Final Report

Github : https://github.com/valserrr/Final_206_w25

a. The goals for your project include what APIs/websites you planned to work with and what data you planned to gather.

We plan on using these : API (meowfacts.herokuapp.com) , dog.ceo/api/breeds (Dog API), List of free APIs](https://github.com/public-apis/public-apis)

i. We plan to gather data on dog breeds and details about them along with collecting facts about cats.

B. The goals that were achieved include what APIs/websites you worked with and what data you gathered.

a. We successfully loaded in 100 facts about cats, 100 dog breeds, and 100 dog breed details.
b. We worked with two apis : API (meowfacts.herokuapp.com) , dog.ceo/api/breeds (Dog API)
c. Also an extra api Pony API : ponyapi.net, which collects 100 characteristcs of ponies.

C. The problems that you faced.

-We had trouble loading in the data

-We also struggled with loading in the correct amount of data, It would load in more than 100

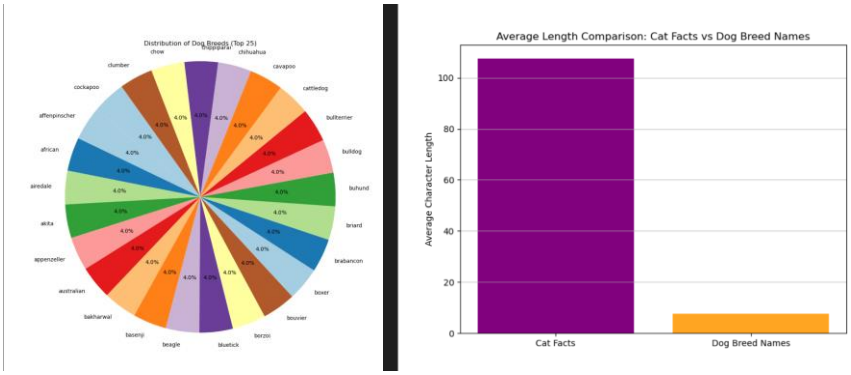
- We also struggled with working on the code at the same time, lots of issues with pulling in and pushing and commiting

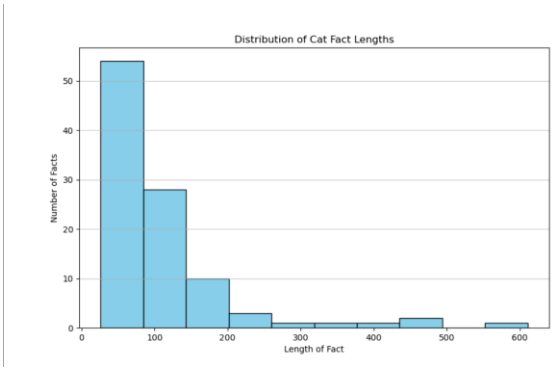
-We also had trouble finding APIs that worked

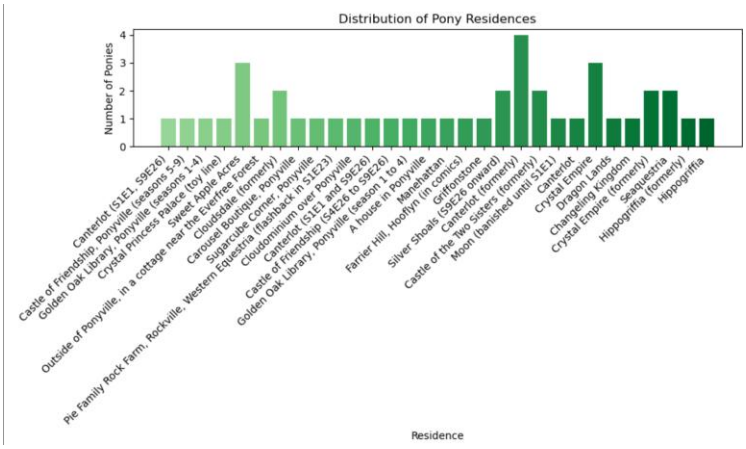
D. The calculations from the data in the database (i.e., a screenshot)

