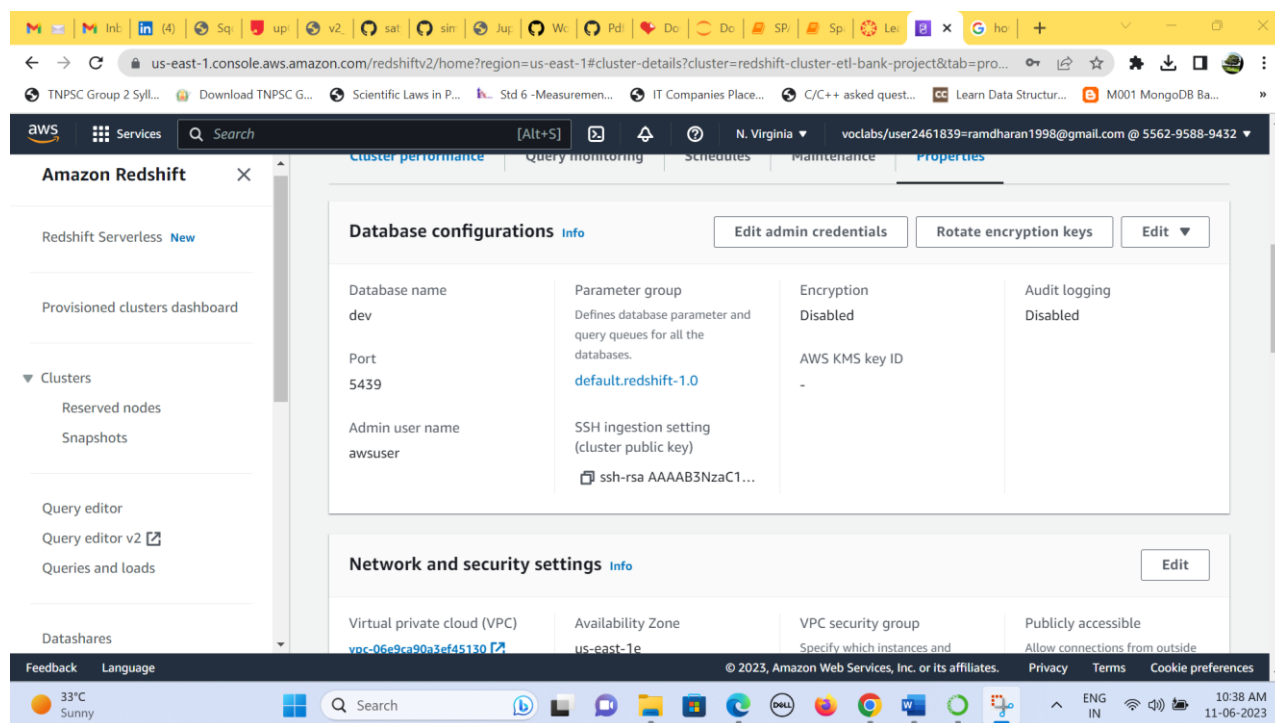
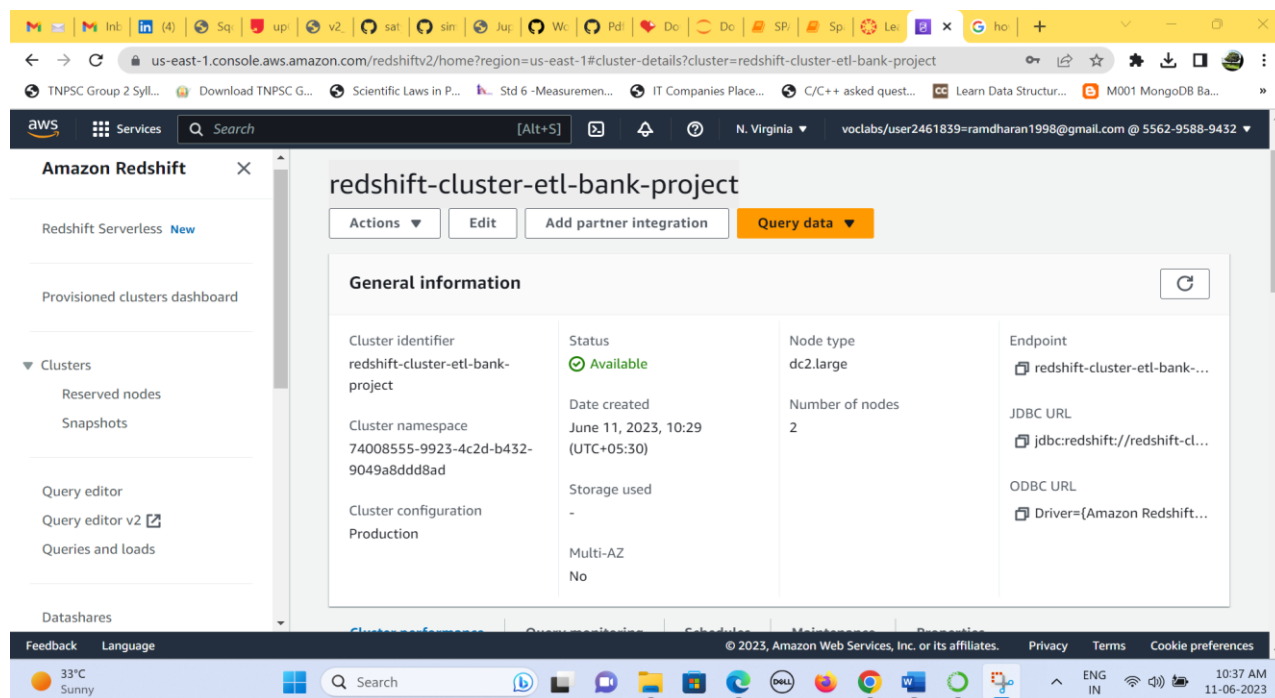
