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

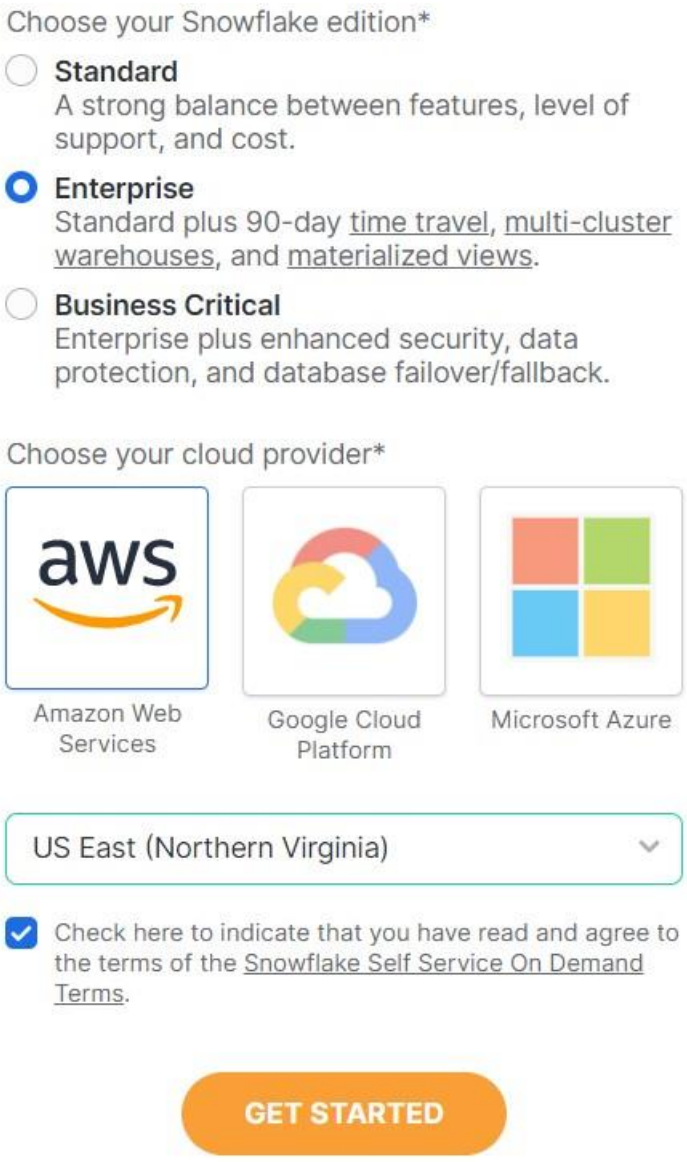
Remember that these experiments are for your benefit. Like TSA, if you see something, say something. We want to make sure that you have the best experience possible in this session and with these experiments. Thank you for active participation. 😊

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.

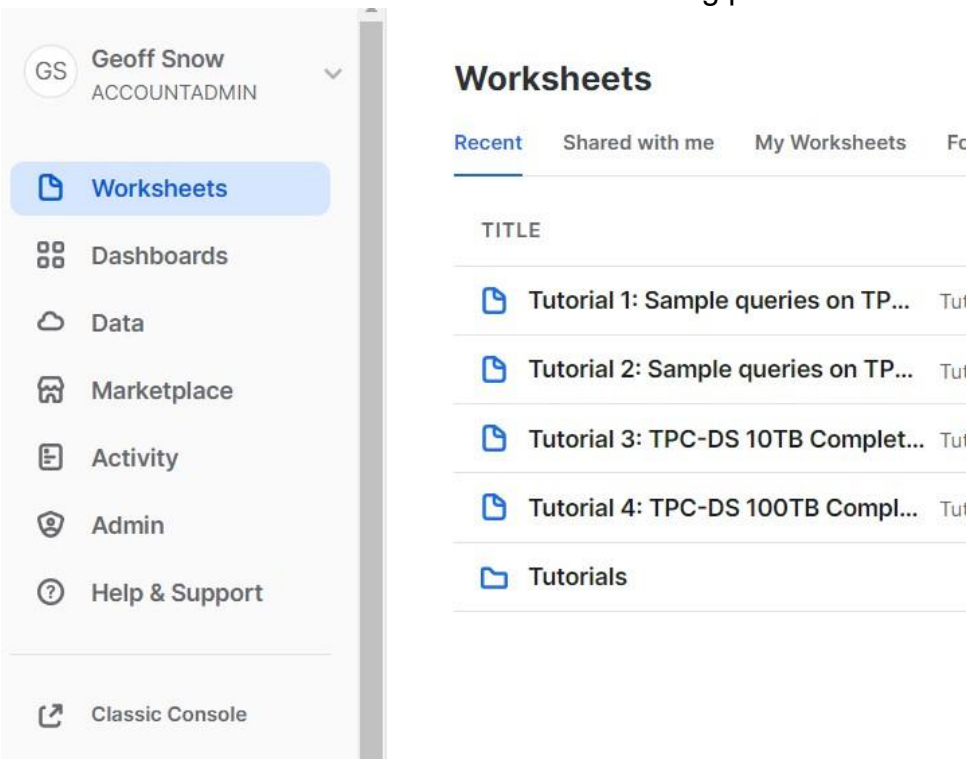
- We chose the following
    - Snowflake edition – Enterprise
    - Snowflake cloud provider – AWS
    - Region – Northern Virginia – US EAST



- 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.

