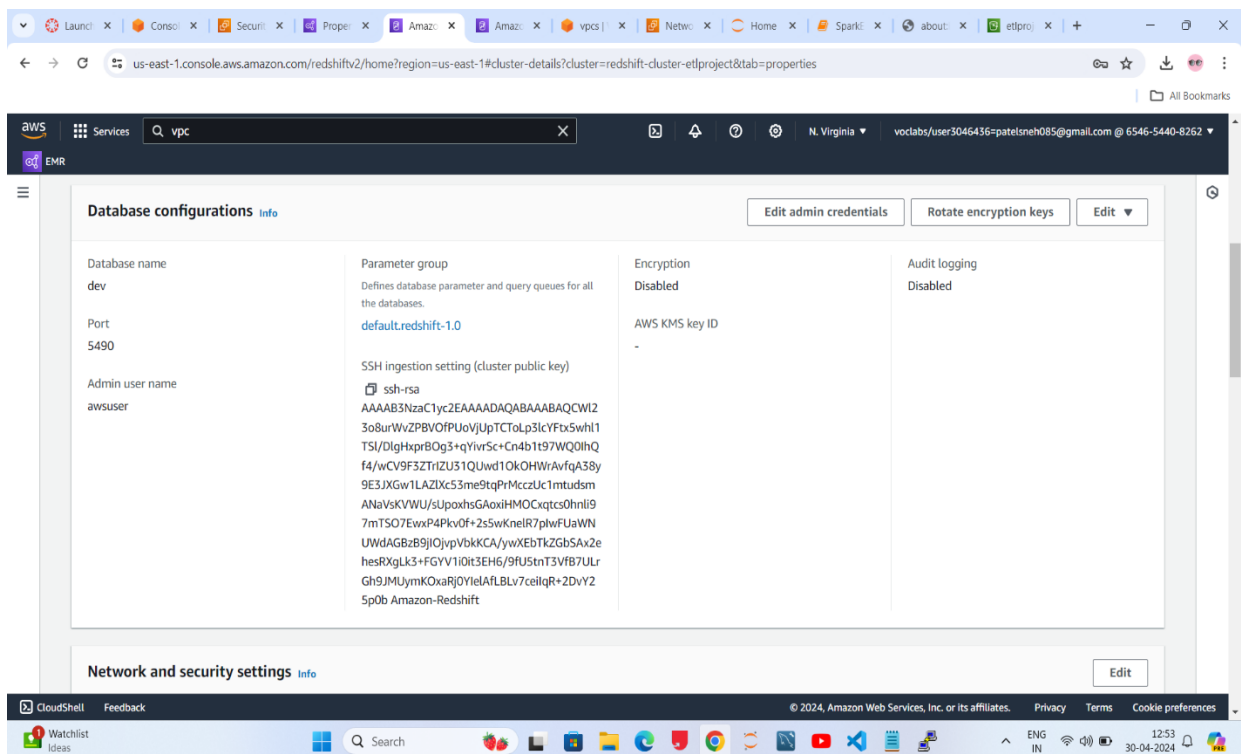
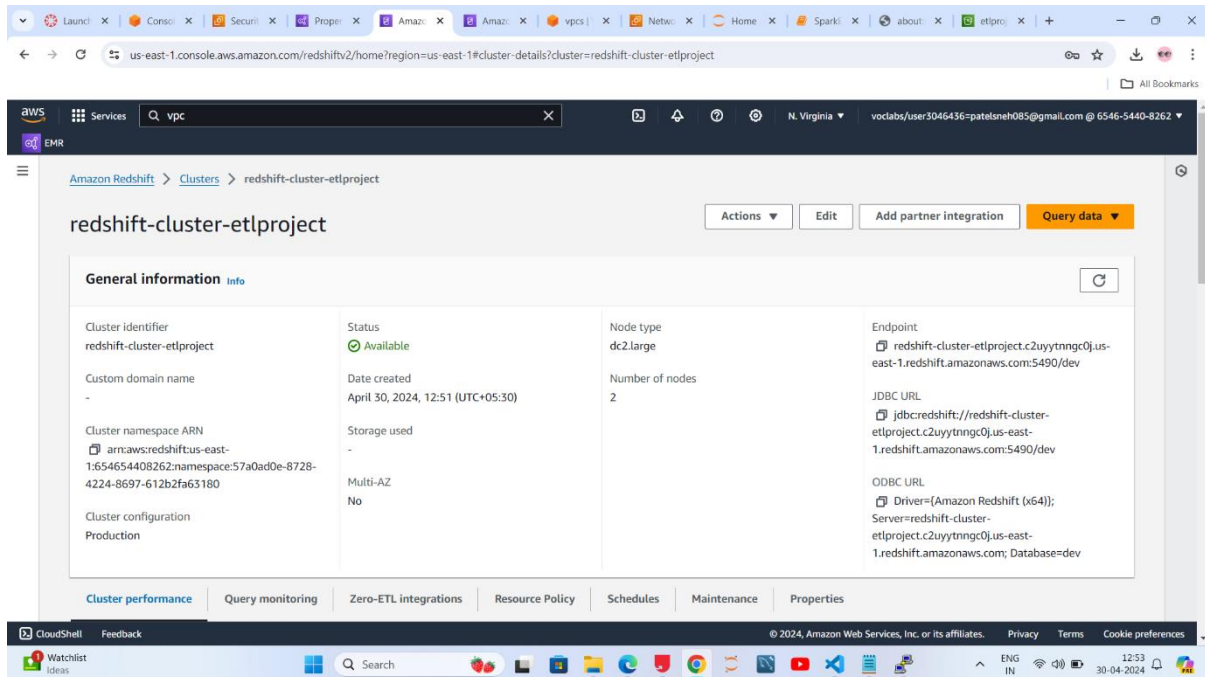