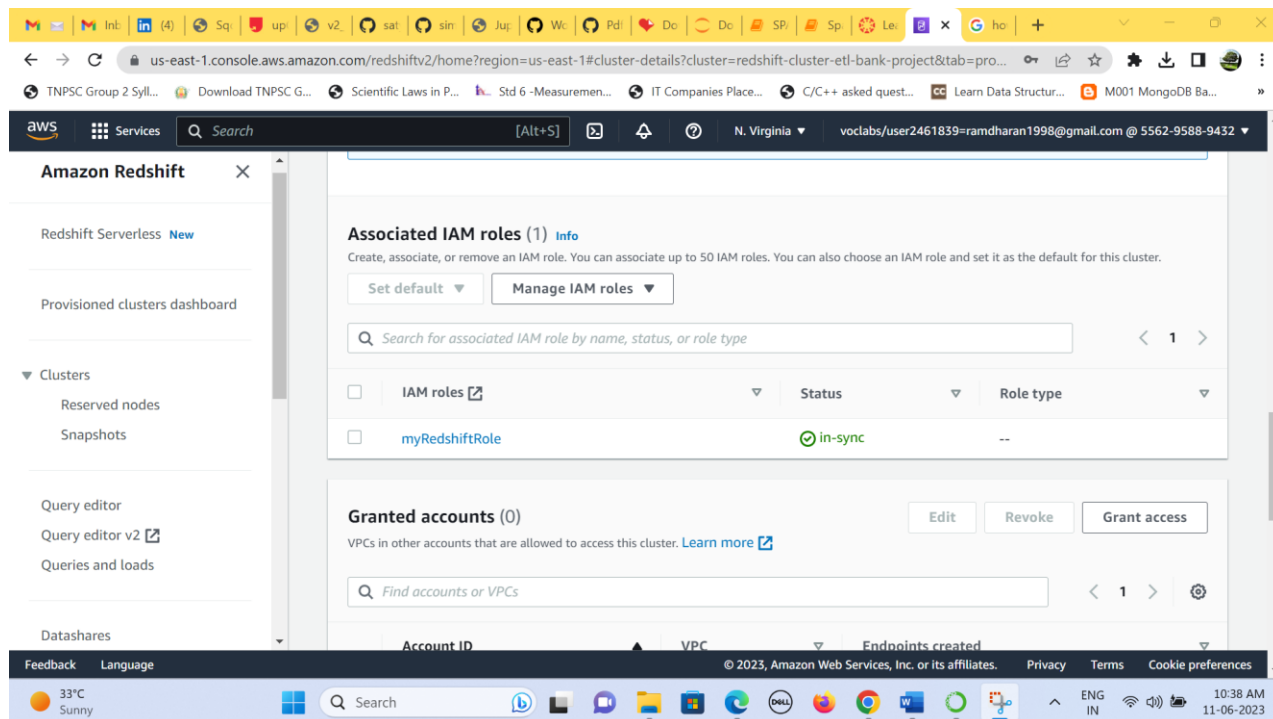


