Snowflake Foundation Experiments 1-10
Overview

This series of experiments introduces you to the user interface and capabilities of Snowflake, and is designed specifically for use with the Snowflake, free 30-day trial at https://trial.snowflake.com. When done with the experiment you will be ready to load your own data into Snowflake and use its more advanced capabilities.

Target Audience

Database and Data Warehouse Administrators and Architects

What you'll learn

The tasks in this series of experiments will walk you through the steps to:

- Create stages, databases, tables, views, and warehouses
- Load structured and semi-structured data
- Query data including joins between tables
- Clone objects
- Undo user errors
- Create roles and users, and grant them privileges
- Securely and easily share data with other accounts

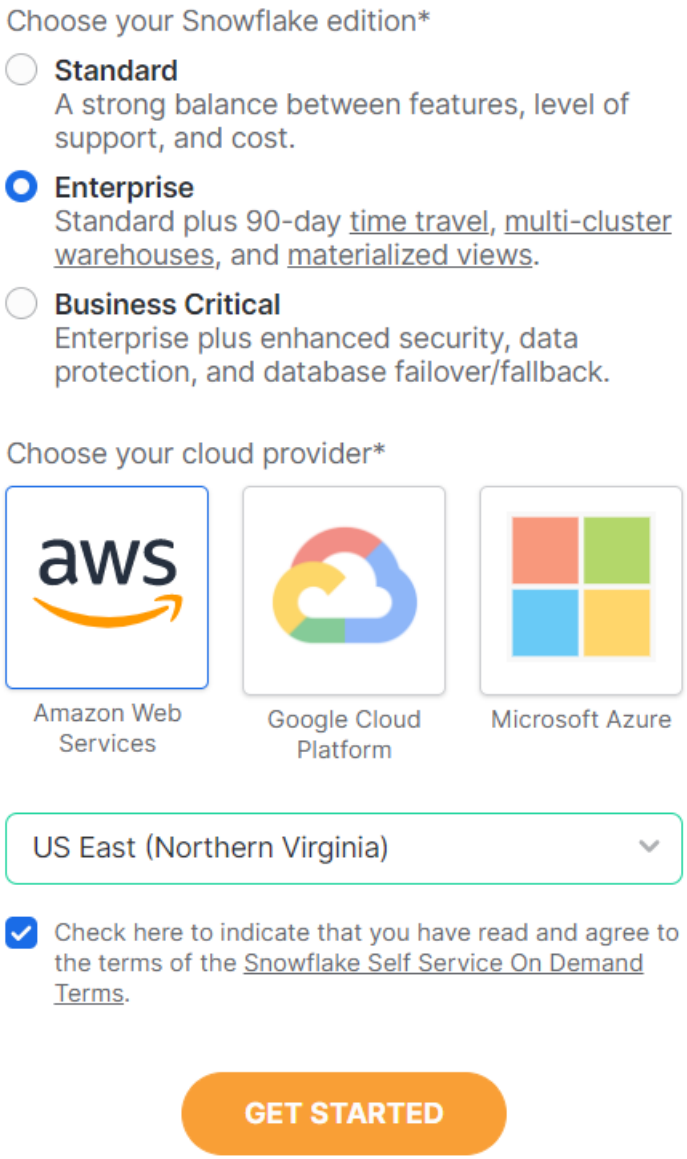
Remember that these experiments are for your benefit. Like TSA, if you see something, say something. We want to make sure that you have the best experience possible in this session and with these experiments. Thank you for active participation. 😊

Experiment 1: Snowflake Foundation

1.1 Steps to Prepare Your Experiment Environment

1.1.1 If not yet done, register for a Snowflake free 30-day trial at https://trial.snowflake.com. This is outlined in the Experiment 00-Getting-Started, as well. Remember that if you are in a China location you will have to be in VPN to another region, Hong Kong office or other to be able to successfully provision your Snowflake account.

- We chose the following
    - Snowflake edition – Enterprise
    - Snowflake cloud provider – AWS
    - Region – Northern Virginia – US EAST

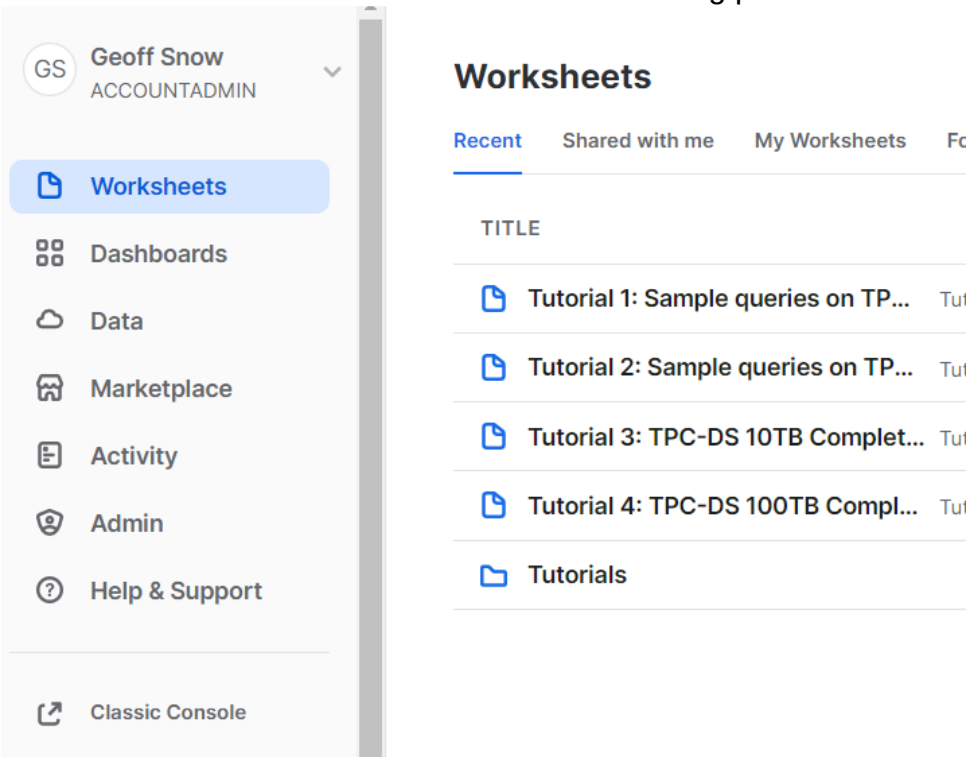


- After registering, you will receive an email with an activation link and your Snowflake account URL. Bookmark this URL for easy, future access. After activation, you will create a user name and password. Write down these credentials. If you forget your URL you can always login through **https://app.snowflake.com/**

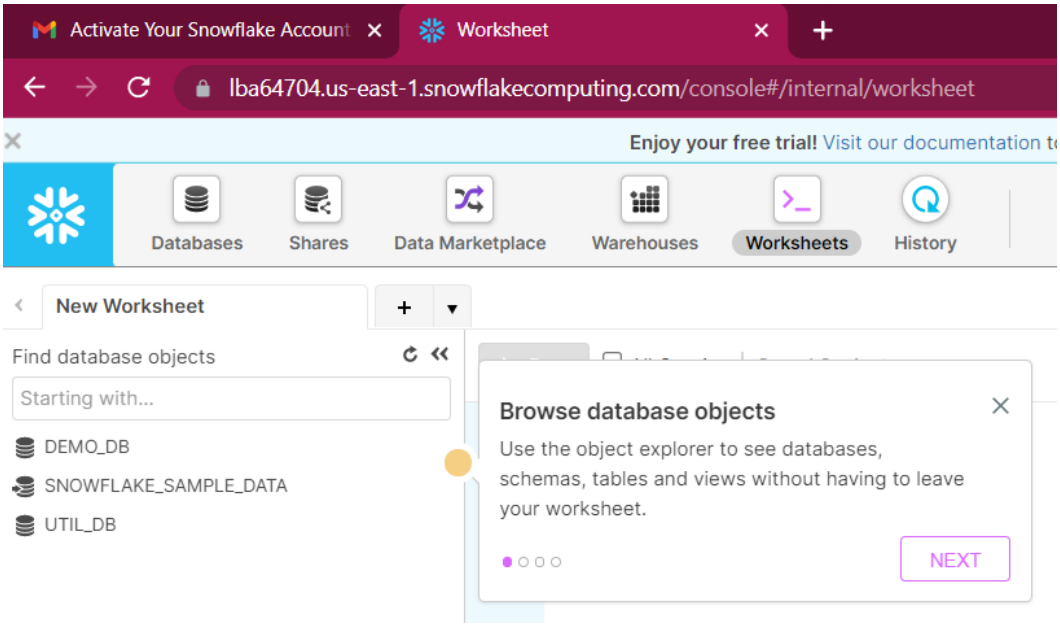
1.1.2 Resize your browser windows so you can view this experiment guide PDF and your web browser side-by-side to more easily follow the experiment instructions. If possible, use a secondary display dedicated to the experiment guide.