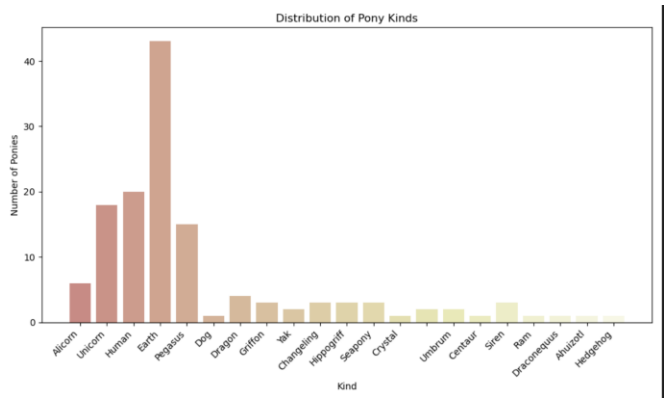
```python
def compare_average_lengths():
    """Compare average lengths of cat facts and dog breed names and visualize them."""
    with sqlite3.connect('final_project_databases.db') as conn:
        cur = conn.cursor()

        # Get average length of cat facts
        cur.execute('SELECT AVG(LENGTH(fact)) FROM CatFacts')
        avg_cat_fact_length = cur.fetchone()[0] or 0

        # Get average length of dog breed names
        cur.execute('SELECT AVG(LENGTH(breed)) FROM DogBreeds')
        avg_dog_breed_length = cur.fetchone()[0] or 0

    # Prepare data for visualization
    labels = ['Cat Facts', 'Dog Breed Names']
    averages = [avg_cat_fact_length, avg_dog_breed_length]
```

E. The visualization that you created (i.e., screenshot or image file)









F. Instructions for running your code.
First run database.py, then run final_project_database, then run visual.py.

G. Documentation for each function that you wrote. This includes describing the input and output for each function.

Function	Description	Inputs	Outputs
fetch_dog_breeds()	Creates the necessary tables (CatFacts, DogBreeds, and DogBreedDetails) in the SQLite database	None	Inserts breed data into the database and prints the number of new entries.
fetch_dog_breeds_with_mock_data()	Same as fetch_dog_breeds(), uses	None	Inserts mock or live breed data into the database

	mock data if the API call fails.		
analyze_dog_breeds()	Counts the number of entries in the DogBreeds table and writes the result to dog_breeds_analysis.txt	None	Writes analysis results to a file.
analyze_dog_breed_details()	Performs a join between DogBreeds and DogBreedDetails to count how many details exist per breed, then writes the results to dog_breed_details_analysis.txt	None	Writes to a text file
analyze_cat_facts()	Analyzes the number of cat facts in the database and writes the total to a text file analysis.txt	None	Writes to analysis.txt
visualize_cat_facts_distribution()	Generates and saves a histogram that visualizes the distribution of cat fact lengths stored in the CatFacts table of the SQLite database	None	Saves a histogram as cat_fact_lengths.png
visualize_dog_breed_counts()	Creates and saves a pie chart showing the distribution of dog breeds (top 25 by count) from the DogBreeds table in the database.	None	Saves a pie chart as dog_breed_distribution_pie.png

compare_average_lengths()	Calculates and compares the average length of cat facts and dog breed names from the database, and visualizes the comparison in a bar chart.	None	Saves a bar chart as average_length_comparison.png

H. You must also clearly document all resources you used. The documentation should be in the following form.

Date	Issue Description	Location of Resource	Result (did it solve the issue?)
4/21/25	Cat facts	https://meowfacts.herokuapp.com/	Loaded in cat facts
4/21/25	Dog breeds	https://dog.ceo/api/breeds/list/all	Loaded in dog breeds
4/21/25	Pony character	https://ponyapi.net/v1/character/all	Loaded in pony characters