## Creation of a Redshift Cluster

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

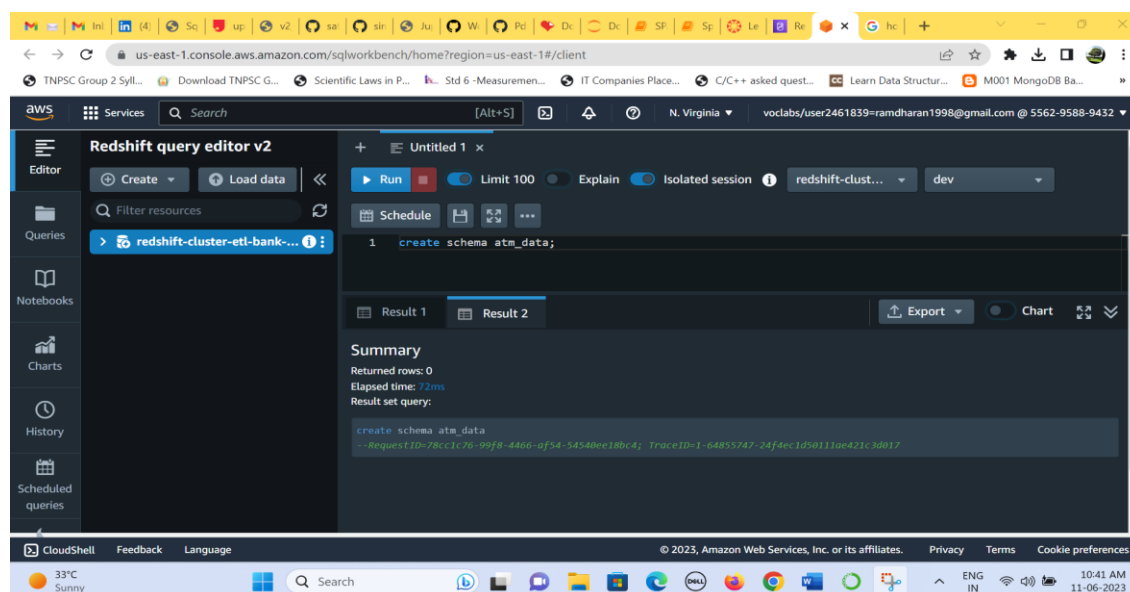




Setting up a database in the Redshift cluster and running queries to create the dimension and fact tables

Query for creating schema:

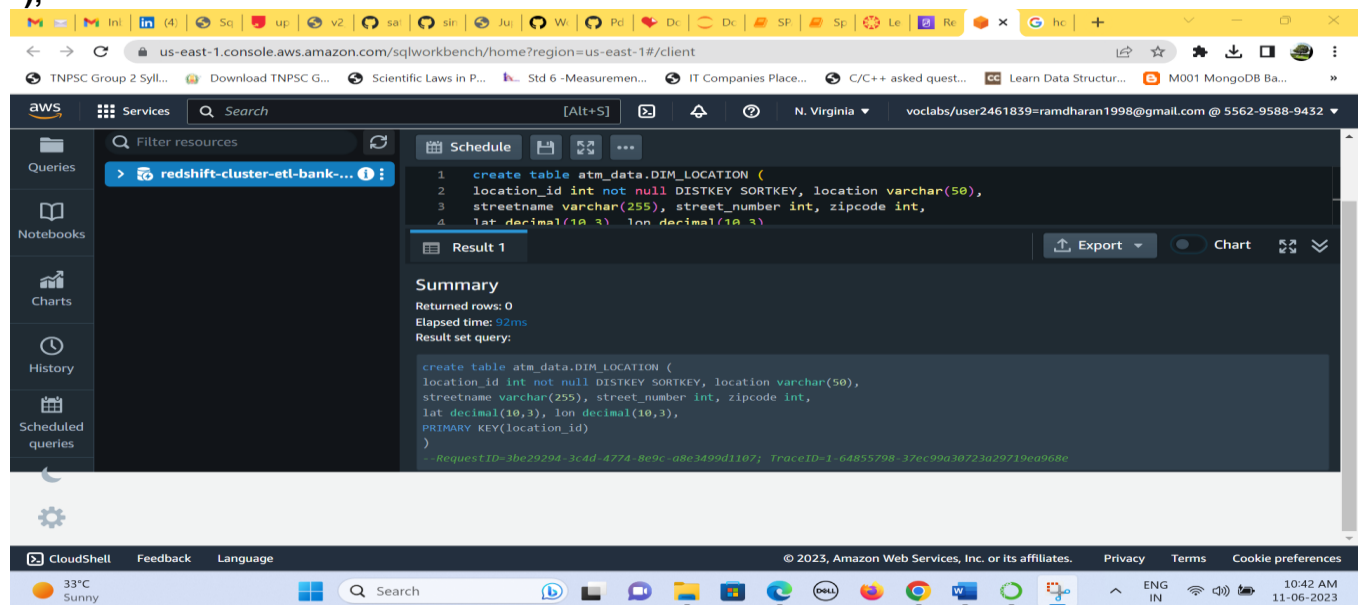
create schema atm\_data;



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

- Creating location dimension table

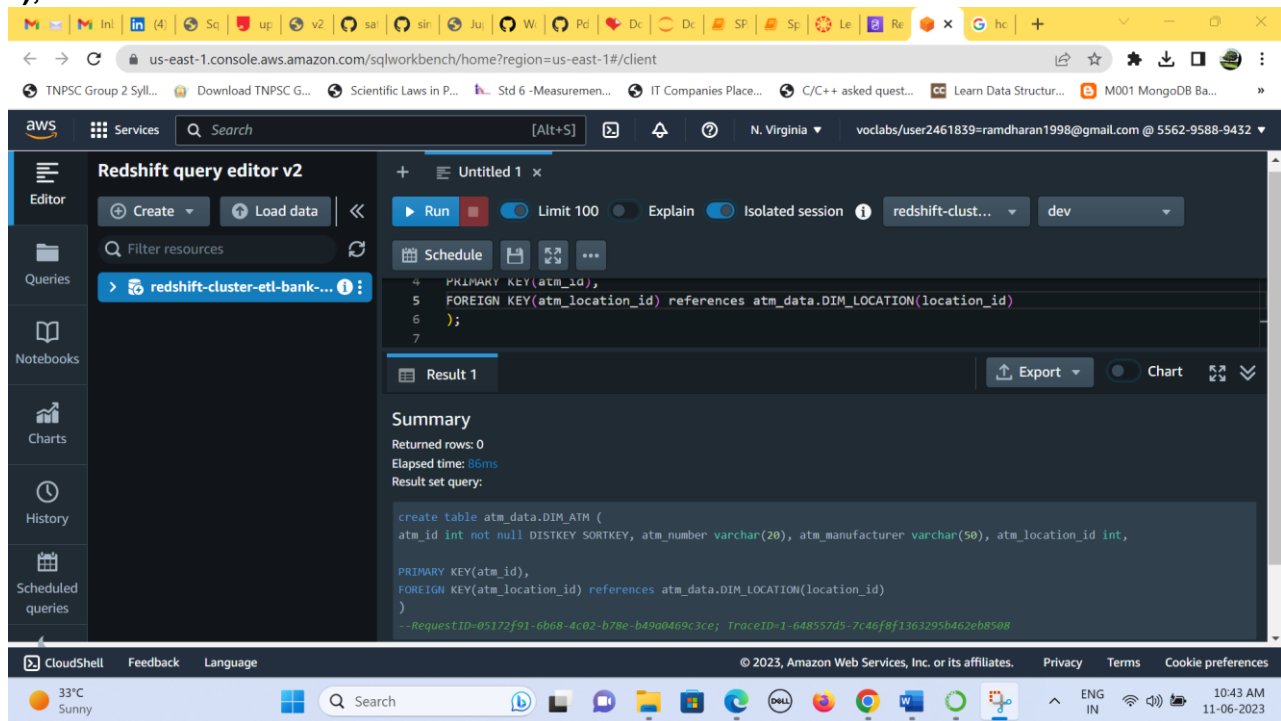
```
create table atm_data.DIM_LOCATION
(
  location_id int not null DISTKEY SORTKEY,
  location varchar(50),
  streetname varchar(255),
  street_number int,
  zipcode int,
  lat decimal(10,3),
  lon decimal(10,3),
  PRIMARY KEY(location_id)
);
```