1.1.3 Open your snowflake environment, remember this is SaaS so you'll be logging into the Snowflake Management console application. Optimistically you bookmarked that account link but you can navigate to the login from **snowflakecomputing.com**, as well.

1.1.4 Select Classic Console in the lower left hand dialog pane view

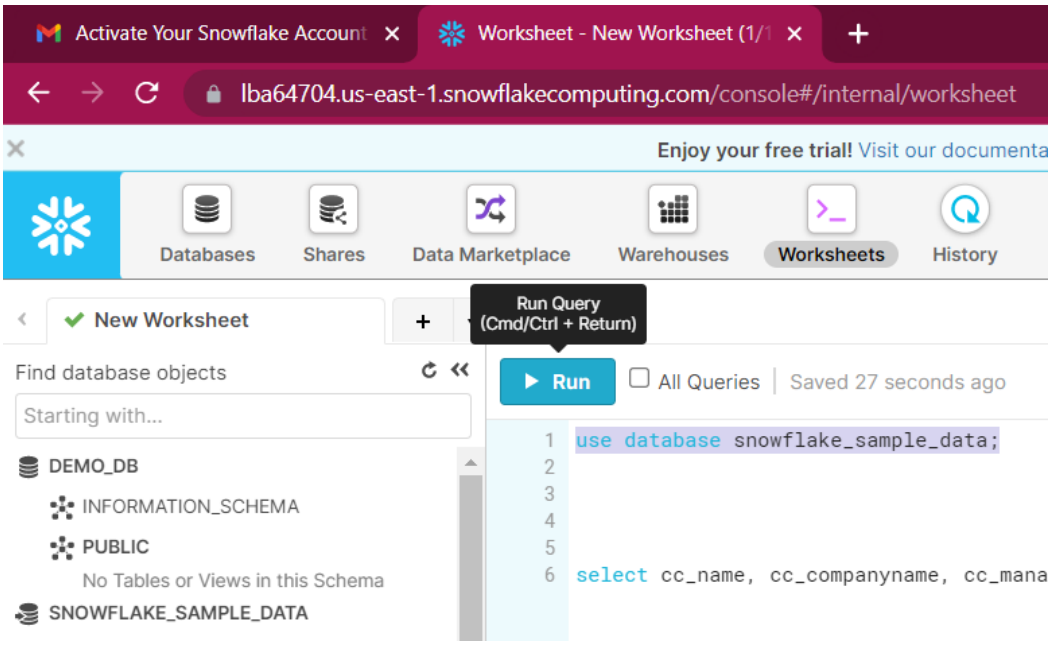


1.1.5 We'll select Worksheets from the navigation to do a little initial exploration

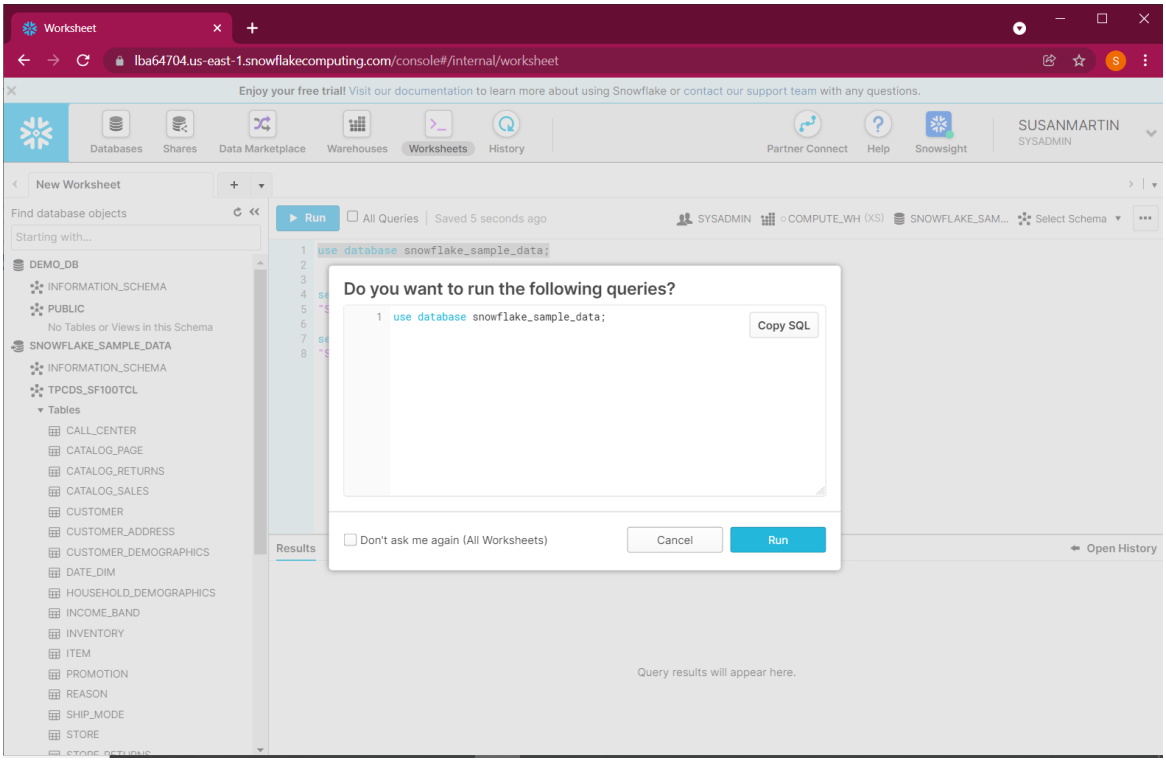


1.1.6 To use a database, we'll enter the SQL command

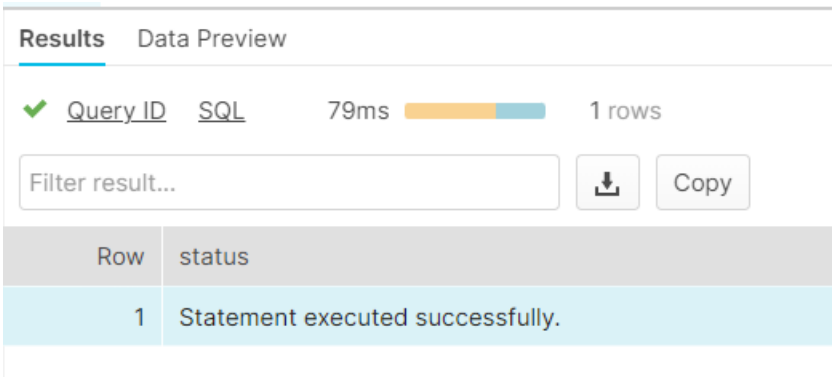
- `use database snowflake_sample_data;`



1.1.7 To execute the command we highlight the line of SQL and select the **Run** button



1.1.8 Selecting **Run** again in the dialog presented allows us to execute the SQL command. We could also have any further command automatically executed from the worksheet on Run without the additional dialog by check the **Don't ask me again** box.



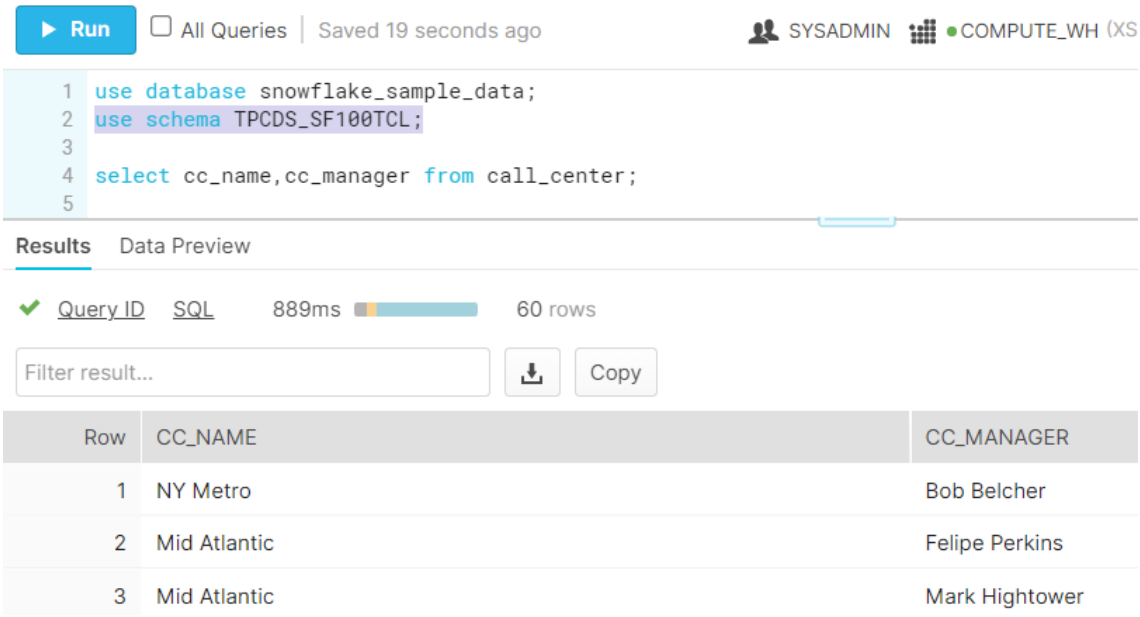
1.1.9 We can then select the schema for our worksheet session by entering the SQL command

```
use schema TPCDS_SF100TCL;
```

