

For demonstration purposes, I have utilized the Amazon UK shoes product reviews dataset, which I loaded into Snowflake under the table called `REVIEWS` in the database `AIPROJECT` and schema `dbo`.

The `REVIEWS` table to be created with following columns

The dataset includes `PRODUCT_NAME`, `REVIEW_TITLE`, `REVIEW_TEXT`, and `REVIEW_DATE`.

Create AIRPROJECT data base

```
create or replace database AIPROJECT
```

Create dbo Schema

```
create or replace schema dbo
```

Create Reviews table

```
create or replace table REVIEWS (PRODUCT_NAME varchar(1000), REVIEW_TITLE varchar(1000),  
REVIEW_TEXT varchar(1000), REVIEW_DATE varchar(1000))
```

```
describe table AIPROJECT.DBO.REVIEWS
```

After loading records through web UI from `amazon_uk_shoes_products_dataset.csv` file from local system view recordings from table

```
SELECT * FROM AIPROJECT.DBO.REVIEWS LIMIT 10;
```

Kount number of records from Reviews table

```
Select count(*) from AIPROJECT.DBO.REVIEWS;
```

```
- Selecting columns REVIEW_TITLE and REVIEW_TEXT, and determining the  
country
```

```
-- Determine the country based on the content of REVIEW_DATE
```

Create TRANSLATE table

```
create or replace table TRANSLATE AS (SELECT
```

```

REVIEW_TITLE,
REVIEW_TEXT,
CASE
    WHEN POSITION('United States' IN REVIEW_DATE) > 0 THEN 'UNITED STATES'
    WHEN POSITION('India' IN REVIEW_DATE) > 0 THEN 'INDIA'
    WHEN POSITION('France' IN REVIEW_DATE) > 0 THEN 'FRANCE'
    WHEN POSITION('Italy' IN REVIEW_DATE) > 0 THEN 'ITALY'
    WHEN POSITION('Spain' IN REVIEW_DATE) > 0 THEN 'SPAIN'
    WHEN POSITION('Germany' IN REVIEW_DATE) > 0 THEN 'GERMANY'
    WHEN POSITION('Canada' IN REVIEW_DATE) > 0 THEN 'CANADA'
    WHEN POSITION('Singapore' IN REVIEW_DATE) > 0 THEN 'SINGAPORE'
    WHEN POSITION('Mexico' IN REVIEW_DATE) > 0 THEN 'MEXICO'
    WHEN POSITION('Australia' IN REVIEW_DATE) > 0 THEN 'AUSTRALIA'
    ELSE NULL
END AS Country

```

FROM

```

REVIEWS )
select count(*) from TRANSLATE;
select * from TRANSLATE

```

-- Selecting REVIEW_TEXT and performing translation for reviews from Mexico

```

SELECT
    REVIEW_TEXT, COUNTRY,
    SNOWFLAKE.CORTEX.TRANSLATE(REVIEW_TEXT, 'es', 'en') AS TRANSLATION
FROM
    TRANSLATE
WHERE
    COUNTRY = 'MEXICO';

```

-- Translating German to English

```

SELECT
    REVIEW_TEXT, COUNTRY,
    SNOWFLAKE.CORTEX.TRANSLATE(REVIEW_TEXT, 'de', 'en') AS TRANSLATION
FROM
    TRANSLATE
WHERE
    COUNTRY = 'GERMANY';

USE DATABASE AIPROJECT;
USE SCHEMA DBO;
USE ROLE ACCOUNTADMIN;

```

SUMMARIZE

Summarize function returns a summary of the given English text.
Source text to be in English