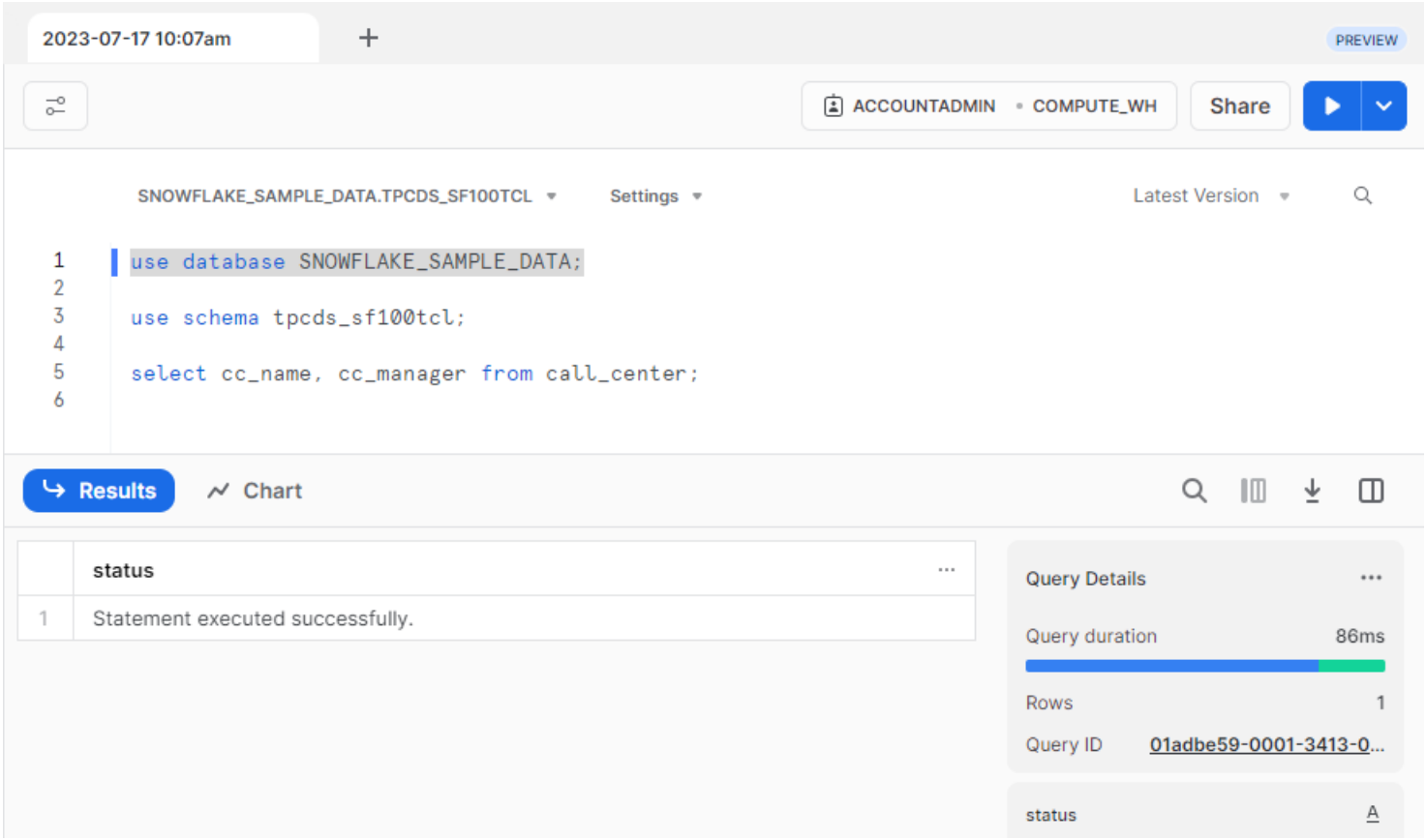
1.1.3 Open your snowflake environment, remember this is SaaS so you'll be logging into the Snowflake Management console application. Optimistically you bookmarked that account link but you can navigate to the login from **snowflakecomputing.com**, as well. 1.1.4 Select Classic Console in the lower left hand dialog pane view



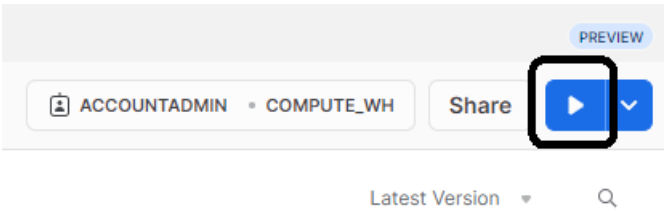
1.1.5 We'll select Worksheets from the navigation to do a little initial exploration

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

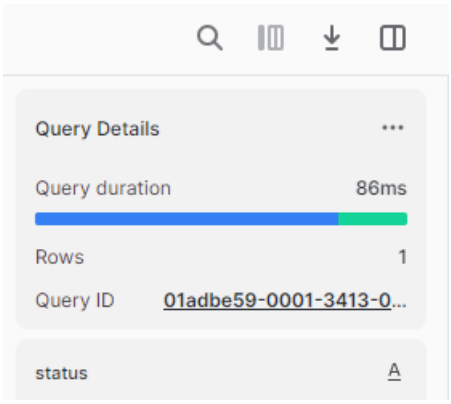
```
use database snowflake_sample_data;
```



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

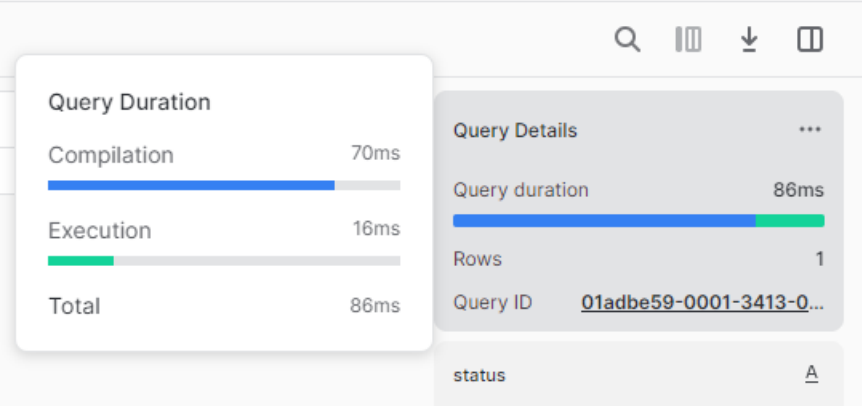


1.1.8 This allows us to see the query results and the dynamic query performance details.



1.1.9 Selecting **Run** again in the dialog presented allows us to execute the same SQL command. This would allow us to identify the effect of the statement execution on

caching and other Snowflake optimizations. Note that we can hover the Query duration to see the breakdown of the query Compilation and Execution timing.