1.1.10 Highlight that SQL, and select Run to execute our choice of schema at that point we can run queries that don't have the database and schema qualifiers like

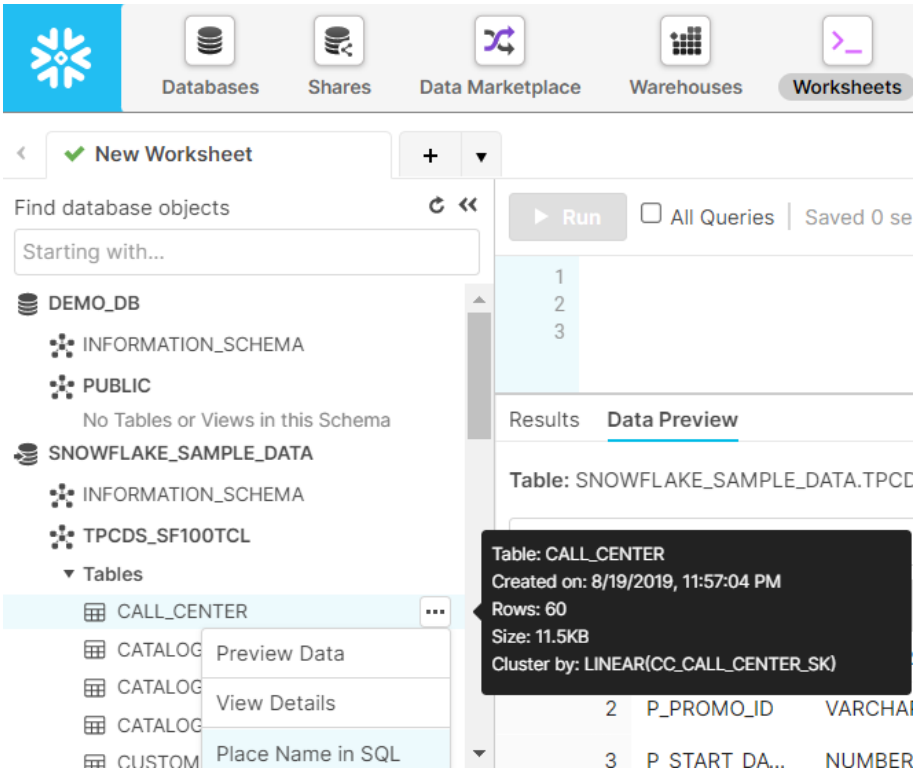
```
select cc_name,cc_manager from call_center;
```

1.1.11 Highlighting that SQL and running it shows us the results

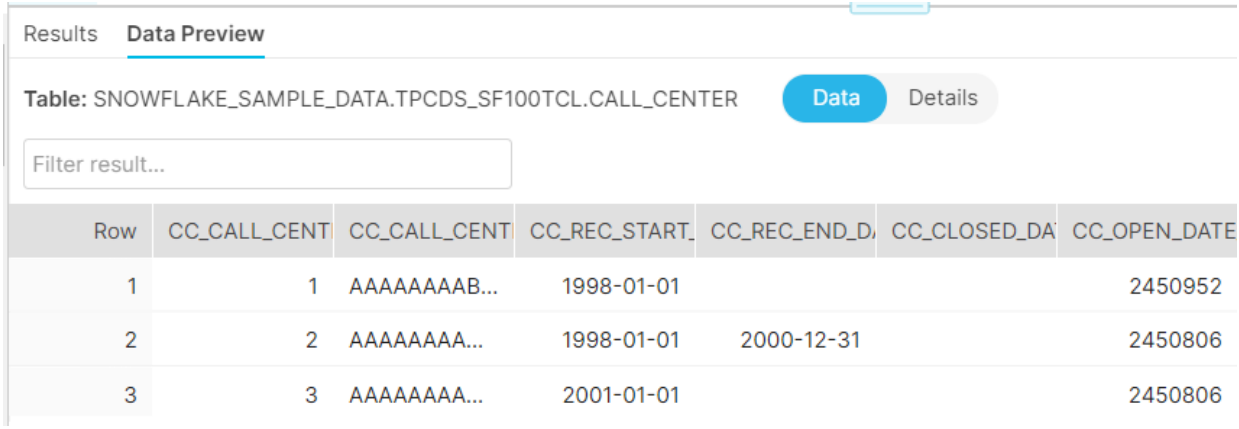


Row	CC_NAME	CC_MANAGER
1	NY Metro	Bob Belcher
2	Mid Atlantic	Felipe Perkins
3	Mid Atlantic	Mark Hightower

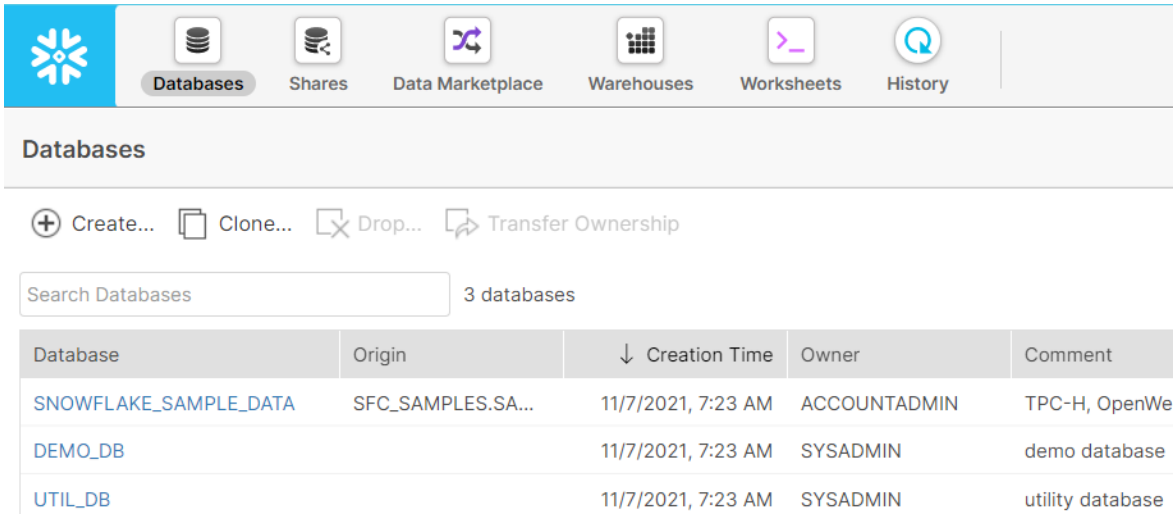
1.1.12 Next, we'll expand the Tables under the SNOWFLAKE_SAMPLE_DATA database and TPCDS_SF100TCL schema. Select the ellipses **…** next to the CALL_CENTER table name and choose **Preview Data**



