



Zero to Snowpark

Overview

Welcome to today's Hands on Lab! We work for Tasty Bytes- a global food truck network. As Tasty Bytes Data Scientists, we want to direct our trucks to locations that are expected to have the highest sales on a given shift.

To provide this insight, we will use historical shift sales at each location to build an ML model. This data has been made available to us in Snowflake. Our model will provide the predicted sales at each location for the upcoming shift. To bring the model to life, we will build an app that will allow the business users to see the Top 20 locations with the highest predicted sales in each city.

Access Lab material in the [Google Drive](#)

Prerequisites

- ☐ Familiarity with Python
- ☐ Familiarity with the DataFrame API
- ☐ Familiarity with Snowflake

What You'll Need

You will need the following things before beginning:

Snowflake account

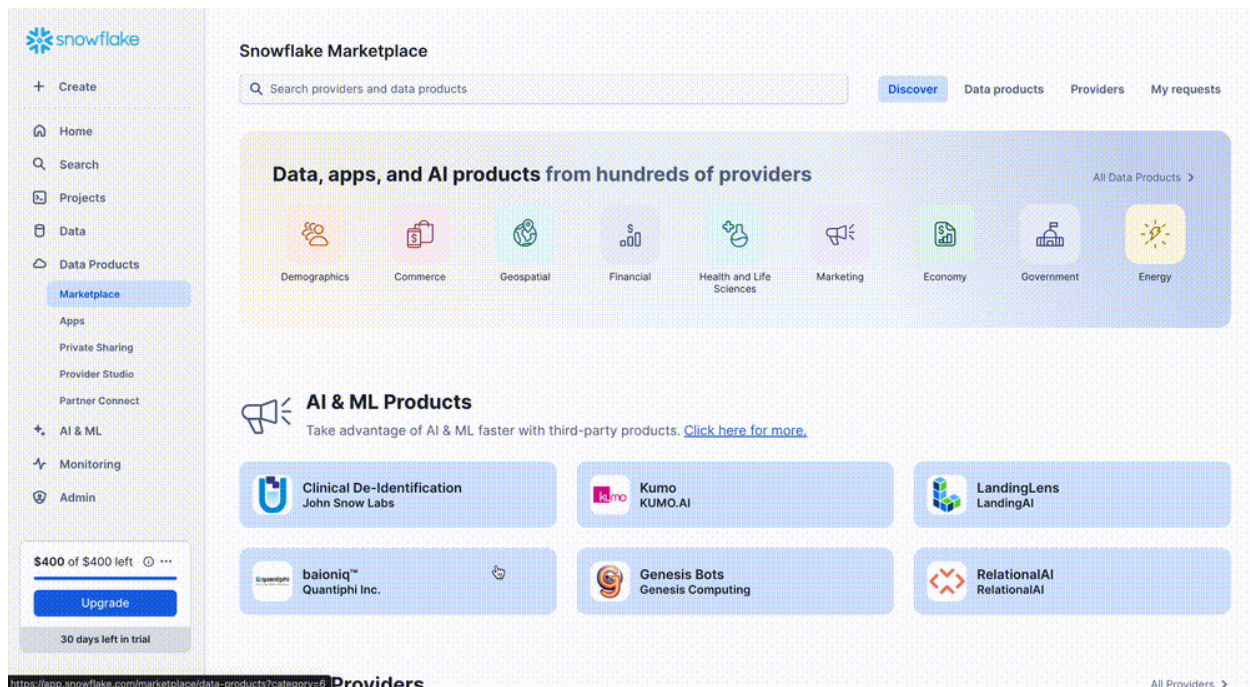
- A Snowflake Account. Create a [Trial Account here](#).
 - Edition: Enterprise
 - CSP: AWS
 - Region: US WEST OREGON
- A Snowflake user created with ACCOUNTADMIN permissions. This user will be used to get things setup in Snowflake.