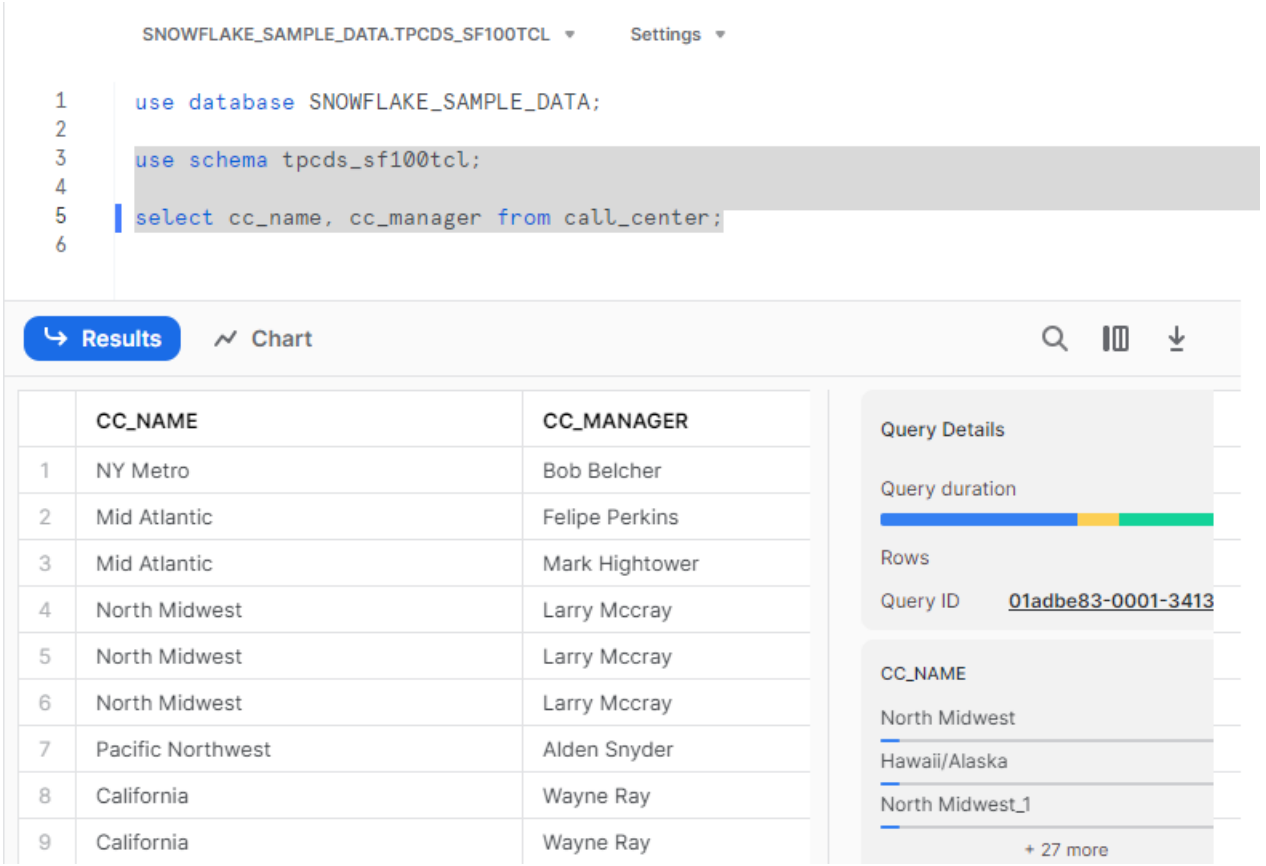
1.1.10 We can then select the schema for our worksheet session by entering the SQL command

```
 use schema
TPCDS_SF100TCL;
```

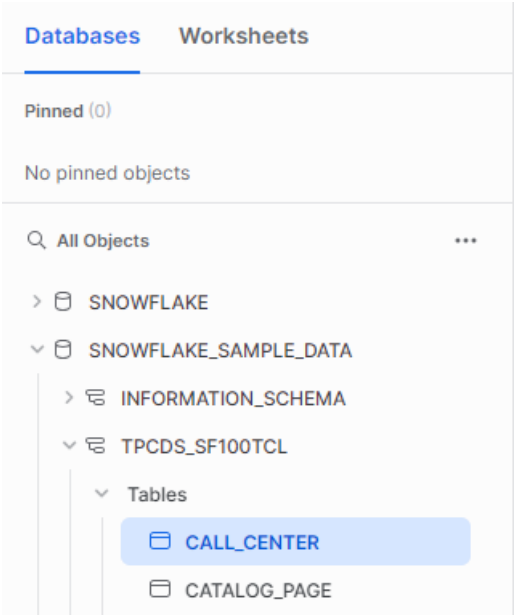
1.1.10 Highlight that SQL, and select Run to execute our choice of schema at that point we can run queries that don't have the database and schema qualifiers like

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

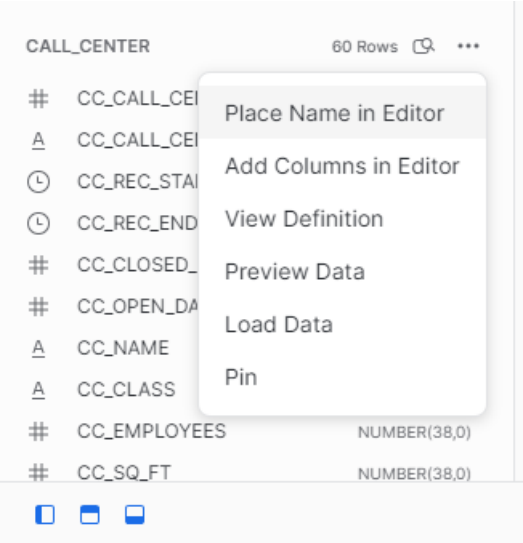
1.1.11 Highlighting that SQL and running it shows us the results



1.1.11 Next, we'll expand the Tables under the SNOWFLAKE_SAMPLE_DATA database and TPCDS_SF100TCL schema. Select the CALL_CENTER table.



1.1.12 The definition will come up in the pane below the Table selection. Select the ellipses **…** next to the CALL_CENTER table name and choose **Preview Data**