# Creation of a Redshift Cluster

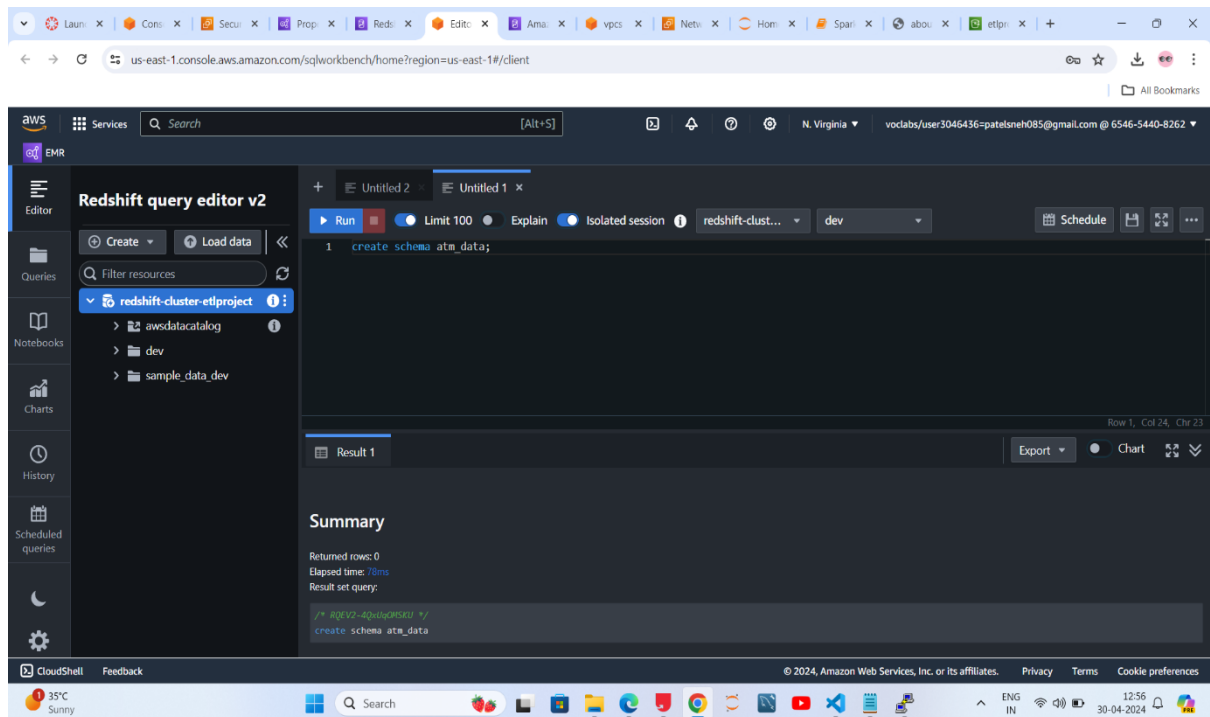
Screenshots of the configuration of the Redshift cluster that I have created:



Setting up a database in the Redshift cluster and running queries to create the dimension and fact tables:

### Query for creating schema:

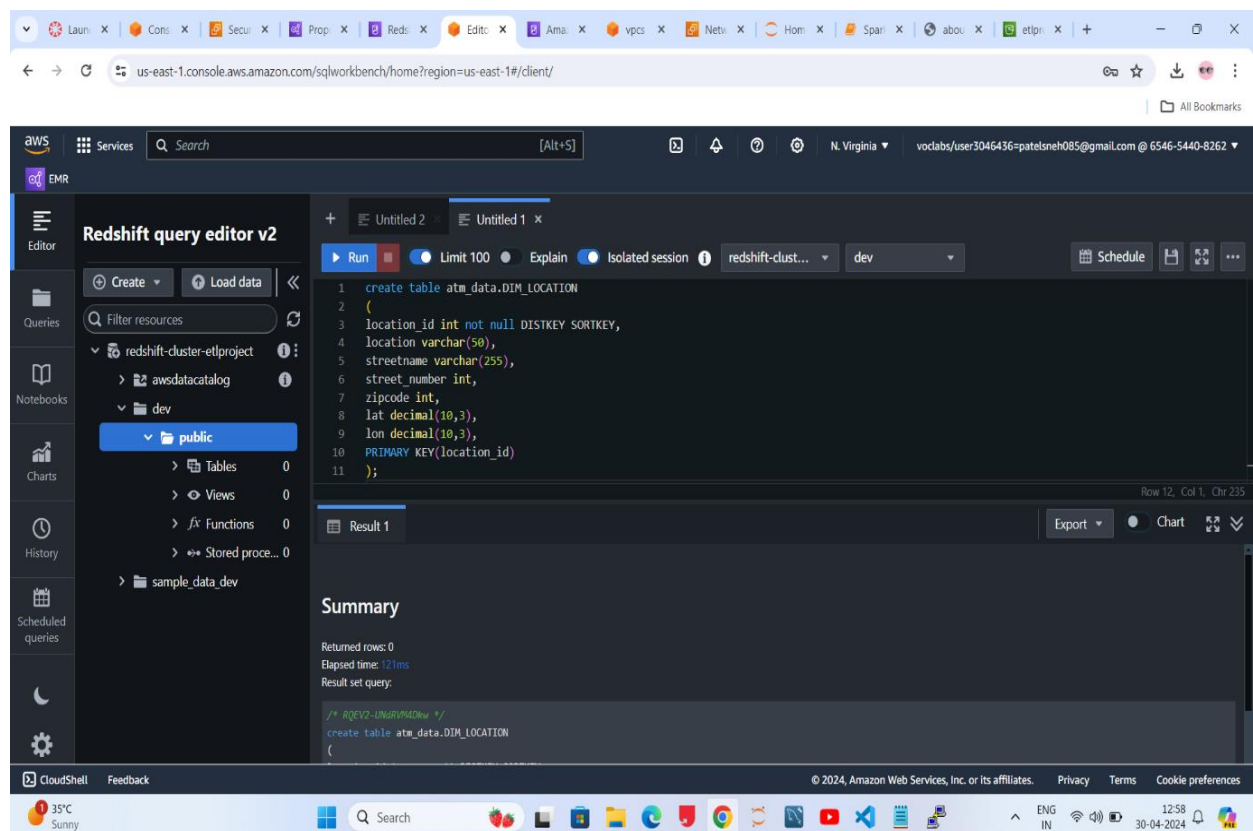
create schema atm\_data;



Queries to create the various dimension and fact tables with appropriate primary and foreign keys:

- Creating location dimension table

```
create table atm_data.DIM_LOCATION
(  
    location_id int not null DISTKEY SORTKEY,  
    location varchar(50),  
    streetname varchar(255),  
    street_number int,  
    zipcode int,  
    lat decimal(10,3),  
    lon decimal(10,3),  
    PRIMARY KEY(location_id)  
);
```