Workshop Instructions

1. Activate Snowflake Trial Account



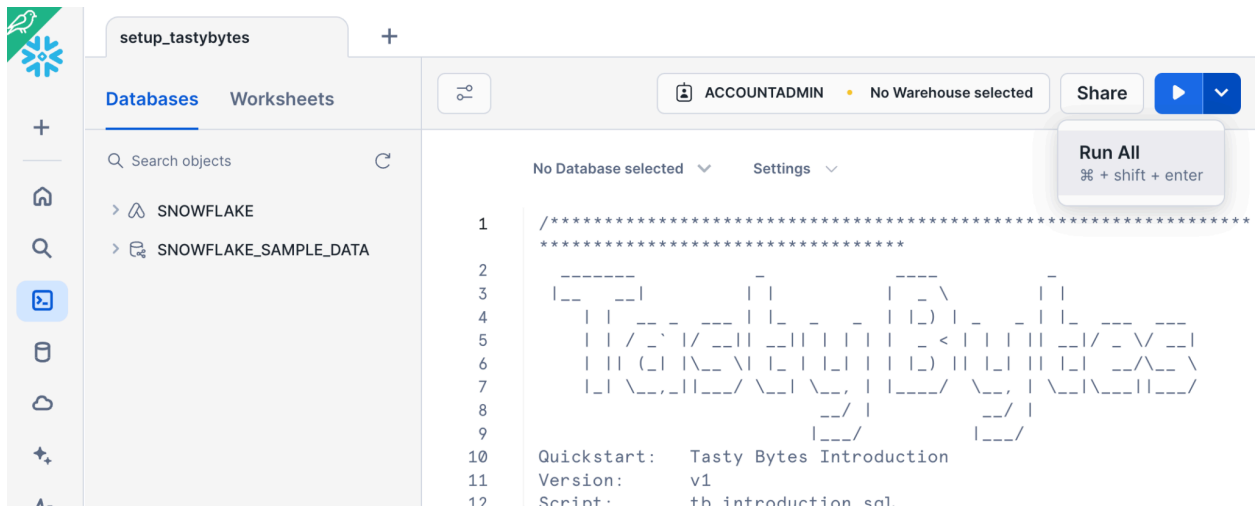
2. Acquire the SafeGraph Marketplace listing in your Snowflake account. Follow the steps and video below:
 - a. Click -> Home Icon
 - b. Click -> Data Products -> Marketplace
 - c. Search -> frostbyte
 - d. Click -> SafeGraph: frostbyte
 - e. Click -> Get
 - f. Rename Database -> FROSTBYTE_SAFEGRAPH (all capital letters)
 - g. Grant to Additional Roles -> PUBLIC



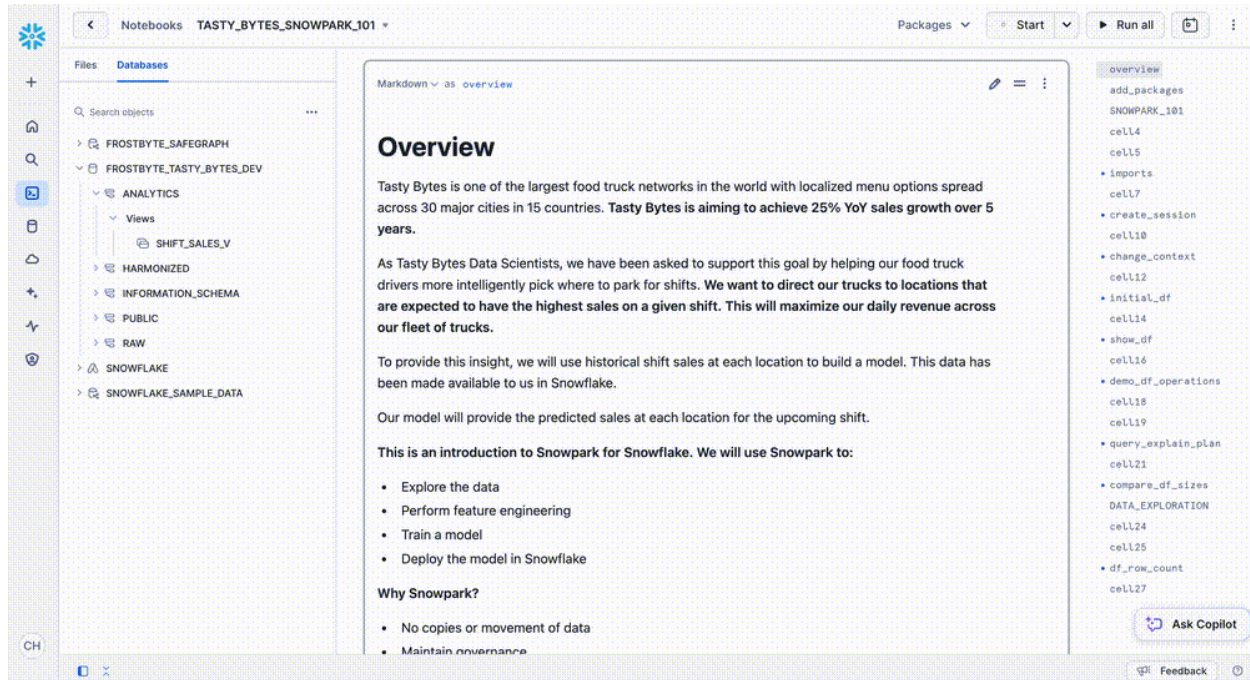
3. Access Lab material in the [Google Drive](#). Download these files locally:
 - a. Tastybytes_streamlit_app.py
 - b. tastybytes_notebook_featurestore.ipynb
 - c. Setup_tastybytes.sql
4. Navigate to Worksheets, click "+" in the top-right corner to create a new Worksheet, and choose "SQL Worksheet".
5. Copy the entire text in file **setup_tastybytes.sql** and paste it into a new worksheet in Snowsight. These are your setups scripts- it will set up the Snowflake objects (warehouse, database, schema), ingest shift sales data from S3, and join shift sales with the SafeGraph location data.