- 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)  
);**

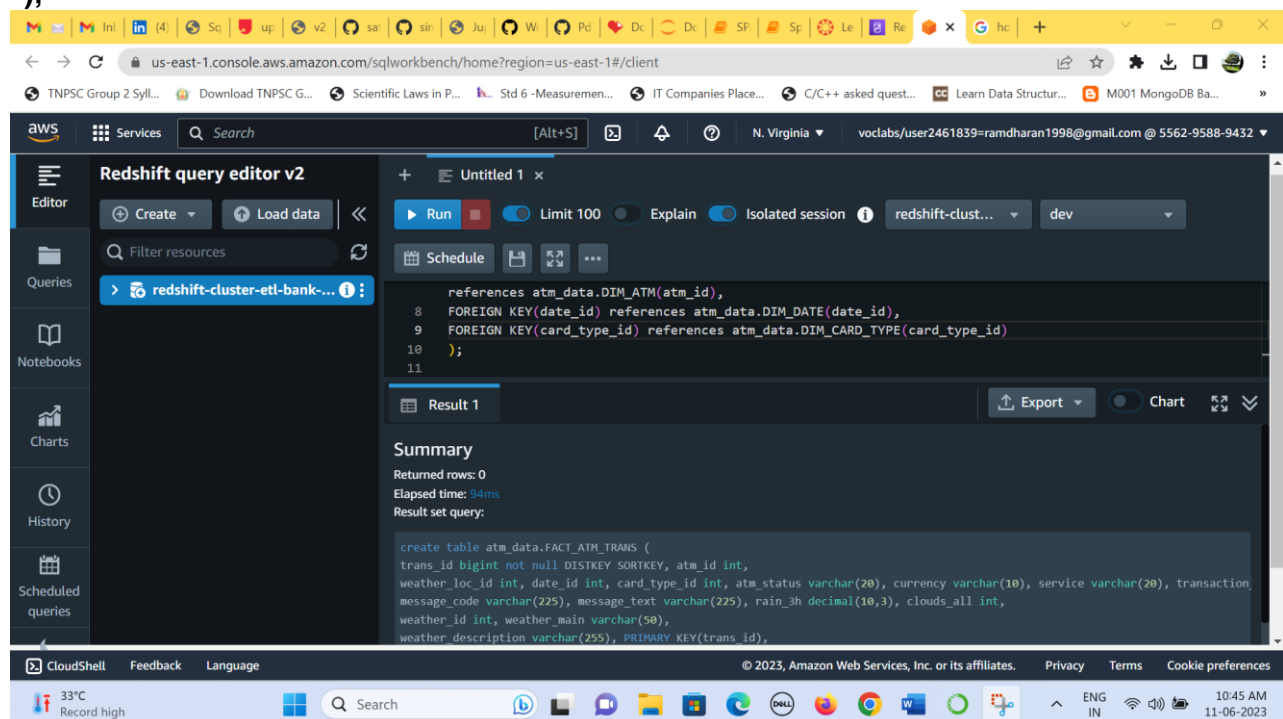


```
(
  card_type_id int not null DISTKEY SORTKEY,
  card_type varchar(30),
  PRIMARY KEY(card_type_id)
);
```