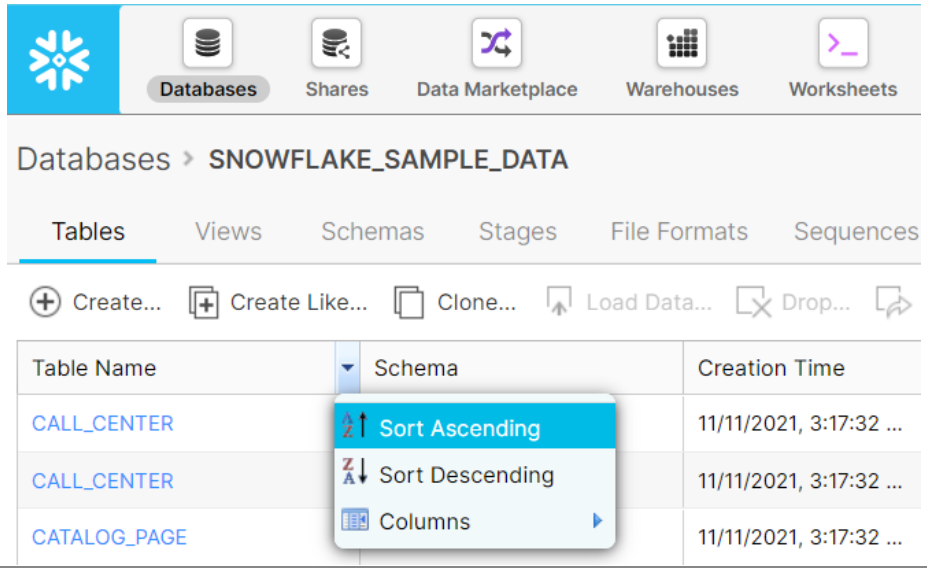
1.1.13 That displays the preview of the data in the CALL_CENTER table



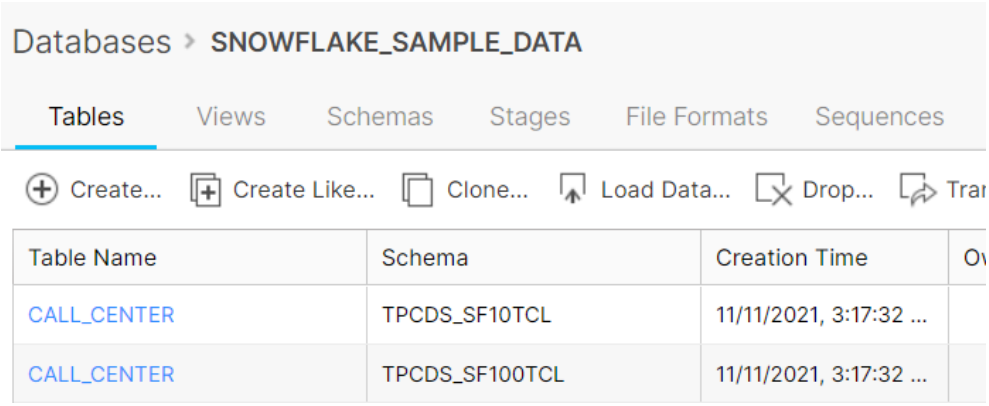
1.1.14 Next we'll select the Databases view icon in the top level navigation. This displays the top-level details for the three databases in our Trial Account.



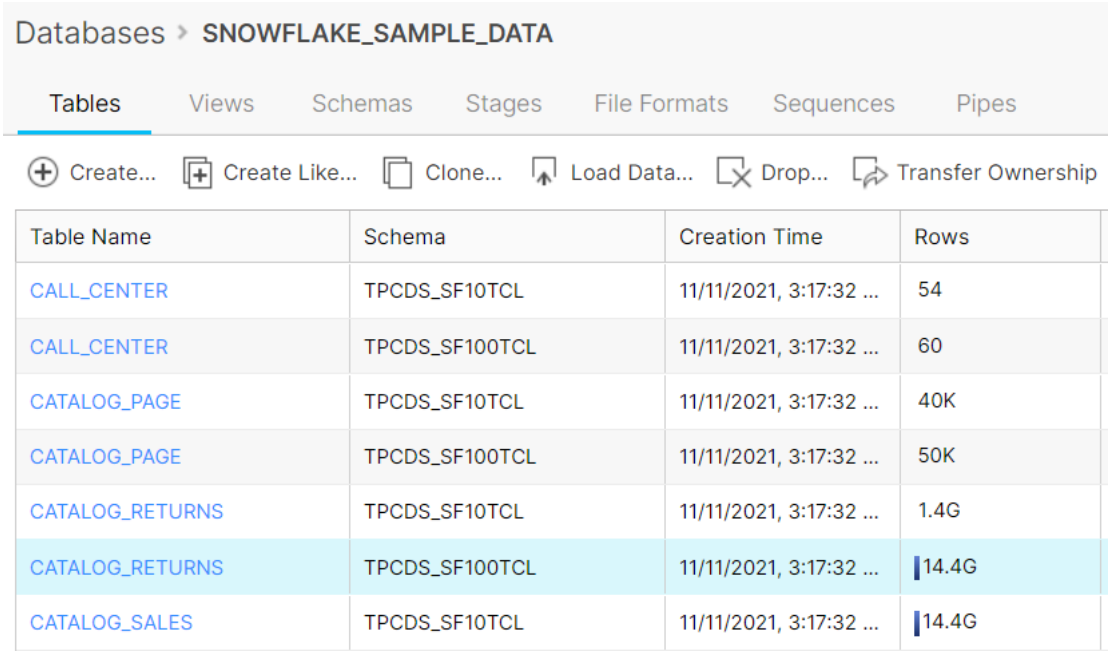
1.1.15 Select the SNOWFLAKE_SAMPLE_DATA under the Database column. Then select the Table column header Sort by Ascending



1.1.16 We notice that we have two CALL_CENTER tables, and looking further that they're in different schemas (although the names are very similar). In our worksheet we've been using the **`TPCDS_SF100TCL`** schema.

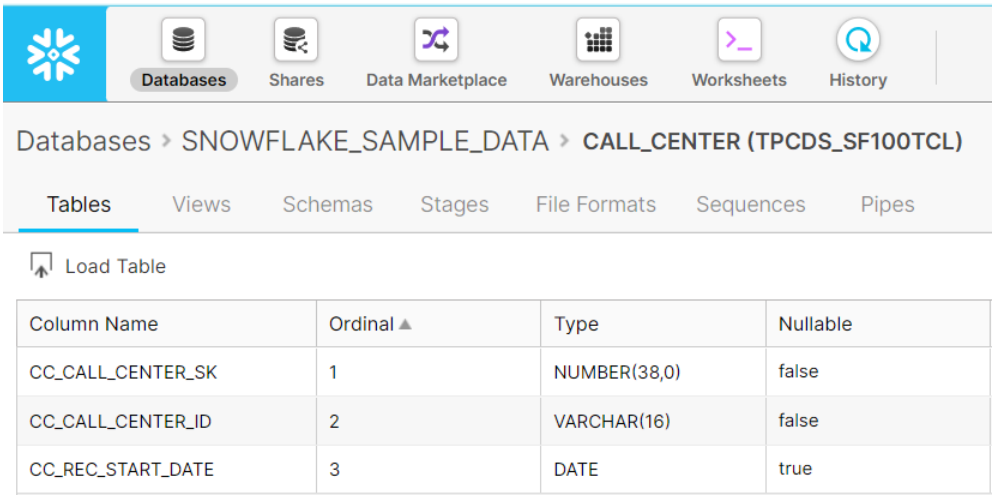


1.1.17 Notice that we have only 60 Rows in our CALL_CENTER table, but there are tables with significantly more like CATALOG_SALES with more than 14 billion rows. You'll also notice that we have those noted in G for Billions.



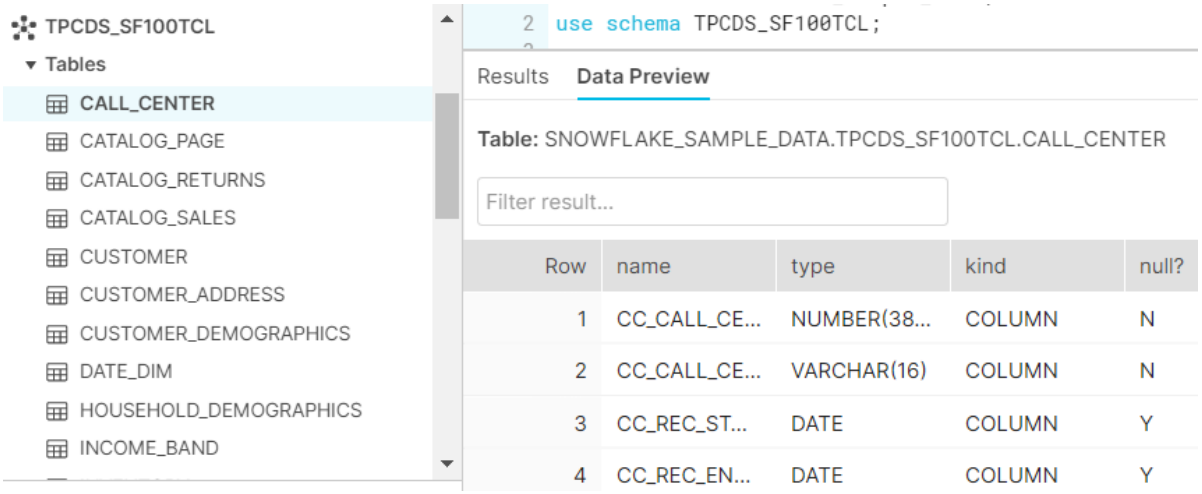
Query execution
Queries will fail when there are syntax issues. That's a good thing, since when we break things we learn from that experience. When that occurs don't hesitate to correct and try again or ask for help.