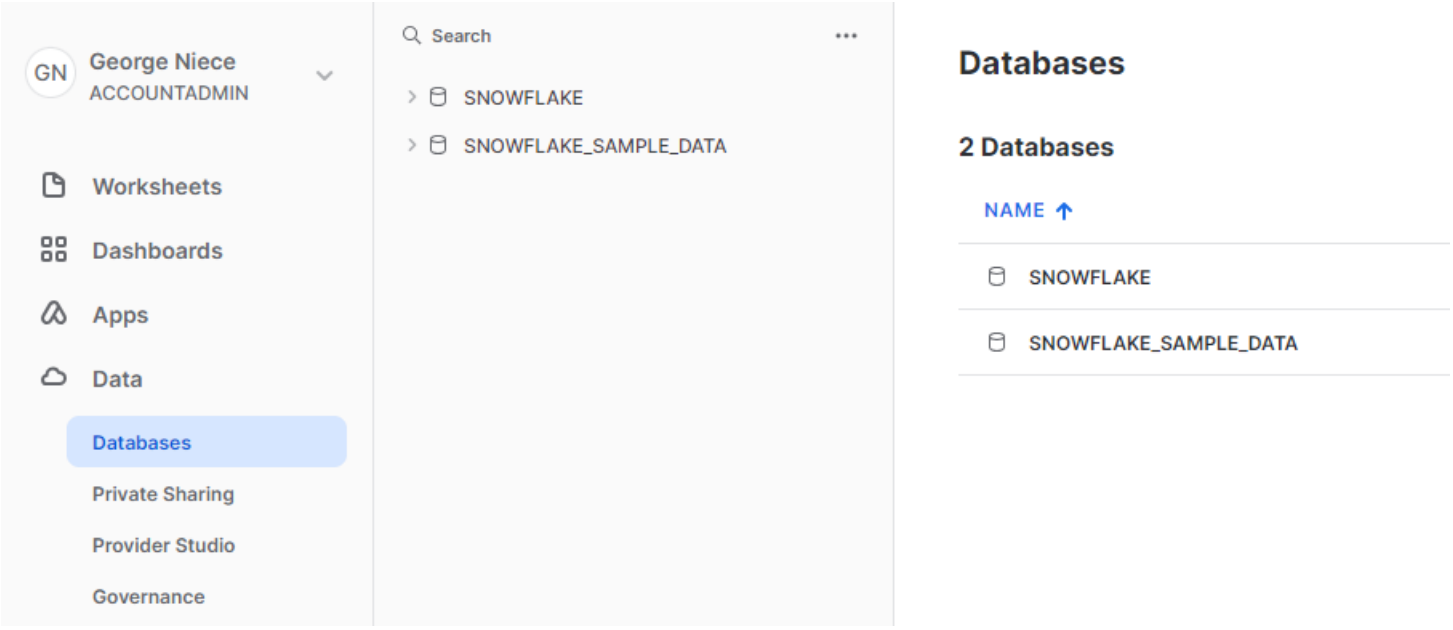
1.1.13 That displays the preview of the data in the CALL_CENTER table

1: Sample queries ... 2023-07-17 10:07am +

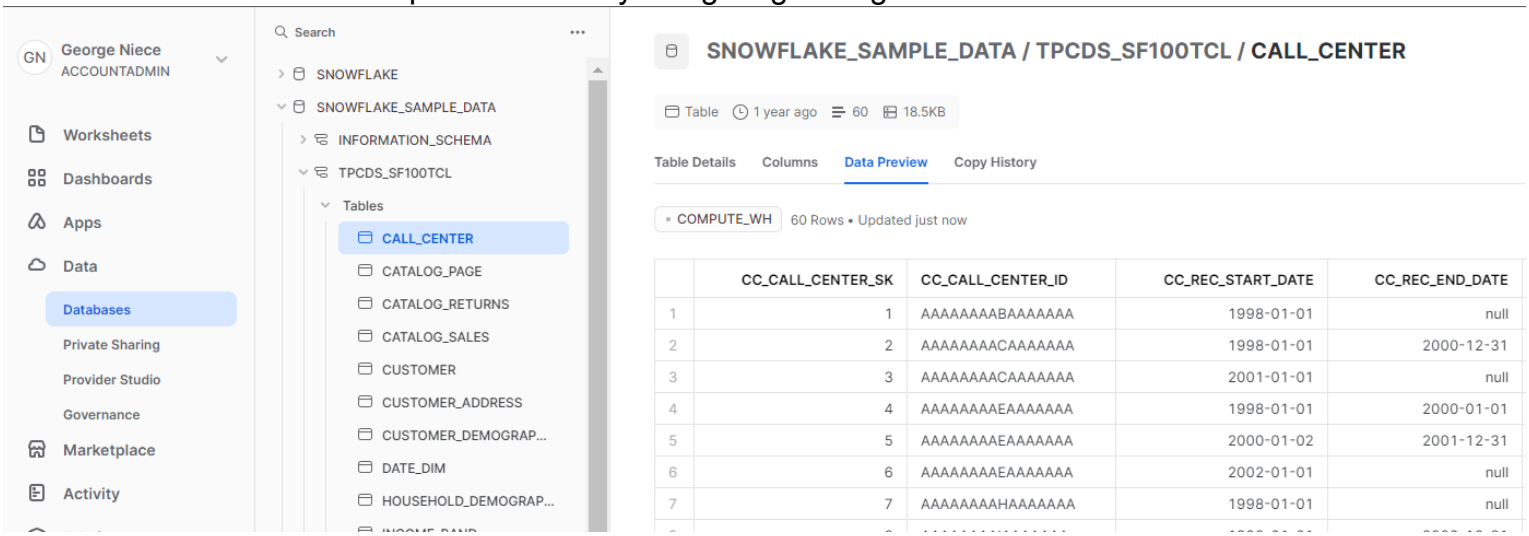
Data Preview

	CC_CALL_CENTER_SK	CC_CALL_CENTER_ID	CC_REC_START_DATE	CC_REC_END_DATE	CC_CLOSED_DATE_SK	C
1	1	AAAAAAAABAAAAAAA	1998-01-01	null	null	
2	2	AAAAAAAACAAAAAAA	1998-01-01	2000-12-31	null	
3	3	AAAAAAAACAAAAAAA	2001-01-01	null	null	
4	4	AAAAAAAAEAAAAAAA	1998-01-01	2000-01-01	null	
5	5	AAAAAAAAEAAAAAAA	2000-01-02	2001-12-31	null	
6	6	AAAAAAAAEAAAAAAA	2002-01-01	null	null	
7	7	AAAAAAAAHAAAAAAA	1998-01-01	null	null	
8	8	AAAAAAAAIAAAAAAA	1998-01-01	2000-12-31	null	