- Creating atm dimension table

**create table atm\_data.DIM\_ATM**

**(**

**atm\_id int not null DISTKEY SORTKEY,**

**atm\_number varchar(20),**

**atm\_manufacturer varchar(50),**

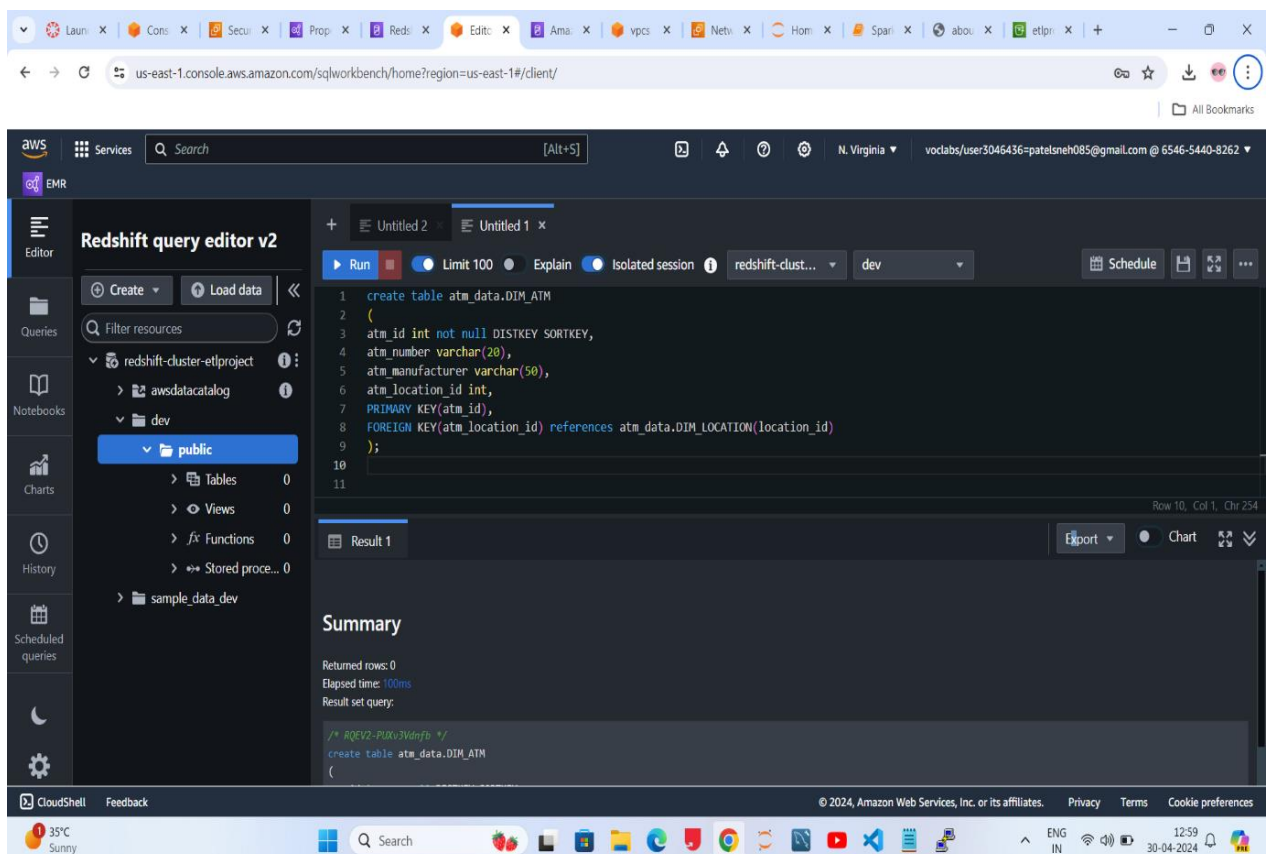
**atm\_location\_id int,**

**PRIMARY KEY(atm\_id),**

**FOREIGN KEY(atm\_location\_id) references**

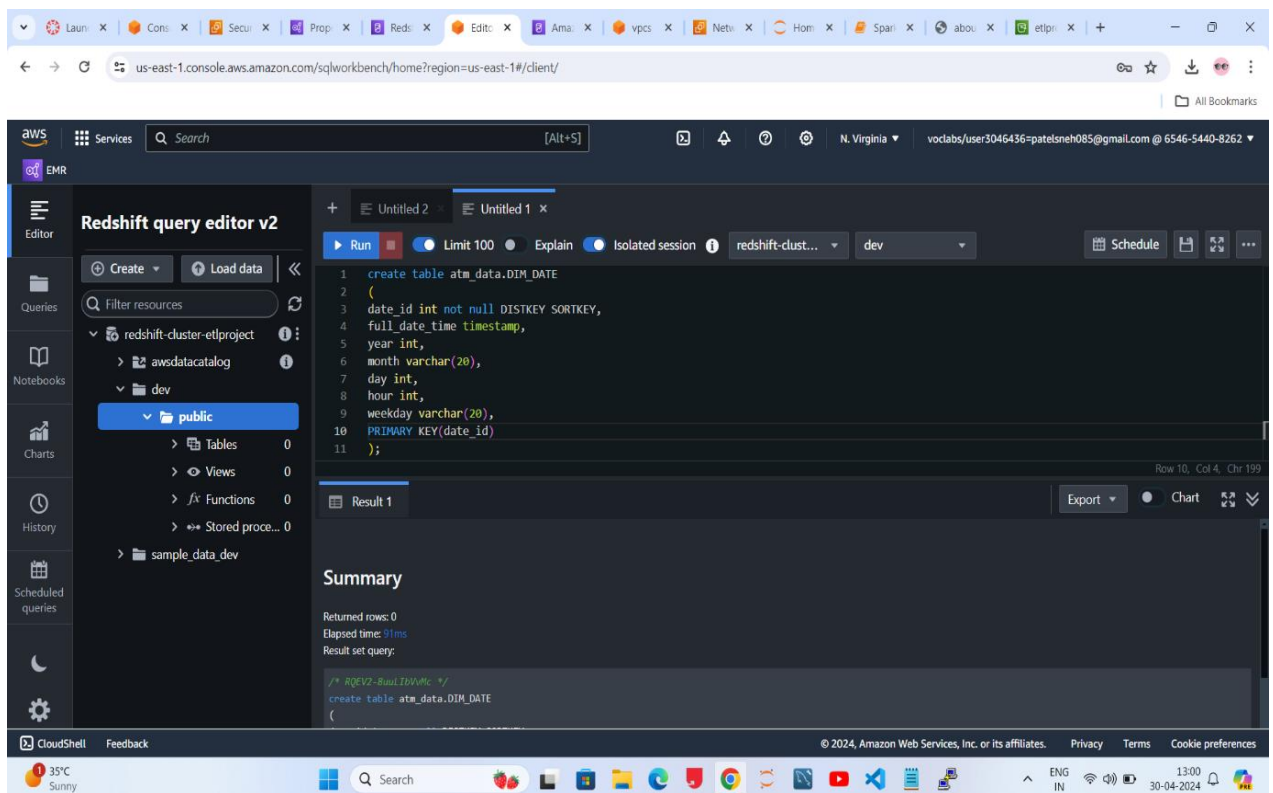
**atm\_data.DIM\_LOCATION(location\_id)**