1.1.18 Select the CALL_CENTER Table Name for the TPCDS_SF100TCL schema. This will show us the details of that table as shown.

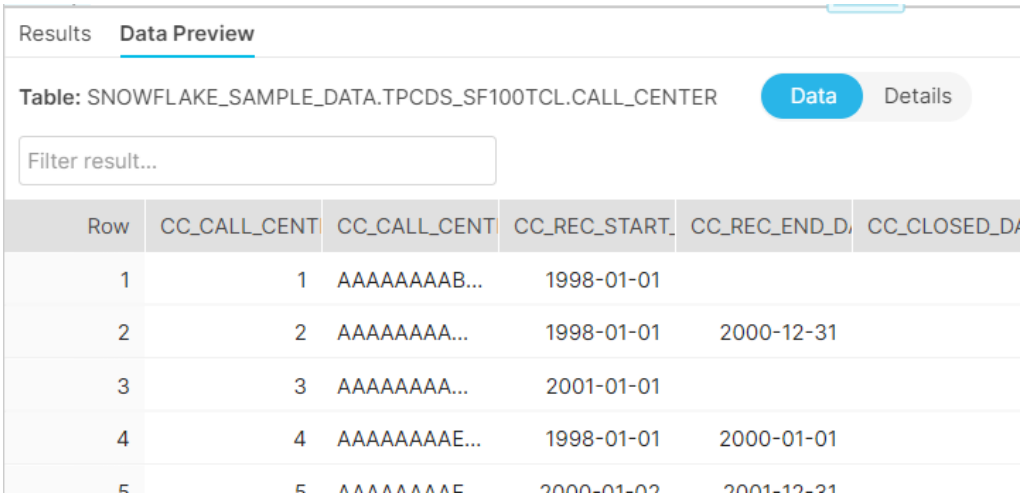


Column Name	Ordinal ▲	Type	Nullable
CC_CALL_CENTER_SK	1	NUMBER(38,0)	false
CC_CALL_CENTER_ID	2	VARCHAR(16)	false
CC_REC_START_DATE	3	DATE	true

1.1.19 Navigate back to the Worksheets view. From there, select the ellipses for CALL_CENTER and choose **View Details**. The following view is shows noting the column details for the table.

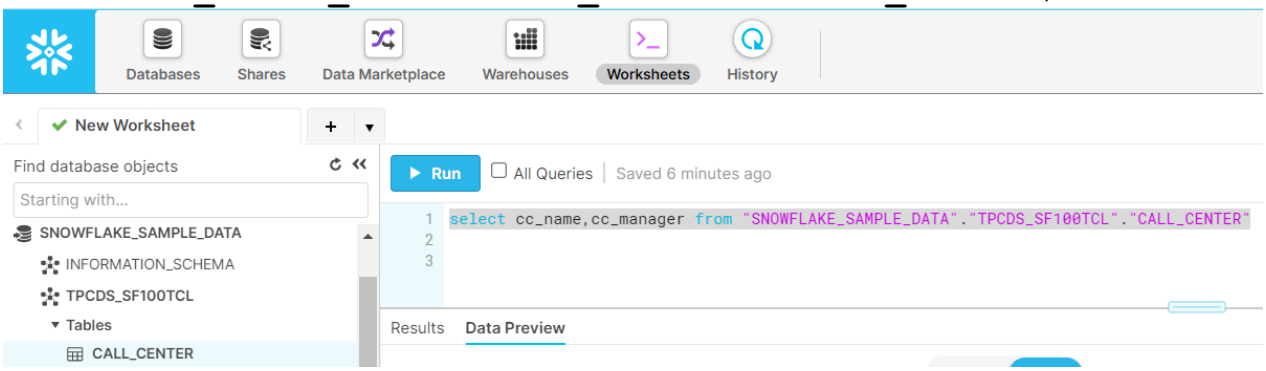


1.1.20 Notice that there is a slider for Data Details in the Data Preview pane. Change the slide to **Data** from Details. Note the preview of the data in the CALL_CENTER table.

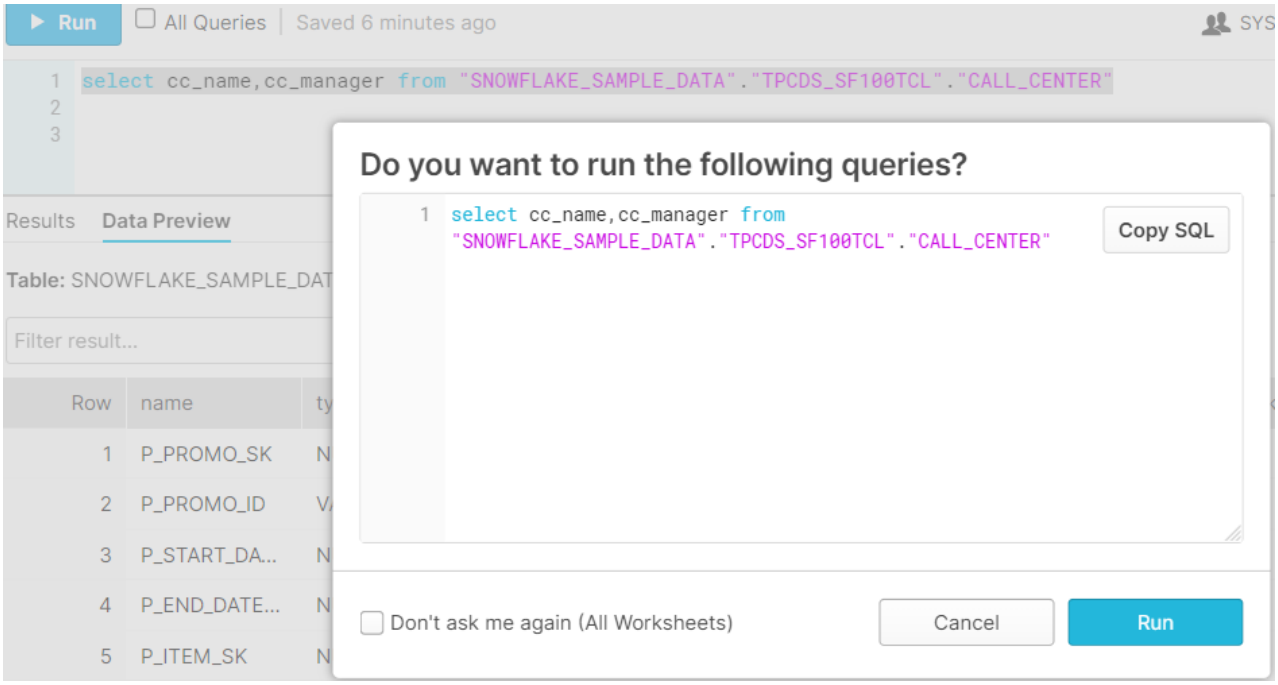


1.1.21 Now enter the following fully qualified SQL statement

```
select cc_name,cc_manager from
"SNOWFLAKE_SAMPLE_DATA"."TPCDS_SF100TCL"."CALL_CENTER";
```