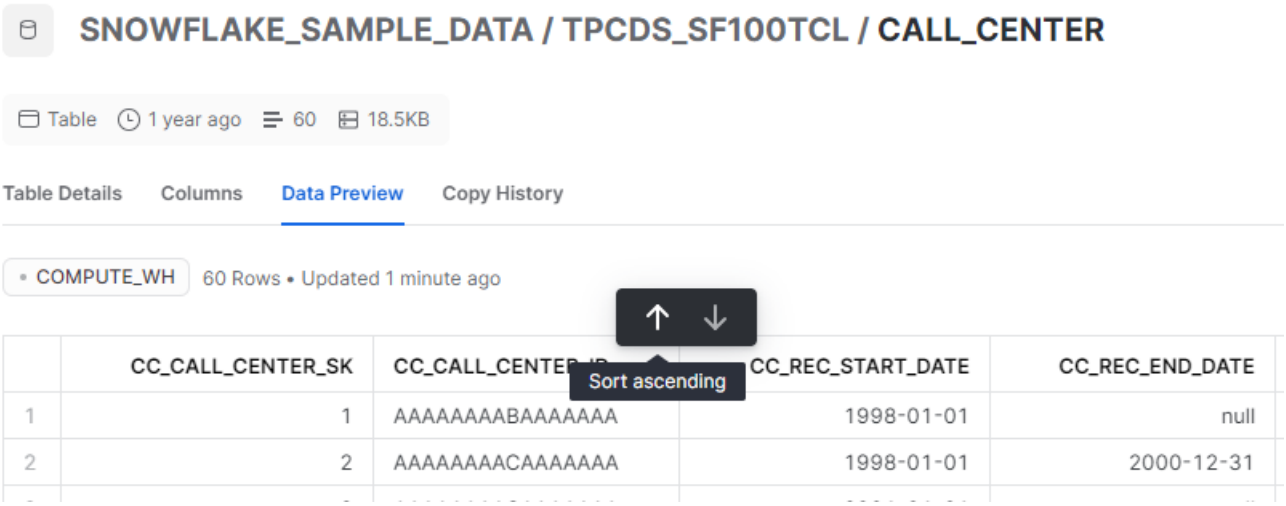
1.1.14 Next we'll select Data -> Databases in the navigation. This displays the top-level details for the databases in our Trial Account.



1.1.15 You can also preview data by navigating through the search for data.



1.1.16 Select the SNOWFLAKE_SAMPLE_DATA under the Database column. Then select a Table column header and choose Sort by Ascending



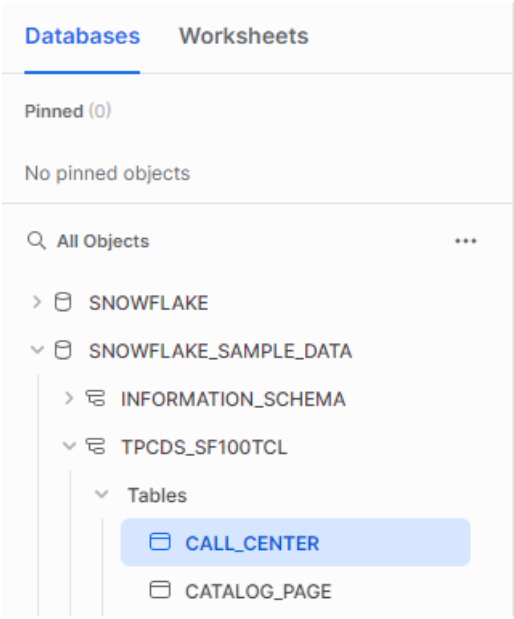
We may have noticed that we have two CALL_CENTER tables, in our the SNOWFLAKE_SAMPLE_DATA, and looking further that they're in different schemas (although the names are very similar). In our worksheet we've been using the **`TPCDS_SF100TCL`** schema.

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.

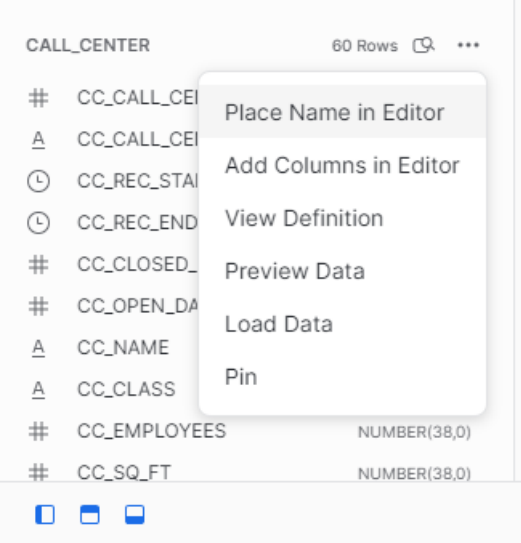
Query execution

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.

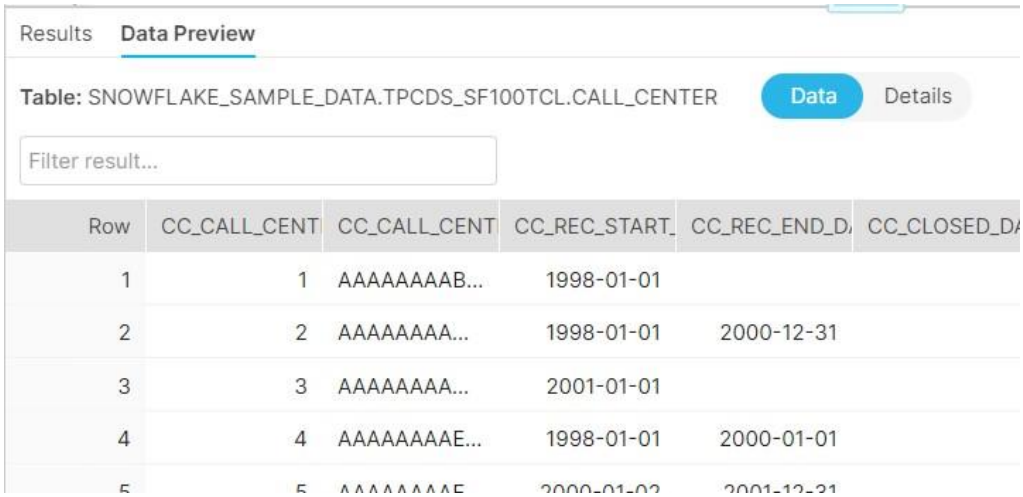
1.1.18 Select the CALL_CENTER Table Name for the TPCDS_SF100TCL schema. This will show us the details of that table as shown.



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.



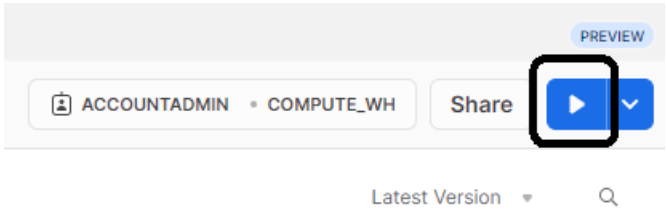
1.1.20 Notice that there is a slider for Data Details in the Data Preview pane. Change the slide to **Data** from Details. Note the preview of the data in the CALL_CENTER table.