- 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)
);
```



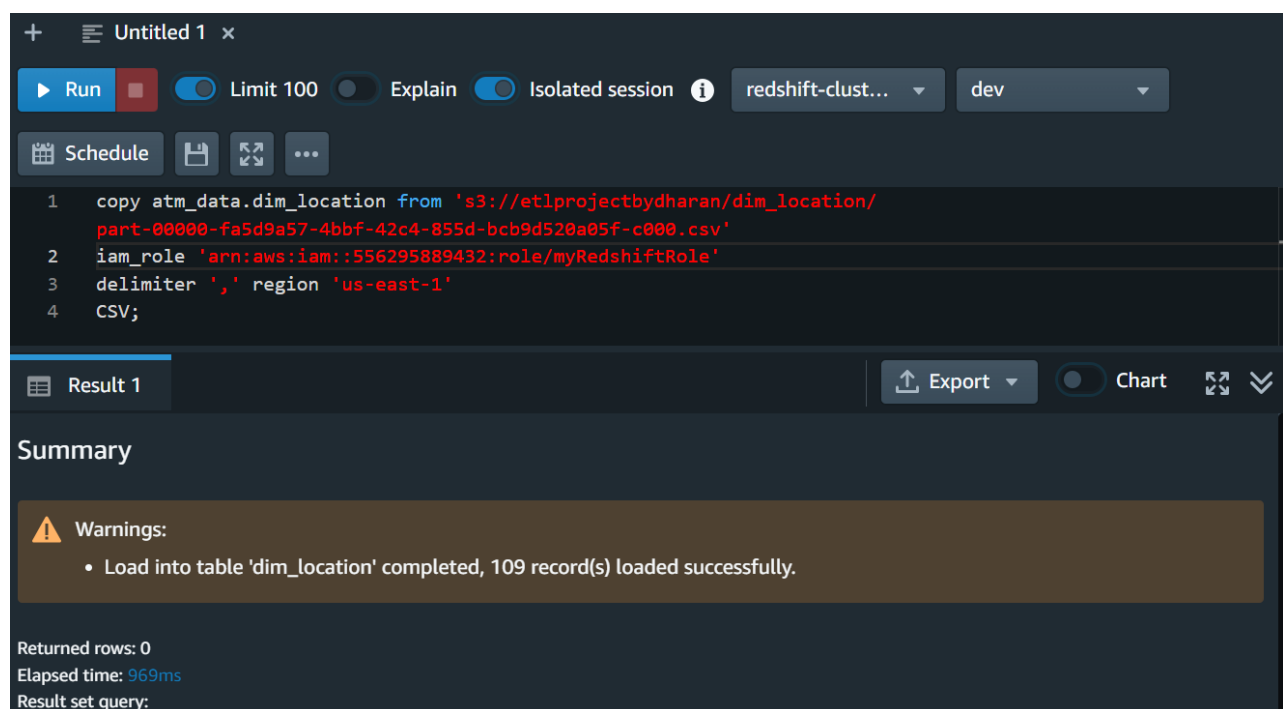
The screenshot shows the AWS Redshift Query Editor v2 interface. The SQL query is displayed in the editor, and the execution results are shown below. The query is a CREATE TABLE statement for 'atm\_data.FACT\_ATM\_TRANS' with various columns and constraints. The results section shows 'Result 1' with a summary of the query execution, including 'Returned rows: 0' and 'Elapsed time: 04ms'.

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://etlprojectbydharan/dim_location/part-00000-fa5d9a57-4bbf-42c4-855d-bcb9d520a05f-c000.csv'  
iam_role 'arn:aws:iam::556295889432:role/myRedshiftRole'  
delimiter ',' region 'us-east-1'  
CSV;
```