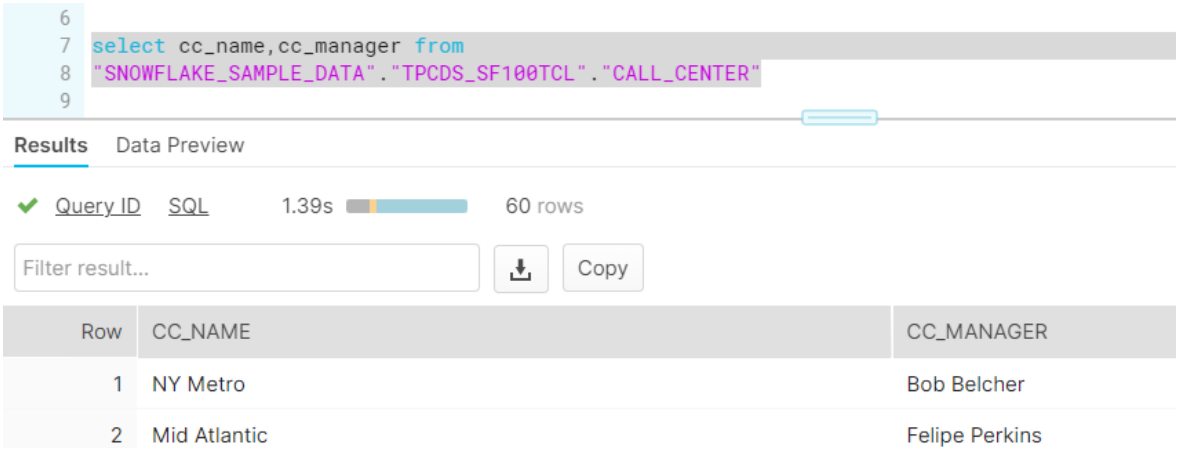


1.1.22 Select/highlight the SQL and choose Run.

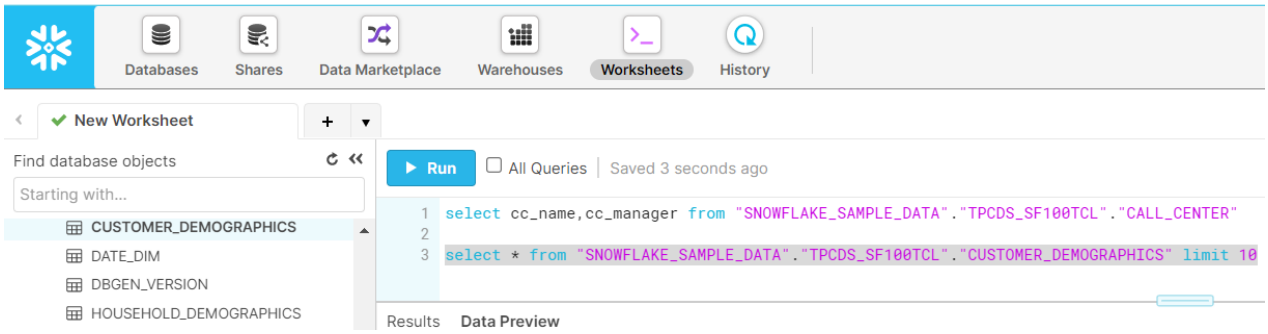


Don't ask me again
Since this is an experimental environment we normally suggest you don't check this box, but that's up to you.

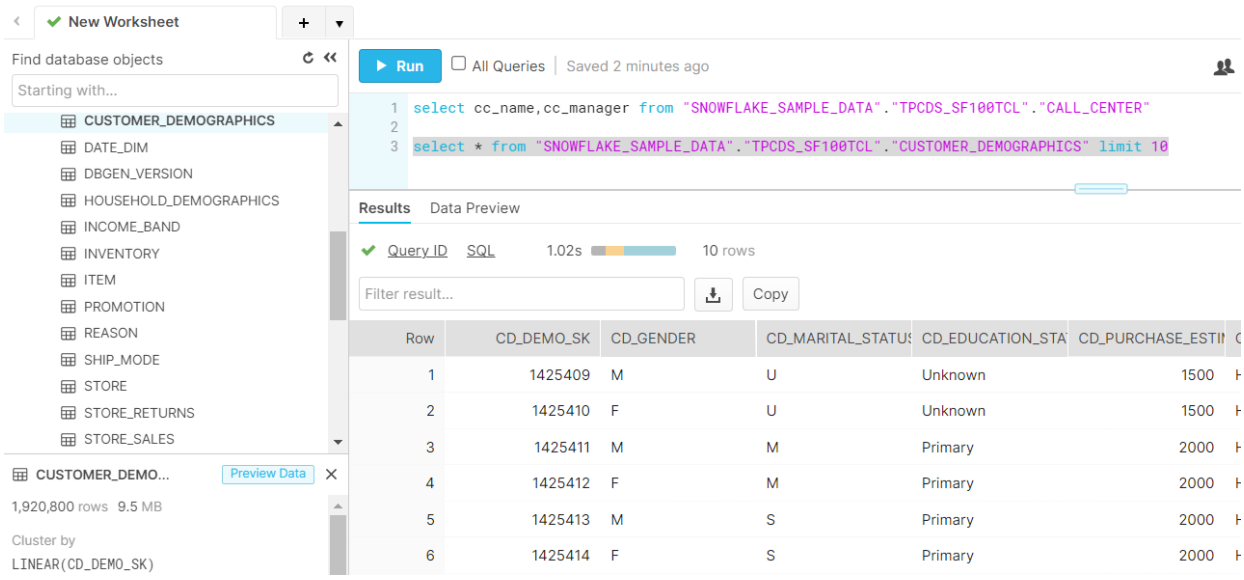
1.1.23 This shows us the output data from our query in the details pane.



1.1.24 Now we'll run another query from a different table to make use of the limit, which returns only the number of rows that we specify.



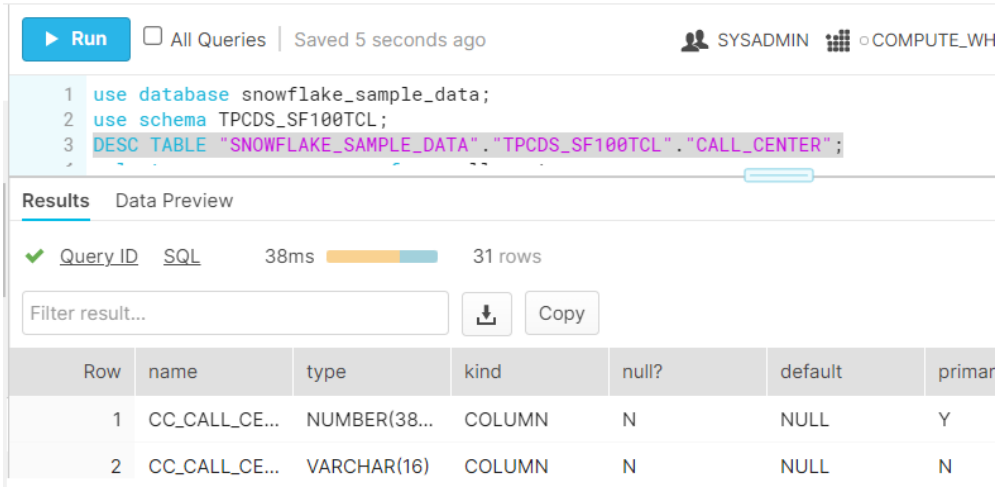
1.1.25 Notice that the returned details only show 10 of the nearly 2M rows in the CUSTOMER_DEMOGRAPHICS table.



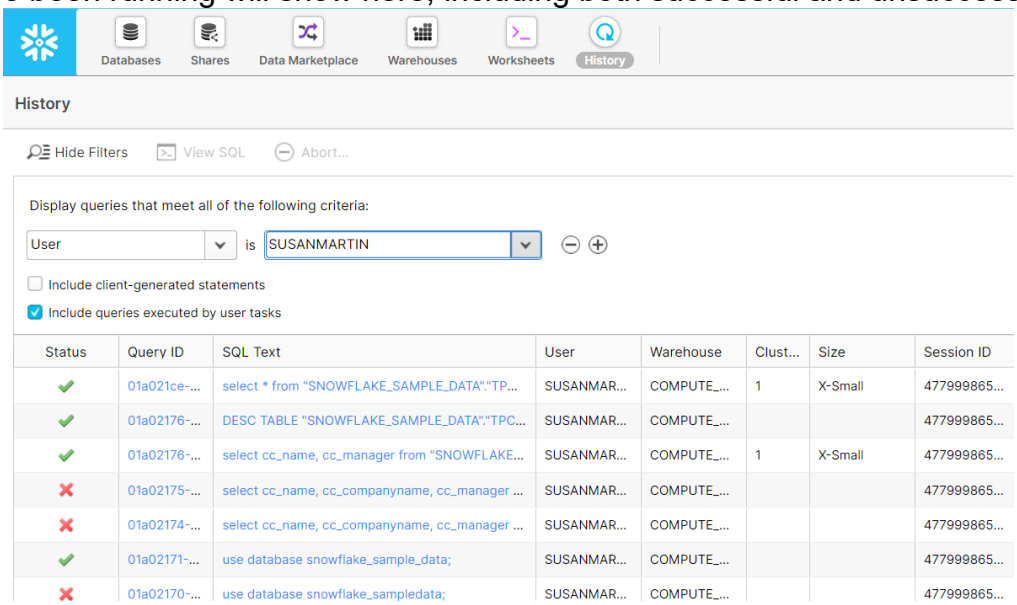
1.1.26 Now we'll use another command to show us a view of the table description, now as the Describe command or Desc for short. Enter the following SQL statement, highlight it and choose Run

```
DESC TABLE
"SNOWFLAKE_SAMPLE_DATA"."TPCDS_SF100TCL"."CALL_CENTER";
```