-- Query to summarize review texts by country in Snowflake

```

Create or replace table SUMMARIZE AS (
    SELECT
        REVIEW_TITLE,
        REVIEW_TEXT,
        CASE
            WHEN POSITION('United States' IN REVIEW_DATE) > 0 THEN 'UNITED STATES'
            WHEN POSITION('India' IN REVIEW_DATE) > 0 THEN 'INDIA'
            WHEN POSITION('France' IN REVIEW_DATE) > 0 THEN 'FRANCE'
            WHEN POSITION('Italy' IN REVIEW_DATE) > 0 THEN 'ITALY'
            WHEN POSITION('Spain' IN REVIEW_DATE) > 0 THEN 'SPAIN'
            WHEN POSITION('Germany' IN REVIEW_DATE) > 0 THEN 'GERMANY'
            WHEN POSITION('Canada' IN REVIEW_DATE) > 0 THEN 'CANADA'
            WHEN POSITION('Singapore' IN REVIEW_DATE) > 0 THEN 'SINGAPORE'

```

```

        WHEN POSITION('Mexico' IN REVIEW_DATE) > 0 THEN 'MEXICO'

        WHEN POSITION('Australia' IN REVIEW_DATE) > 0 THEN 'AUSTRALIA'

        ELSE NULL

    END AS Country

FROM

    REVIEWS )

```

```
select count(*) from SUMMARIZE;
```

```
select * from SUMMARIZE;
```

```

SELECT

    REVIEW_TEXT,

    SNOWFLAKE.CORTEX.SUMMARIZE(REVIEW_TEXT) AS SUMMARY

FROM

    SUMMARIZE

WHERE

    COUNTRY = 'UNITED STATES'

LIMIT 8;

```

SENTIMENT

The SENTIMENT function provides a sentiment score ranging from -1 to 1 for English-language input text. A score of -1 indicates the most negative sentiment, while a score of 1 signifies the most positive sentiment. Scores around 0 suggest a neutral sentiment.

```

USE DATABASE AIPROJECT;

USE SCHEMA DBO;

USE ROLE ACCOUNTADMIN;

```

```
-- Query to analyze sentiment of reviews from the United States in Snowflake
```

```
-- Common Table Expression (CTE) to assign country based on review date
```

```
create or replace table SENTIMENT AS (
```

```
  SELECT
```

```
    REVIEW_TITLE,
```

```
    REVIEW_TEXT,
```

```
    CASE
```

```
      WHEN POSITION('United States' IN REVIEW_DATE) > 0 THEN 'UNITED STATES'
```

```
      ELSE NULL
```

```
    END AS Country
```

```
  FROM
```

```
    REVIEWS )
```

```
select * from SENTIMENT
```

```
-- Main query to calculate sentiment score and categorize sentiment
```

```
SELECT
```

```
  REVIEW_TEXT,
```

```
  SNOWFLAKE.CORTEX.SENTIMENT(REVIEW_TEXT) AS SENTIMENT_SCORE,
```

```
  CASE
```

```
    WHEN SNOWFLAKE.CORTEX.SENTIMENT(REVIEW_TEXT) > 0 AND  
    SNOWFLAKE.CORTEX.SENTIMENT(REVIEW_TEXT) <= 0.5 THEN 'AVERAGE'
```

```
    WHEN SNOWFLAKE.CORTEX.SENTIMENT(REVIEW_TEXT) > 0.5 AND  
    SNOWFLAKE.CORTEX.SENTIMENT(REVIEW_TEXT) <= 0.8 THEN 'GOOD'
```

```
    WHEN SNOWFLAKE.CORTEX.SENTIMENT(REVIEW_TEXT) > 0.8 THEN 'EXCEPTIONAL'
```

```
    WHEN SNOWFLAKE.CORTEX.SENTIMENT(REVIEW_TEXT) < 0 THEN 'BAD'
```

```
    ELSE 'NEUTRAL'
```

```
  END AS SENTIMENT
```

```
FROM
```

```
  SENTIMENT
```

```
WHERE COUNTRY = 'UNITED STATES';
```