The screenshot shows a Redshift console interface with a query editor and a results section. The query editor contains the following SQL code:

```
1 copy atm_data.dim_location from 's3://etlprojectbydharan/dim_location/  
part-00000-fa5d9a57-4bbf-42c4-855d-bcb9d520a05f-c000.csv'  
2 iam_role 'arn:aws:iam::556295889432:role/myRedshiftRole'  
3 delimiter ',' region 'us-east-1'  
4 CSV;
```

The results section shows a warning message:

**Warnings:**

- Load into table 'dim\_location' completed, 109 record(s) loaded successfully.

Below the warning, the following information is displayed:

Returned rows: 0  
Elapsed time: 969ms  
Result set query:

- Copying the data to dim\_atm table

```
copy atm_data.dim_atm from 's3://etlprojectbydharan/dim_atm/part-00000-01d2fccb-c95a-4e7a-8940-97e34c84e96f-c000.csv'  
iam_role 'arn:aws:iam::556295889432:role/myRedshiftRole' delimiter ',' region 'us-east-1'  
CSV;
```

+
Untitled 1
x

Run
Limit 100
Explain
Isolated session
redshift-clust...
dev

Schedule

```

1 copy atm_data.dim_atm from 's3://etlprojectbydharan/dim_atm/
part-00000-01d2fccb-c95a-4e7a-8940-97e34c84e96f-c000.csv'
2 iam_role 'arn:aws:iam::556295889432:role/myRedshiftRole' delimiter ',' region 'us-east-1'
3 CSV;

```

Result 1
Export
Chart

Summary

Warnings:

- Load into table 'dim\_atm' completed, 156 record(s) loaded successfully.

#### • Copying the data to dim\_date table

```

copy atm_data.dim_date from 's3://etlprojectbydharan/dim_date/part-00000-f92eacad-
6174-4c1e-af8a-c1956f02fa32-c000.csv'
iam_role 'arn:aws:iam::556295889432:role/myRedshiftRole' delimiter ',' region 'us-east-1'
CSV
TIMEFORMAT 'auto';

```

+
Untitled 1
x

Run
Limit 100
Explain
Isolated session
redshift-clust...
dev

Schedule

```

1 copy atm_data.dim_date from 's3://etlprojectbydharan/dim_date/
part-00000-f92eacad-6174-4c1e-af8a-c1956f02fa32-c000.csv'
2 iam_role 'arn:aws:iam::556295889432:role/myRedshiftRole' delimiter ',' region 'us-east-1'
3 CSV
4 TIMEFORMAT 'auto';