1.1.21 Now enter the following fully qualified SQL statement

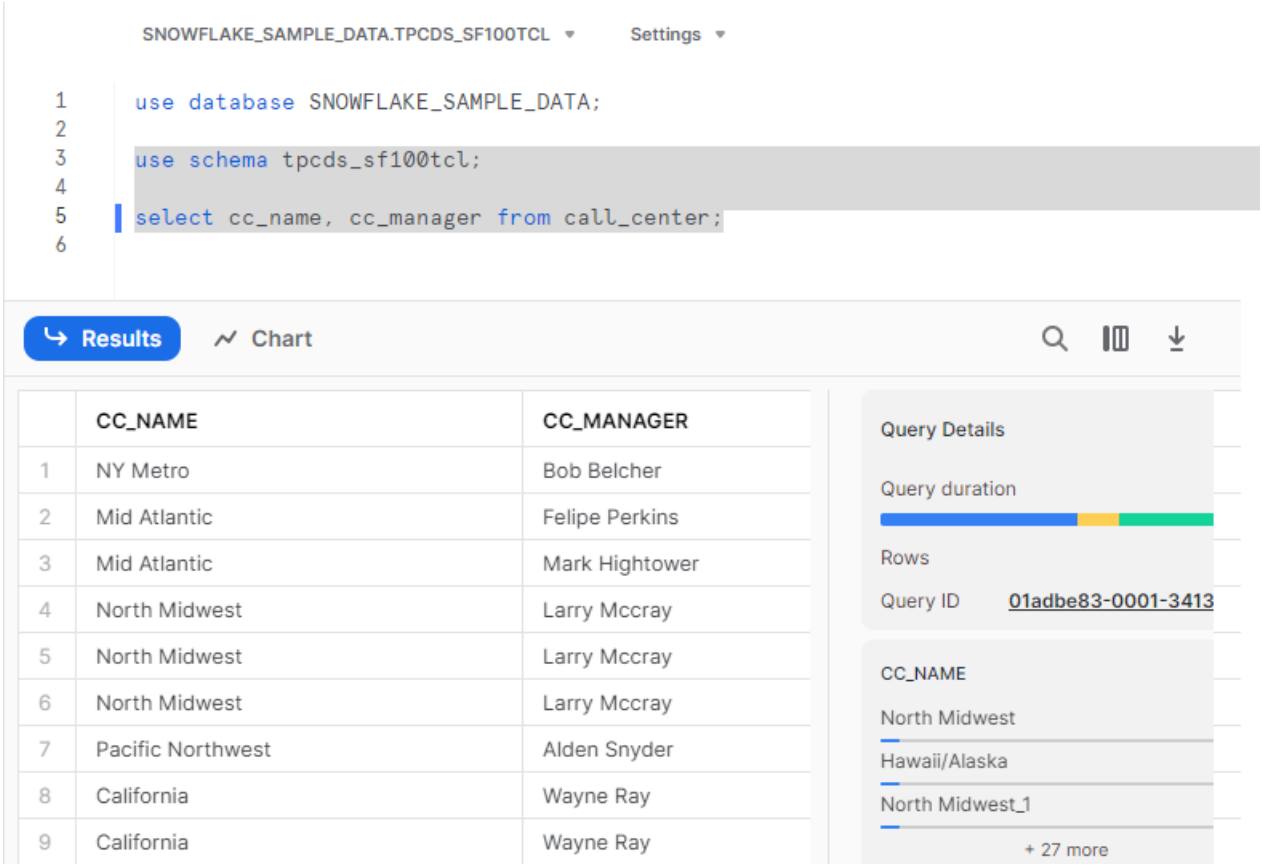
```
      select
cc_name,cc_manager from
"SNOWFLAKE_SAMPLE_DATA"."TPCDS
_SF100TCL"."CALL_CENTER";
```

1.1.22 Select/highlight the SQL and choose the Blue Triangle in the upper right hand corner to run the query.



Don’t ask me again
Since this is an experimental environment we normally suggest you run each query.

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.

```
Select * from
     snowflake_sample_data.tpcds_sf100tcl.customer_demographics limit
     10
```

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";
```

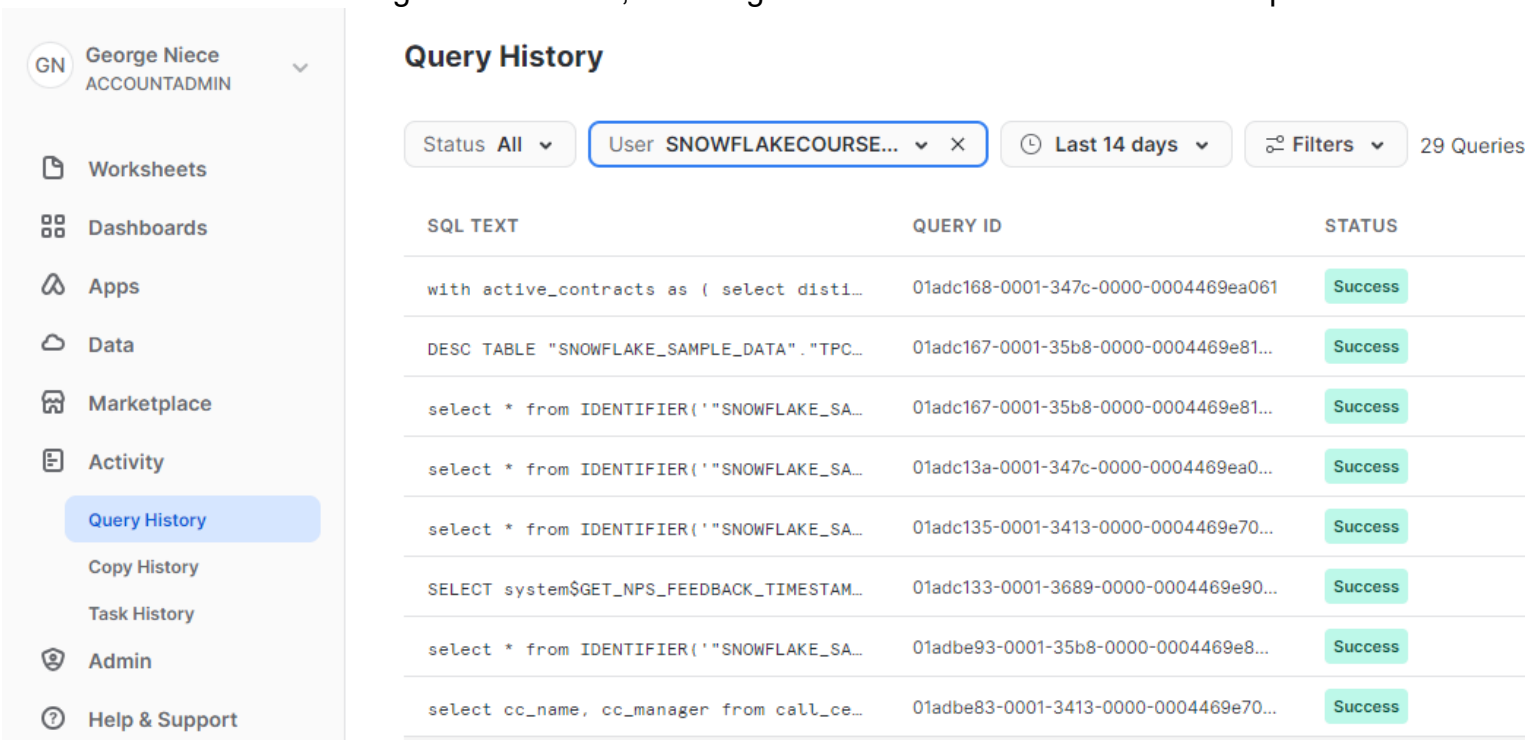
1.1.27 Notice this shows us yet another view of the CALL_CENTER table details.