**);**



- **Creating date dimension table**

```
create table atm_data.DIM_DATE  
(  
  date_id int not null DISTKEY SORTKEY,  
  full_date_time timestamp,  
  year int,  
  month varchar(20),  
  day int,  
  hour int,  
  weekday varchar(20),  
  PRIMARY KEY(date_id)  
);
```



- **Creating card type dimension table**

```
create table atm_data.DIM_CARD_TYPE  
(  
card_type_id int not null DISTKEY SORTKEY,  
card_type varchar(30),  
PRIMARY KEY(card_type_id)  
);
```

The screenshot displays the AWS Redshift Query Editor v2 interface. The browser address bar shows the URL: `us-east-1.console.aws.amazon.com/sqlworkbench/home?region=us-east-1#/client/`. The interface includes a sidebar with navigation options: Editor, Queries, Notebooks, Charts, History, and Scheduled queries. The main editor area shows a SQL query to create a table named `atm_data.DIM_CARD_TYPE`. The query is as follows:

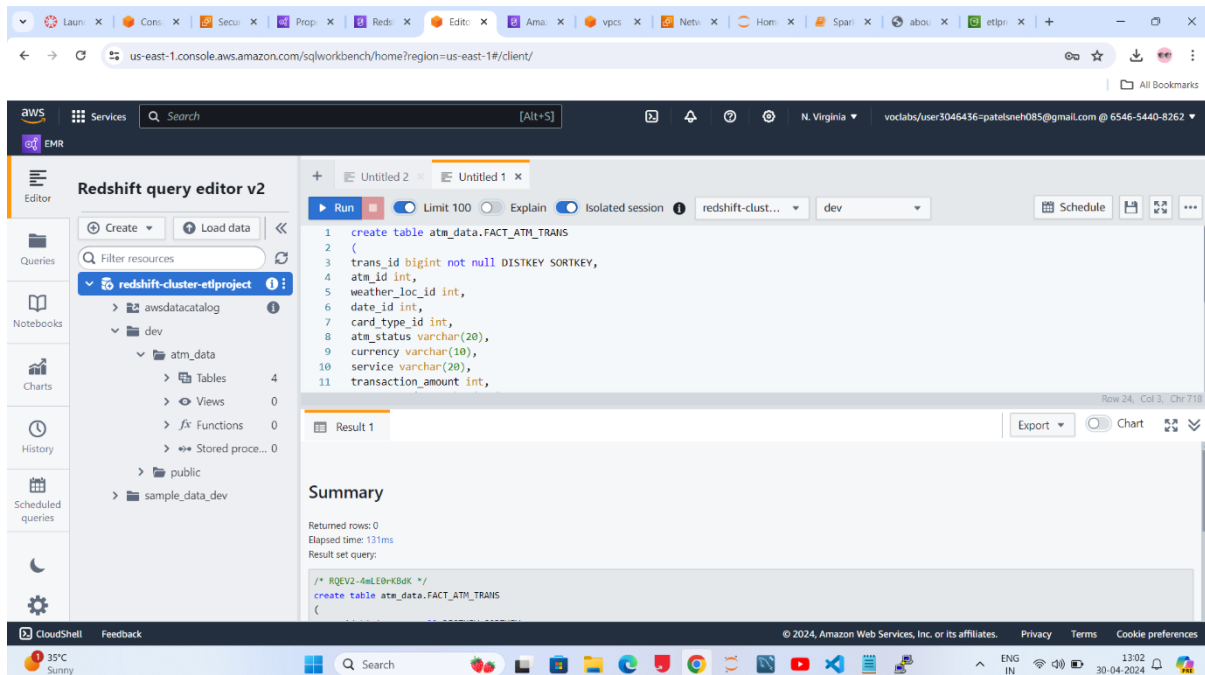
```
1 create table atm_data.DIM_CARD_TYPE  
2 (  
3 card_type_id int not null DISTKEY SORTKEY,  
4 card_type varchar(30),  
5 PRIMARY KEY(card_type_id)  
6 );
```

Below the query editor, the 'Result 1' section shows a 'Summary' of the query execution. It indicates that 0 rows were returned, the elapsed time was 112ms, and the result set query is the same SQL statement entered in the editor.

