# Generative AI in Snowflake

Notes from Datacamp course:
https://app.datacamp.com/learn/courses/introduction-to-generative-ai-in-snowflake

Snowflake 'cortex' functions that can be used in the snowflake UI with python notebooks or native sql

**Notebooks:**
Packages: snowflake-ml-python

```python
From snowflake.cortex import extract_answer, summarize, complete,
translate, classify_text
```

| function | example |
|---|---|
| extract_answer | ```python<br>response = extract_answer(<br>    from_text=review,<br>    question='What is the main issue with this review?'<br>)<br>print(response)``` |
| summarize | ```python<br>response = summarize(text=review)<br>print(response)``` |
| complete | ```python<br>prompt = f"""Write a 2-sentence response to the following review:\n---\n{review}<br>        \n---\nAcknowledge the feedback and outline planned actions.<br>        Return only the response text."""<br><br># Generate and print a response<br>response = complete(model='llama3.1-8b',<br>                    prompt = prompt,<br>                    # Set temperature and limit tokens<br>                        options={<br>                    'temperature':.3,<br>                    'tockens':80<br>                    }<br>            )<br>print(response)``` |

| translate | ```python
# Call the function and print the result
translated = translate(text=review,
                       from_language='es',
                       to_language='en')
print(translated)
``` |
|---|---|
| classify_text | ```python
# Create categories
categories = ['staff', 'location', 'cleanliness', 'food and drink']

# Classify the summarized review
review_category = classify_text(
    str_input=summarized,
    categories=categories
)

# Print the category
print(review_category)
``` |

Natively in snowflake

| AI_COMPLETE | ```sql
SELECT
  DESCRIPTION,
  -- Generate a response
  AI_COMPLETE(
    'llama3.1-8b',
    -- Complete a prompt
    PROMPT('Write a polite 1-sentence response to this hotel review: {0}.', DESCRIPTION),
    -- Set temperature and limit tokens
    {'temperature': 0.5, 'max_tokens': 60}
  ) AS completion
FROM HOTELS.REVIEWS
WHERE RATING > 8
AND COUNTRY = 'France'
ORDER BY DATE DESC
LIMIT 2
``` |
|---|---|
|  |  |

| AI_SENTIMENT | ```sql
SELECT
    DESCRIPTION,
    -- Perform sentiment analysis
    AI_SENTIMENT(DESCRIPTION)['categories'][0]['sentiment']
FROM HOTELS.REVIEWS
WHERE hotel_name = 'Hyatt Regency Palais'
    -- Filter records for Sep 2023
    AND EXTRACT(MONTH FROM DATE) = 09
    AND EXTRACT(YEAR FROM DATE) = 2023
ORDER BY DATE DESC
``` |
|---|---|

Example Snowflake cortex workflows
- Use the language field in sql table to auto translate review language to en
- Summarize
- Categorize
- Complete a response
- Translate response back to language in sql table