```
7  DESC TABLE
8  "SNOWFLAKE_SAMPLE_DATA"."TPCDS_SF100TCL"."CALL_CENTER";
9
```

Results | Chart

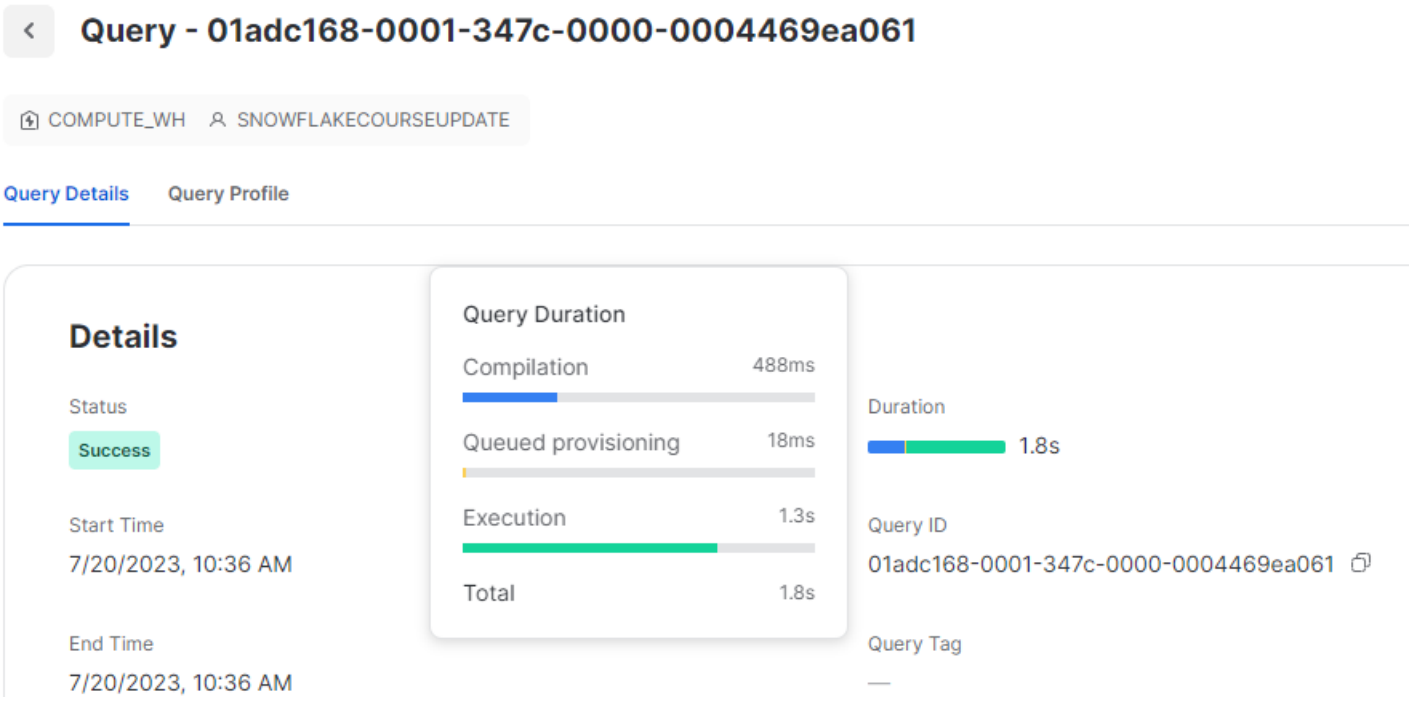
	name	type	kind	null?	default	primary key	unique key
1	CC_CALL_CENTER_SK	NUMBER(38,0)	COLUMN	N	null	Y	N
2	CC_CALL_CENTER_ID	VARCHAR(16)	COLUMN	N	null	N	N
3	CC_REC_START_DATE	DATE	COLUMN	Y	null	N	N
4	CC_REC_END_DATE	DATE	COLUMN	Y	null	N	N
5	CC_CLOSED_DATE_SK	NUMBER(38,0)	COLUMN	Y	null	N	N
6	CC_OPEN_DATE_SK	NUMBER(38,0)	COLUMN	Y	null	N	N

1.1.28 Next we'll select the Activity -> Query History navigation. Notice that the queries we've been running will show here, including both successful and unsuccessful queries.



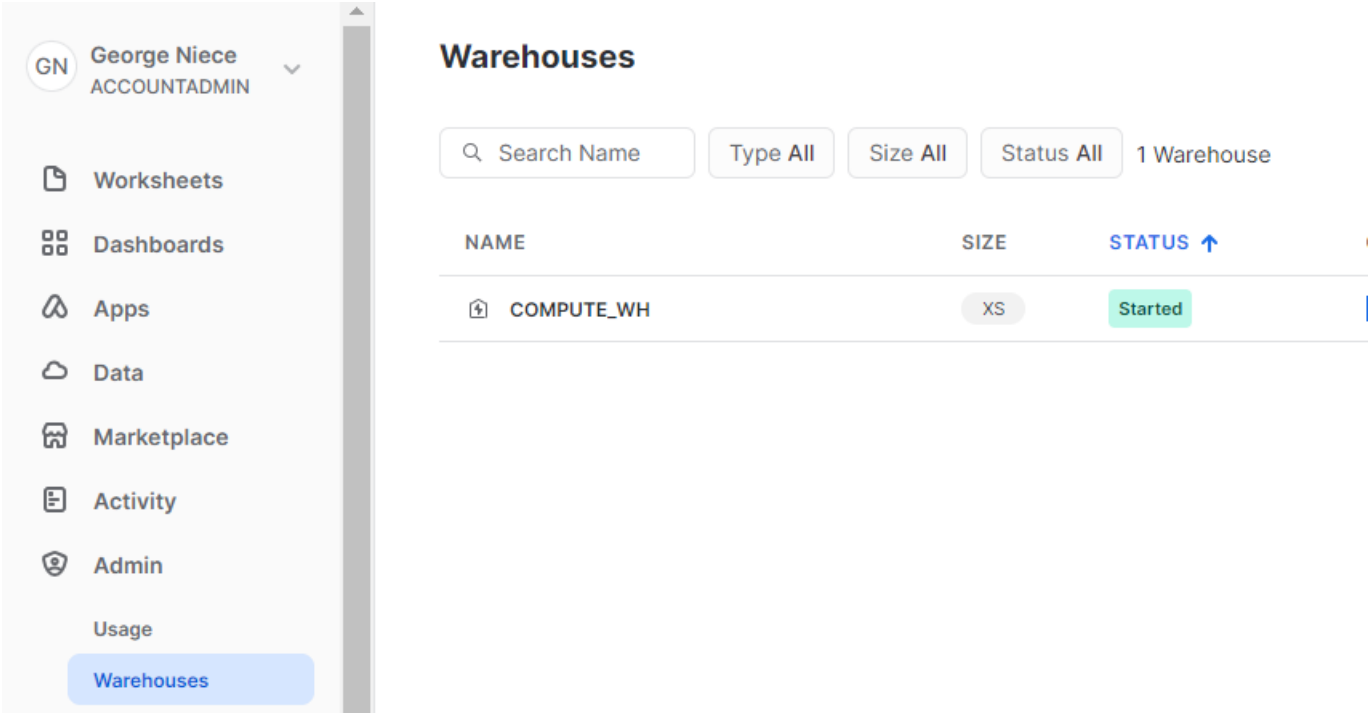