The bottom of the screenshot shows the Windows taskbar with the date and time set to 13:02 on 30-04-2024.

- Creating atm transactions fact table

```
create table atm_data.FACT_ATM_TRANS
(
trans_id bigint not null DISTKEY SORTKEY,
atm_id int,
weather_loc_id int,
date_id int,
card_type_id int,
atm_status varchar(20),
currency varchar(10),
service varchar(20),
transaction_amount int,
message_code varchar(225),
message_text varchar(225),
rain_3h decimal(10,3),
clouds_all int,
weather_id int,
weather_main varchar(50),
weather_description varchar(255),
PRIMARY KEY(trans_id),
FOREIGN KEY(weather_loc_id) references atm_data.DIM_LOCATION(location_id),
FOREIGN KEY(atm_id) references atm_data.DIM_ATM(atm_id),
FOREIGN KEY(date_id) references atm_data.DIM_DATE(date_id),
FOREIGN KEY(card_type_id) references atm_data.DIM_CARD_TYPE(card_type_id)
);
```





## Loading data into a Redshift cluster from Amazon S3 bucket

### Queries to copy the data from S3 buckets to the Redshift cluster in the appropriate tables

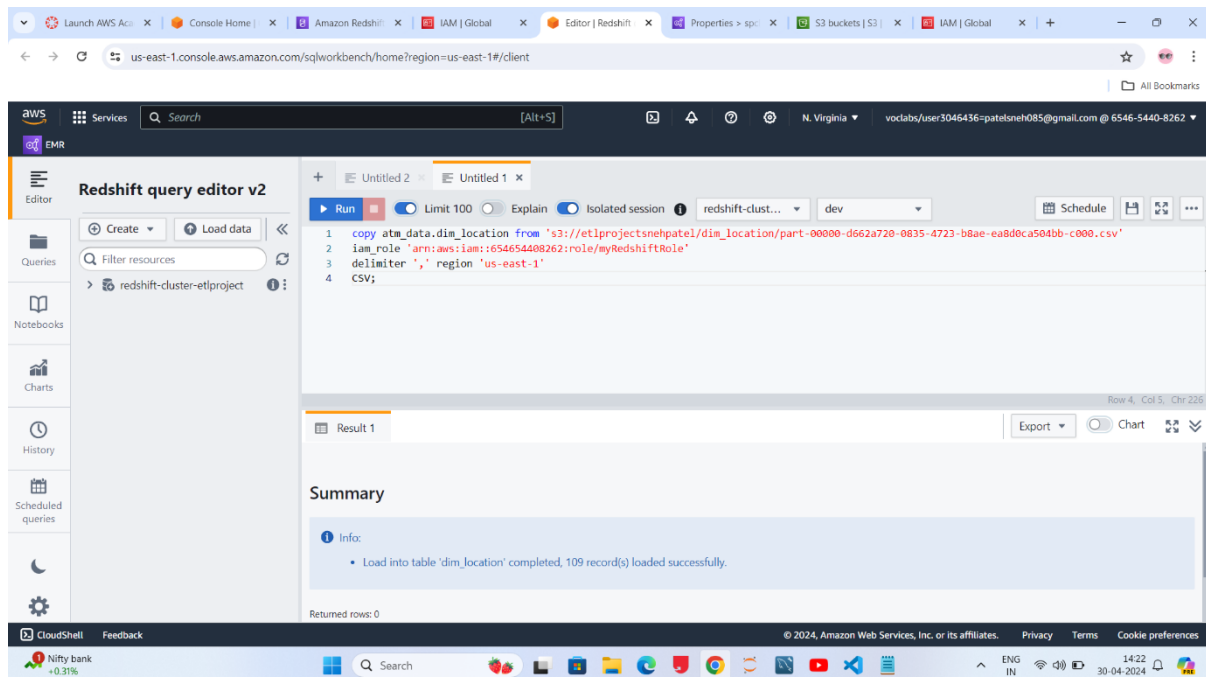
- Copying the data to dim\_location table

```
copy atm_data.dim_location from 's3://etlprojectsnehpatel/dim_location/part-00000-d662a720-0835-4723-b8ae-ea8d0ca504bb-c000.csv'
```

```
iam_role 'arn:aws:iam::654654408262:role/myredshiftrole'
```

```
delimiter ',' region 'us-east-1'
```

```
CSV;
```