- a. Click on the arrow next to the Run button and Click “Run All” to run all the scripts in this worksheet.



6. Download tastybytes_notebook_featurestore.ipynb from [Google Drive](#)
7. Navigate to the bottom left corner and switch your role to 'TASTY_DATA_SCIENTIST'
8. Upload notebook to Snowsight
 - a. Click -> Home Icon
 - b. Click -> Projects
 - c. Click -> Notebooks
 - d. Click -> Down Arrow, Import .ipynb File
 - e. Ensure Database is FROSTBYTE_TASTY_BYTES
 - f. Change Schema to ANALYTICS
 - g. Change Warehouse to TASTY_DS_WH
9. Add required packages. Click the packages drop down from the top right corner of the notebook. Add the following packages
 - a. Snowflake-ml-python
 - b. Matplotlib
 - c. Plotly
 - d. Modin



10. Start the kernel by clicking “Start Session”. We’ll run through the notebook together 😊
 - a. In the cell “HOL_Environment”, change **MY_ID = 'MICHELLE'** to your own name.

```
Python ▾ as HOL_Environment •  
  
1 #Set this up to be your name as a unique ID for the lab with some python code  
2 MY_ID = 'MICHELLE'  
3 MY_WAREHOUSE = MY_ID + '_WH'  
4 MY_SCHEMA = 'SCHEMA_' + MY_ID  
5
```

Streamlit App

Now that you have deployed a model that predicts the shift sales of each location for the upcoming shift, you want to find a way for truck drivers to use these predictions to pick where they will park. Take the code you prototyped in the notebook into a standalone Streamlit App!

1. Navigate to the bottom left corner and switch your role to ‘TASTY_DATA_SCIENTIST’
2. From Snowsight, select the Projects and then Streamlit. Create a new Streamlit-in-Snowflake application with:
 - Database: FROSTBYTE_TASTY_BYTES
 - Schema: ANALYTICS



- Warehouse: TASTY_DS_WH
- 3. Add the following packages from the packages dropdown in the code editor section:
 - snowflake-ml-python
- 4. Copy the code from `tastybytes_streamlit_app.py` into the code editor section. Run the app! Enter **Vancouver** or your city of choice to see the Top 10 Locations to park your food trucks! (Capitalize the first letter of the city you choose)

Yay!! We built an ML model to predict sales at each location and an application for business users to interact with the underlying model. We went above and beyond and developed a quick MVP for our support team to analyze and get insight from customer support tickets easily.