COMPLETE

Given a prompt, COMPLETE function generates a response (completion) using our choice of supported language model. Currently, the function supports the following models. Each models might different cost and quotas.

```
'mistral-large' 'mixtral-8x7b' 'llama2-70b-chat' 'mistral-7b'
```

```
USE DATABASE AIPROJECT;
```

```
USE SCHEMA DBO;
```

```
USE ROLE ACCOUNTADMIN;
```

```
-- This common table expression (CTE) categorizes the country as 'UNITED STATES'
```

```
-- if the review date contains 'United States'.
```

```
Create or replace table COMPLETE AS (
```

```
  SELECT
```

```
    REVIEW_TITLE,
```

```
    REVIEW_TEXT,
```

```
    CASE
```

```
      WHEN POSITION('United States' IN REVIEW_DATE) > 0 THEN 'UNITED STATES'
```

```
      ELSE NULL
```

```
    END AS Country
```

```
  FROM
```

```
    REVIEWS )
```

```
-- This query selects review text from the REVIEWS table and limits the result to one entry.
```

```
SELECT
```

```
  REVIEW_TEXT,
```

```
-- The SNOWFLAKE.CORTX.COMPLETE function generates a complete message by using the prompt
```

```

    SNOWFLAKE.CORTEX.COMPLETE('mistral-large', CONCAT('Draft a short message that acknowledges
the problem, includes an apology, and provides a short recommendation.', REVIEW_TEXT)) AS
COMPLETE

FROM

    COMPLETE

WHERE

SELECT
REVIEW_TEXT,
-- The SNOWFLAKE.CORTEX.COMPLETE function generates a complete message by using
the prompt
SNOWFLAKE.CORTEX.COMPLETE('mistral-large', CONCAT('Draft a short message that
acknowledges the problem, includes an apology, and provides a short
recommendation.', REVIEW_TEXT)) AS COMPLETE
FROM
TRANSLATE
WHERE
COUNTRY = 'UNITED STATES'
LIMIT 2;
    COUNTRY = 'UNITED STATES'

LIMIT 2;

```

EXTRACT_ANSWER

The `EXTRACT_ANSWER` function retrieves an answer to a specified question from a text document. The document can either be a plain-English document or a string representation of semi-structured (JSON) data

```

USE DATABASE AIPROJECT;

USE SCHEMA DBO;

USE ROLE ACCOUNTADMIN;

```

```
-- Common Table Expression (CTE) to extract relevant data
```

```
Create or replace table EXTRACT AS (
```

```

    SELECT
        REVIEW_TITLE,

```

```

REVIEW_TEXT,
-- Identify the country
CASE
    WHEN POSITION('United States' IN REVIEW_DATE) > 0 THEN 'UNITED STATES'
    ELSE NULL
END AS Country
FROM
    REVIEWS )

select * from EXTRACT;

-- Main query to extract answer and parse it
SELECT
    REVIEW_TEXT, -- Original review text
    -- Extract the answer using Cortex
    SNOWFLAKE.CORTEX.EXTRACT_ANSWER(REVIEW_TEXT, 'What product this review talks about?')
    AS ANSWER,
    -- Parse the answer from JSON and cast it as STRING
    PARSE_JSON(
        SNOWFLAKE.CORTEX.EXTRACT_ANSWER(REVIEW_TEXT, 'What product this review talks
        about?')::variant
    )[0]:answer::STRING AS PARSED_ANSWER
FROM
    EXTRACT
WHERE
    COUNTRY = 'UNITED STATES' -- Filter for reviews from the United States
LIMIT 1; -- Limit to one result

```

Current Restrictions

1. Currently, these functions are available only in selected regions, such as AWS US East (N. Virginia), AWS US West (Oregon), AWS Europe (Frankfurt), Azure East US 2 (Virginia), and Azure West Europe (Netherlands)
2. The models used for these LLM functions have limitations in terms of tokens
3. To maintain a performance across customers, Snowflake cortex LLM functions are subject to usage quotas.
4. Users must use a role that has been granted the SNOWFLAKE.CORTEX_USER database role to access the Cortex LLM functions. By default, this database role is granted only to the ACCOUNTADMIN role. The ACCOUNTADMIN role must then grant this role to user roles to allow users access to Cortex LLM functions

Reference :

[Snowflake Cortex LLM Functions Explained \(with Examples\) | by Dhilip Subramanian | Medium](#)