- Copying the data to dim\_atm tables

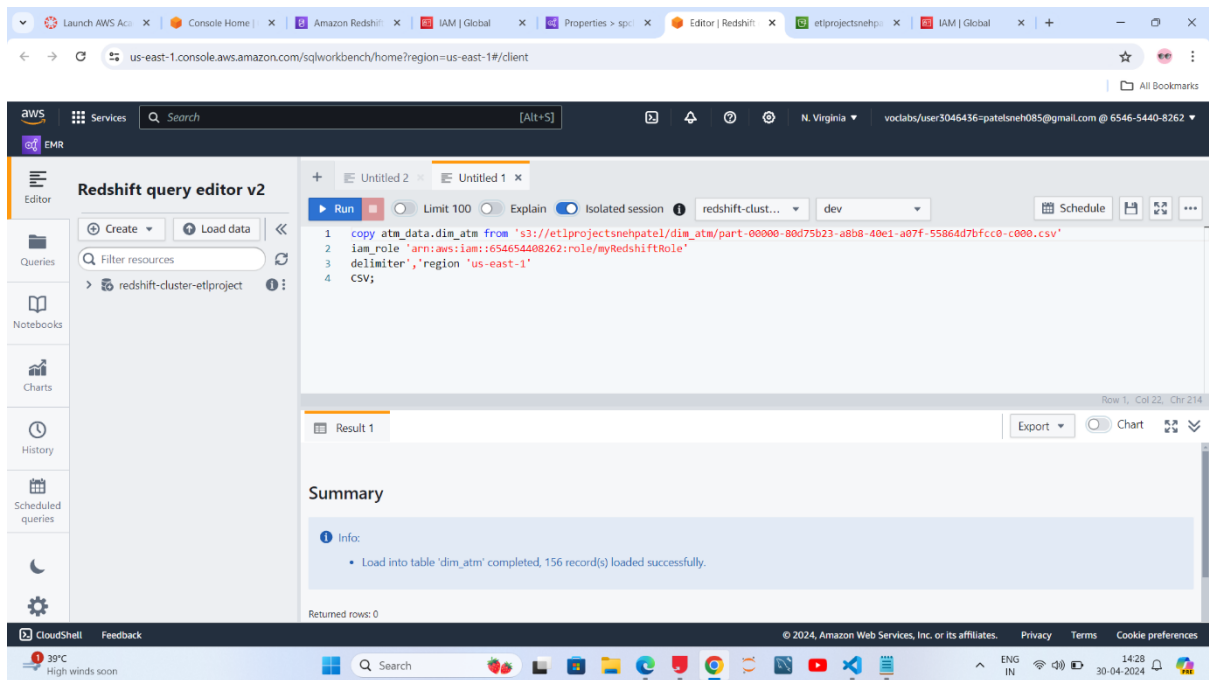
```
copy atm_data.dim_atm from 's3://etlprojectsnehpatel/dim_atm/part-00000-d662a720-0835-4723-b8ae-ea8d0ca504bb-c000.csv'
```

```
iam_role 'arn:aws:iam::654654408262:role/myredshiftrole'
```

```
delimiter ',' region 'us-east-1'
```

```
CSV
```





- Copying the data to dim\_date table:

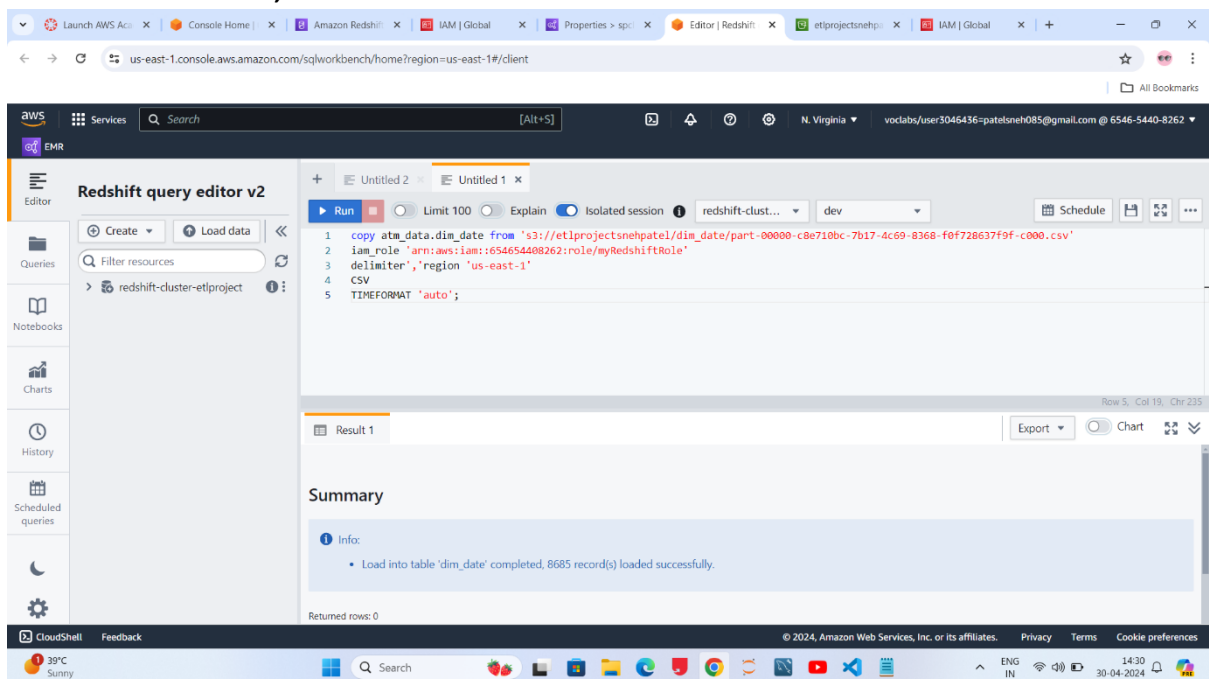
copy atm\_data.dim\_date from 's3://etlprojectsnehpate1/dim\_date/part-00000-d662a720-0835-4723-b8ae-ea8d0ca504bb-c000.csv'