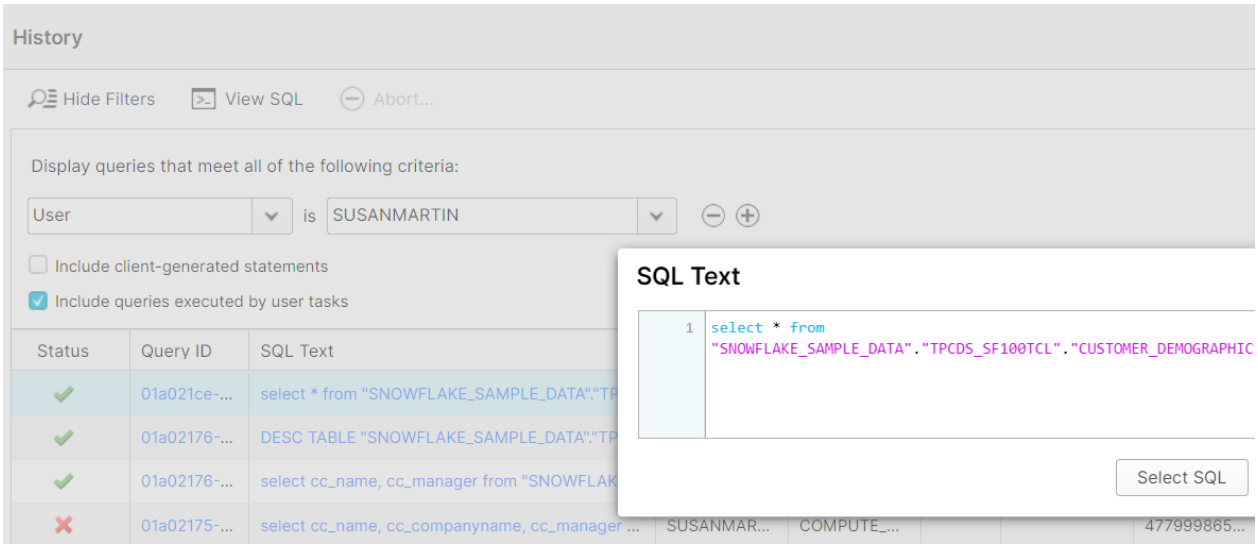
1.1.27 Notice this shows us yet another view of the CALL_CENTER table details.



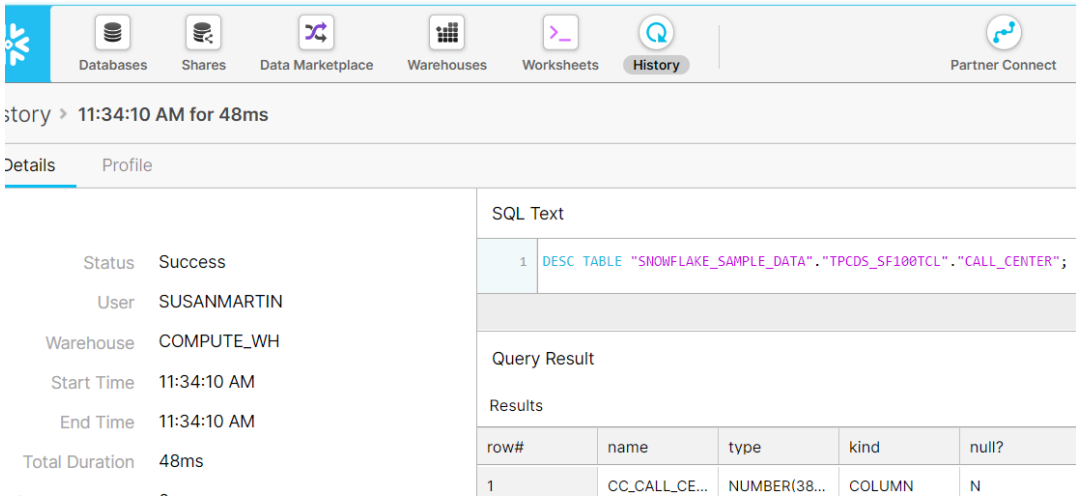
1.1.28 Next we'll select the History tab of from the top level navigation. Notice that the queries we've been running will show here, including both successful and unsuccessful queries.



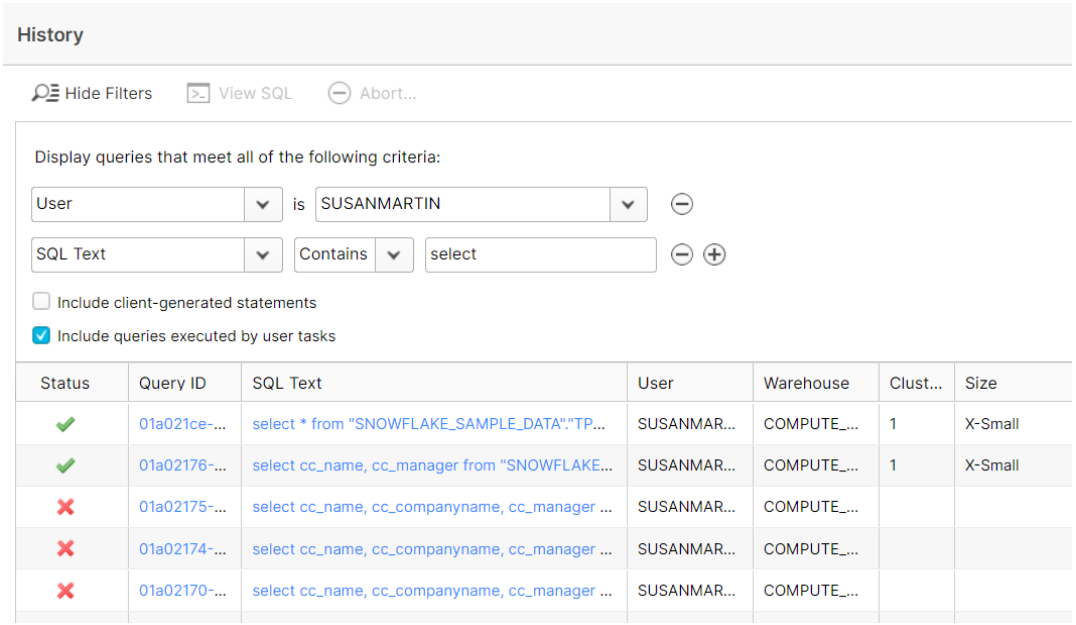
1.1.29 Choosing the SQL Text value from one of the entries shows us the SQL statement or command that was run.



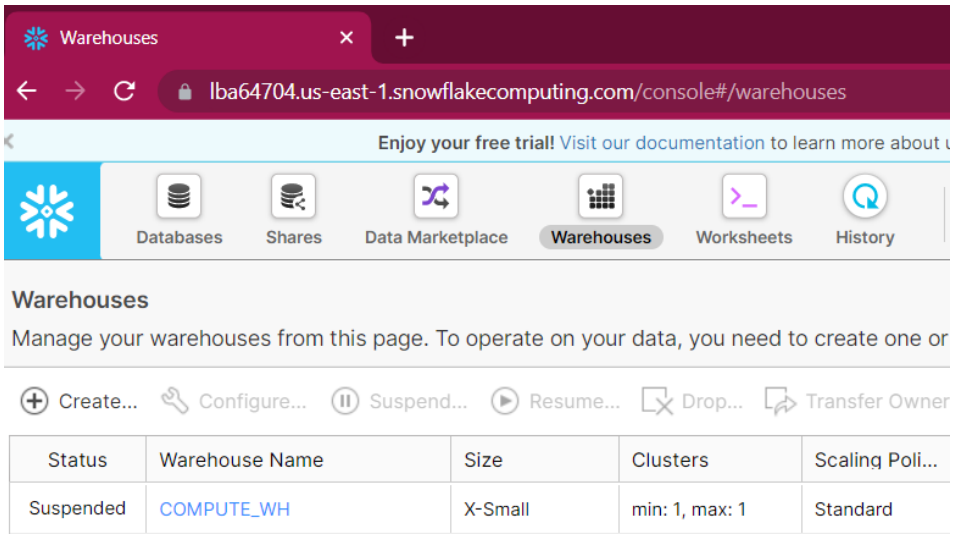
1.1.30 Selecting the Query ID value for one of the entries shows us the details of the statement execution as noted below.