```

Result 1
Export
Chart

Summary

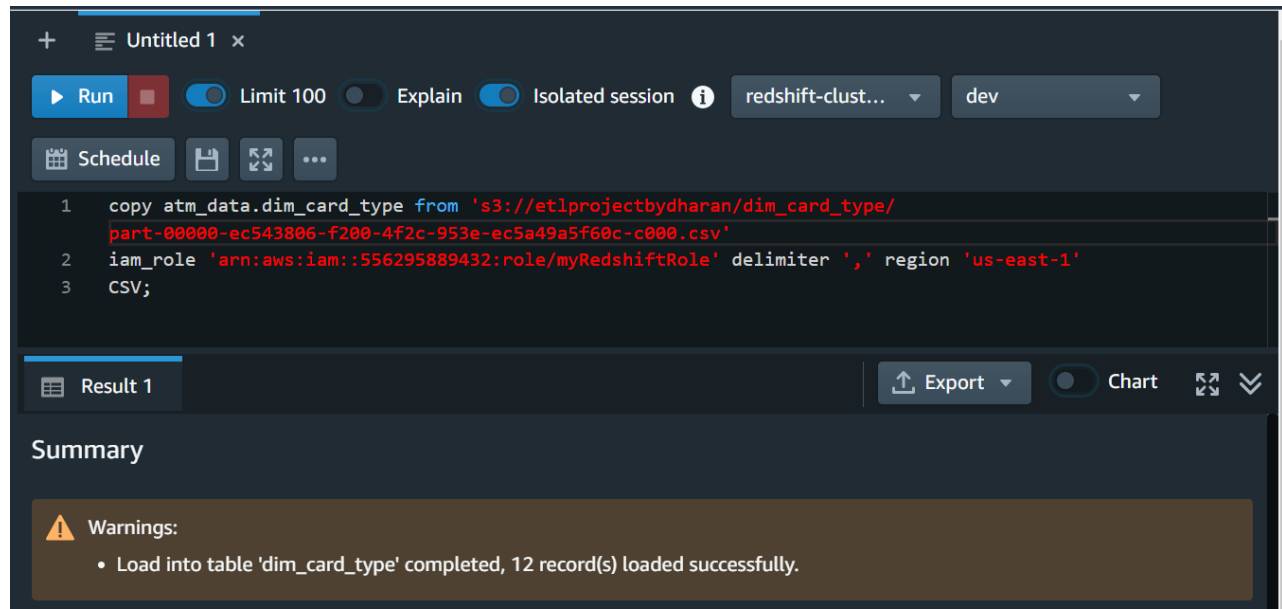
Warnings:

- Load into table 'dim\_date' completed, 8685 record(s) loaded successfully.



### • Copying the data to dim\_card\_type table

```
copy atm_data.dim_card_type from 's3://etlprojectbydharan/dim_card_type/part-00000-ec543806-f200-4f2c-953e-ec5a49a5f60c-c000.csv'
iam_role 'arn:aws:iam::556295889432:role/myRedshiftRole' delimiter ',' region 'us-east-1'
CSV;
```



The screenshot shows the AWS Redshift console interface. At the top, there's a toolbar with buttons for 'Run', 'Limit 100', 'Explain', 'Isolated session', and a dropdown for 'redshift-clust...'. Below the toolbar, the SQL command is entered in a text area:

```
1 copy atm_data.dim_card_type from 's3://etlprojectbydharan/dim_card_type/
2 part-00000-ec543806-f200-4f2c-953e-ec5a49a5f60c-c000.csv'
3 iam_role 'arn:aws:iam::556295889432:role/myRedshiftRole' delimiter ',' region 'us-east-1'
4 CSV;
```

Below the command, there's a 'Result 1' tab and an 'Export' button. The 'Summary' section shows a warning icon and the message: 'Load into table 'dim\_card\_type' completed, 12 record(s) loaded successfully.'

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

```
copy atm_data.fact_atm_trans from 's3://etlprojectbydharan/fact_atm_trans/part-00000-2a838e86-03c6-4a12-bba1-73cc581498fa-c000.csv'
iam_role 'arn:aws:iam::556295889432:role/myRedshiftRole' delimiter ',' region 'us-east-1'
CSV;
```

+

Untitled 1 x

▶ Run

☒ Limit 100

☐ Explain

☒ Isolated session ⓘ

redshift-clust... ▾

dev ▾

📅 Schedule

📄

↕

⋮

```
1 copy atm_data.fact_atm_trans from 's3://etlprojectbydharan/fact_atm_trans/
2 part-00000-2a838e86-03c6-4a12-bba1-73cc581498fa-c000.csv'
3 iam_role 'arn:aws:iam::556295889432:role/myRedshiftRole' delimiter ',' region 'us-east-1'
   CSV;
```

📊 Result 1

⬆ Export ▾

☐ Chart

⌕

⌵

Summary

⚠ Warnings:

- Load into table 'fact\_atm\_trans' completed, 2468572 record(s) loaded successfully.