1.1.29 Choosing the SQL Text value from one of the entries shows us the SQL statement or command that was run.

1.1.30 Hovering the Query Duration value for the entry shows us the details of the statement execution as noted below.

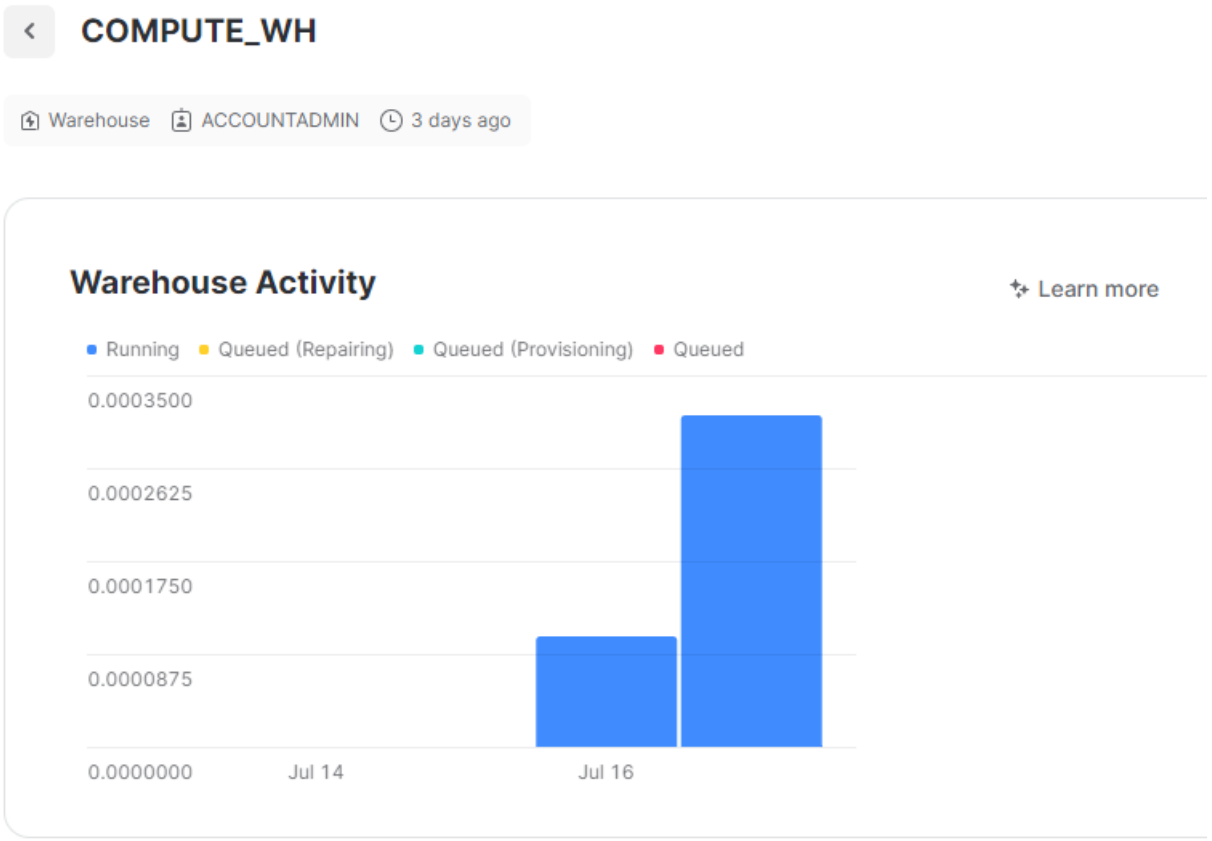


1.1.31 Note that if we have a significant number of queries we may want to add a filter condition. Note that only select statements matching our entered filter are visible in our history, when we enter a filter condition.

1.1.32 Select the Admin -> Warehouses view from the navigation.



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



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.