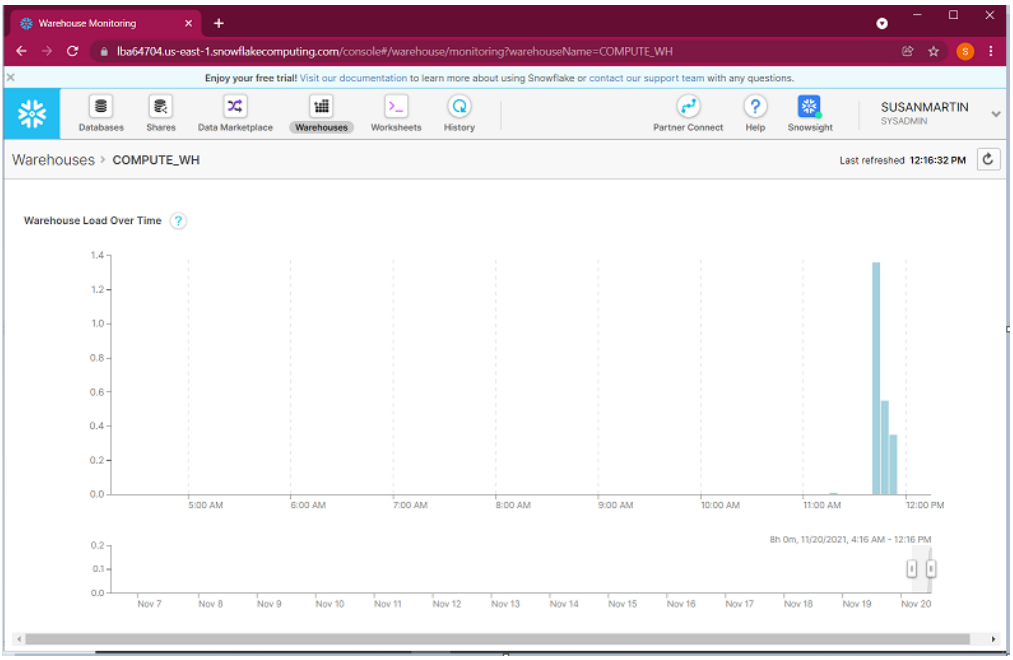
1.1.31 Note that if we have a significant number of queries we may want to add a filter condition, other than the default that is automatically added by User as shown. Add a 2nd query filter condition by clicking the **+** sign, choosing **SQL Text**, **Contains** and entering the value **select**. Notice that now only select statements are visible in our history.



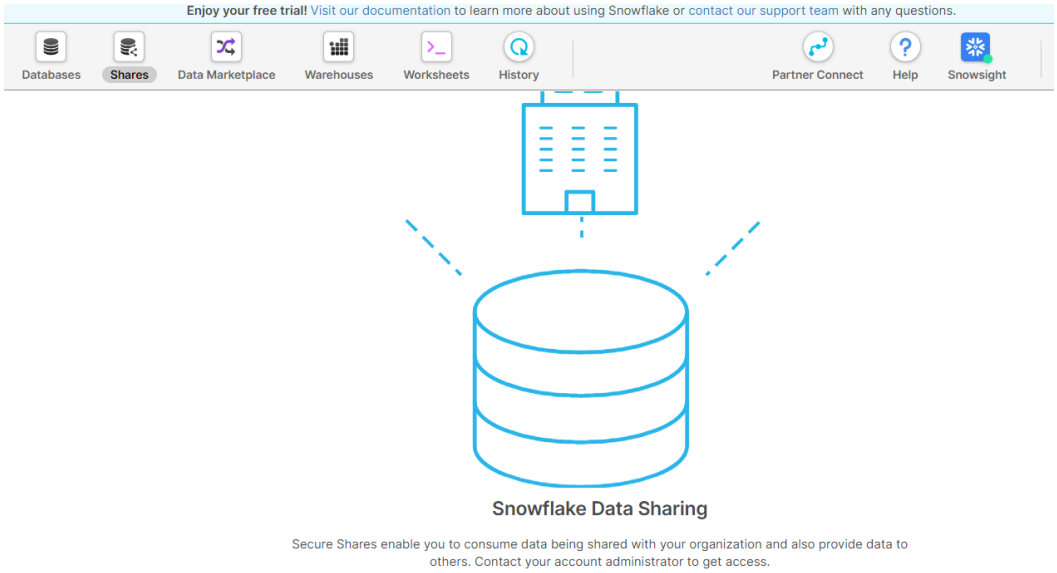
1.1.32 Select the Warehouses tab from the top level navigation.



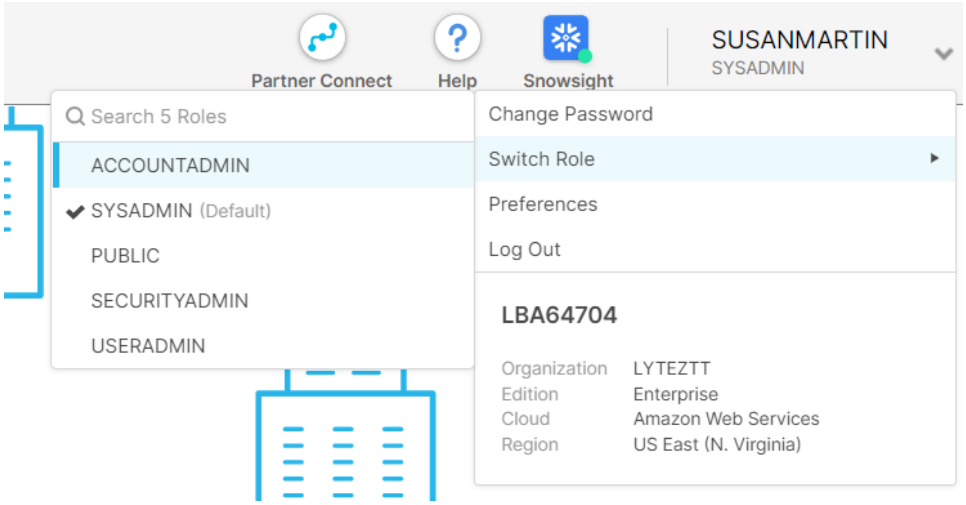
1.1.33 Choose the COMPUTE_WH under Warehouse Name. Note that this will show usage graph details for our warehouse.



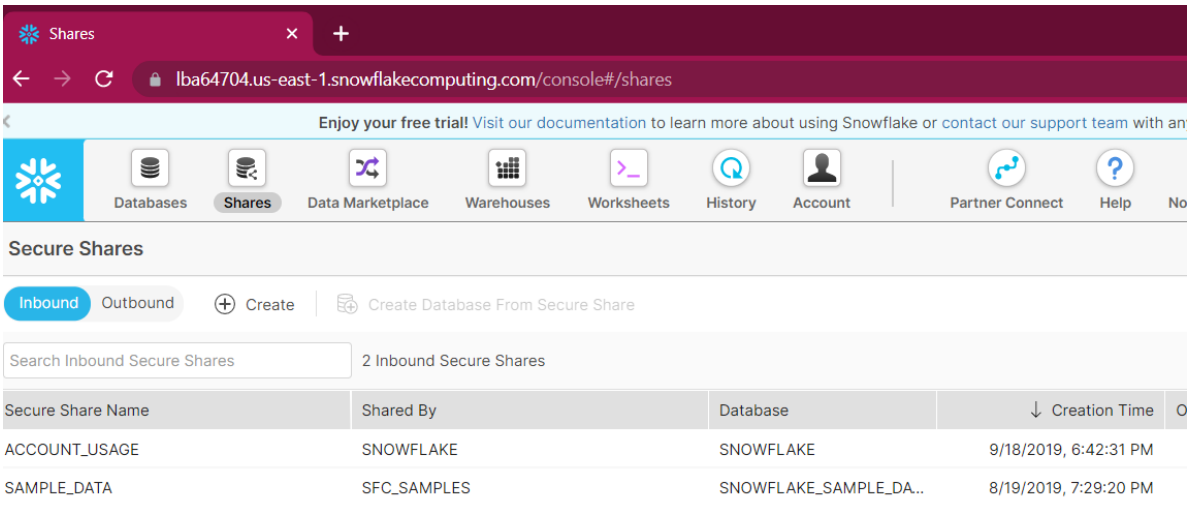
1.1.34 Next, select Shares from the top level navigation. Notice that we don't actually have rights to do that when we're the SYSADMIN role.



1.1.35 Select the  by the USERNAME, then choose **Switch Role** to **ACCOUNTADMIN**.



1.1.36 Notice that now we'll be able to view the Shares pane as shown.



1.1.37 Lastly, we'll download the **foundation_experiment_scripts.sql** from the course GitHub experiments folder to your local machine. This file contains pre-written SQL commands and we will use this file later in our Snowflake Foundation experiment group.