iam\_role 'arn:aws:iam::654654408262:role/myredshiftrole'

delimiter ',' region 'us-east-1'

CSV

TIMEFORMAT 'auto';



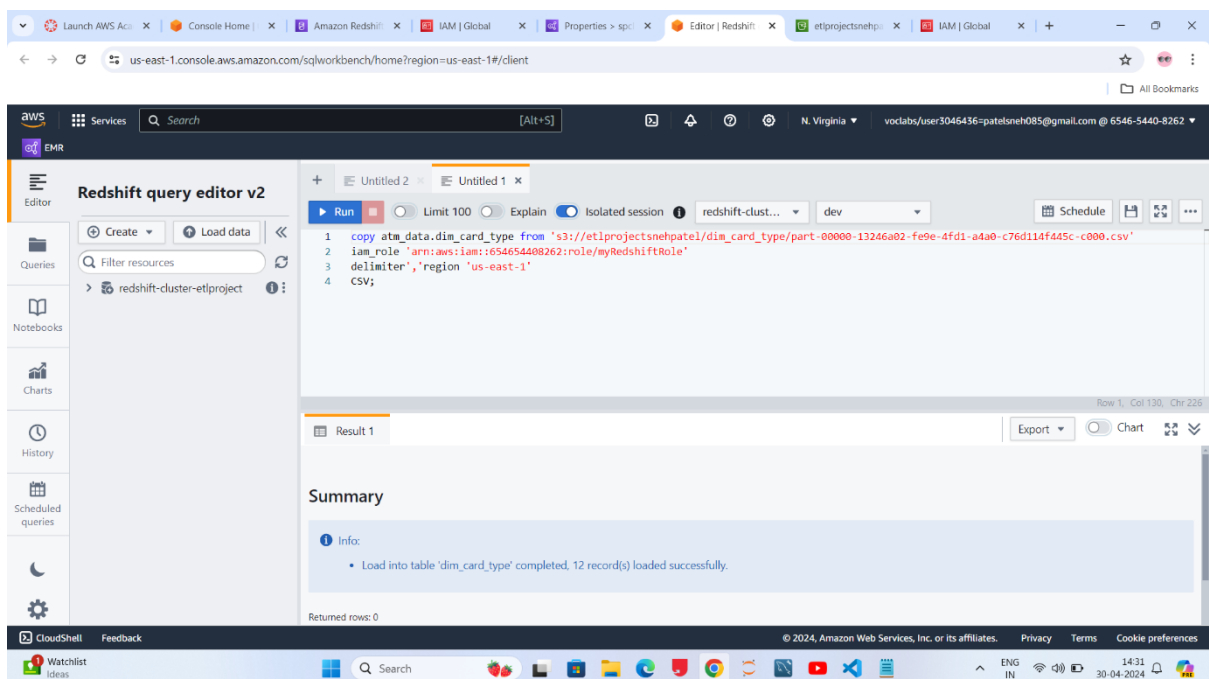
- Copying the data to dim\_card\_type table

copy atm\_data.dim\_card\_type from 's3://etlprojectsnehpate/dim\_card\_type/part-00000-d662a720-0835-4723-b8ae-ea8d0ca504bb-c000.csv'

iam\_role 'arn:aws:iam::654654408262:role/myredshiftrole'

delimiter ',' region 'us-east-1'

CSV;



## • Copying the data to fact\_atm\_trans table

copy atm\_data.fact\_atm\_trans from 's3://etlprojectsnehpate/fact\_atm\_trans/part-00000-d662a720-0835-4723-b8ae-ea8d0ca504bb-c000.csv'

iam\_role 'arn:aws:iam::654654408262:role/myredshiftrole'

delimiter ',' region 'us-east-1'

CSV;

