Dylan Conley and Ahmed Almousawi – L01 Group 5

Pets Vets Analysis

Overview of Project:

The project, as the name suggests, analyzes the relationship between the number of pets, vets, and demographic information within the various communities and quadrants of Calgary. By taking information such as the number of cats, number of dogs, number of pets, and number of vets in an area and comparing it to the population and average income of various communities, we can look for patterns in the data, see trends, and create relevant data for both business applications and for personal interest.

Some trends of interest is our income and pets_per_vet graph. It allows a potential business owner to identify communities that would have a large demand for a new veterinarian practice as well as money. Another interesting graph is our income vs pets graph that allows us to see that cat ownership decreases in richer communities while dog ownership increases.

How it meets requirements:

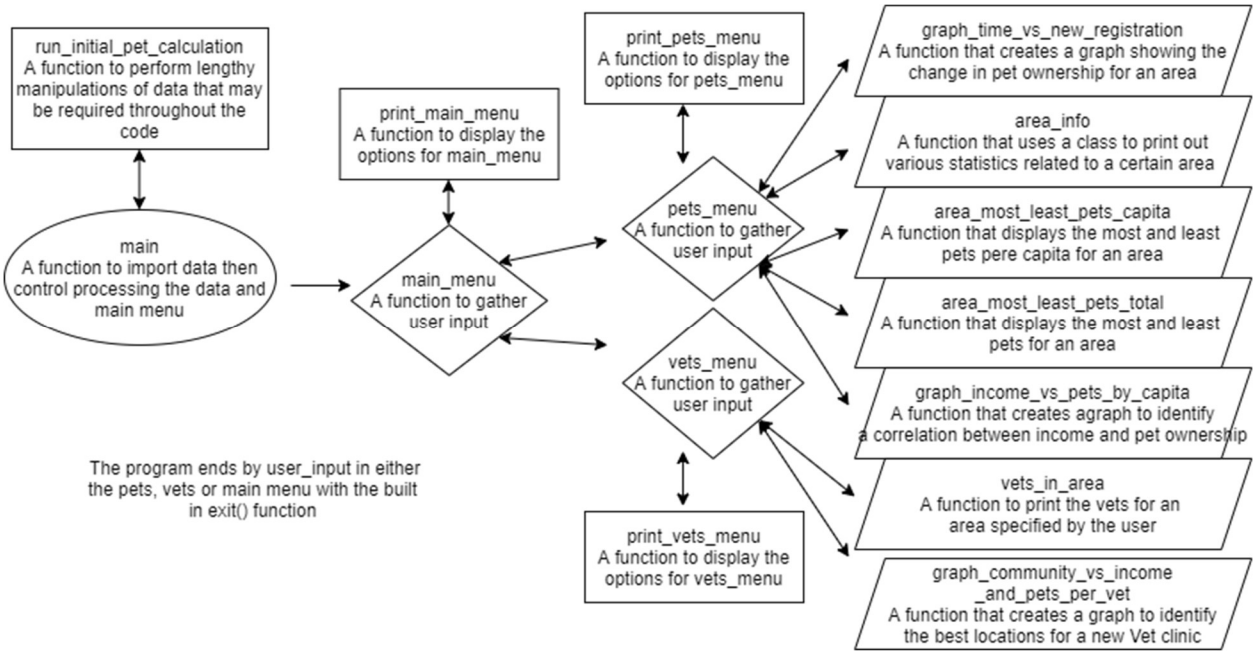
The program meets its first requirement near instantly upon executing; three CSV files are read using the np.genfromtext function, creating three separate arrays to work with. The next requirement, being able to receive two pieces of selection info and return information, is also met quickly upon program execution. The first prompt exists to choose which data to process – vets data or pets data. Afterwards, there are a plethora of options to choose from, graphing everything from city-wide trends to outputting information for individual communities. More details for the options can be seen in the flowchart below. The third requirement, data trends using numpy's max, mean, or min functions is met using the area_most_least_pets_capita and area_most_least_pets_total functions, both of which use the max and min functions to provide the most and least pets and pets per capita, respectively. Finally, the required matplotlib graphs are produced using the graph_time_vs_new_registration, graph_income_vs_pets_by_capita, and graph_community_vs_income_and_pets_per_vet functions, respectively.

Task management and timeline of milestones:

Goals Set Week of November 21	Completed?	Goals Set Week of November 28	Completed?	Goals Set Week of December 5	Completed?
Find useful data sets Dylan	Nov. 22	Complete initial_pet_calculations Ahmed	Dec. 2	Ensure proper docstrings Dylan and Ahmed	Dec. 6
Format data sets Ahmed	Nov. 24	Complete All vets_menu options Dylan	Dec. 2	Formalize documentation Dylan and Ahmed	Dec. 8
Create a plan for our project Dylan and Ahmed	Nov. 23	Complete All pets_menu options Dylan and Ahmed	Dec. 3	Prepare for presentation Dylan and Ahmed	Dec. 8
Design all user menus Dylan	Nov. 25				

Evidence of design process and planning:

Our plan going in was to allow us both work to on the code simultaneously and independently. To allow for this, we divided the code into numerous functions to allow for easier development and testing as well as to prevent conflicts in variable naming. Our plan going in for the function flow within our program is shown below. We stuck very closely to this plan. It helpful to have a general plan like this as it allowed for flexibility.



To see evidence of the design process and development the GitHub repository used in development can be found here: https://github.com/Aladfar/PetsVetsAnalysis-ENDG233FinalProject

Dataset:

Our data sets were taken from a variety of sources. pets_data.csv was taken from the City of Calgary. We made no major modifications. communities_data.csv was taken from great-news.ca. We made no major modifications. vets_data.csv had the list of vets taken from the Alberta Veterinary Medical Association. We then used google maps to identify the community and to determine if it was a 24 hours facility. All non cat and dog veterinarians were also removed.

Licensed Pets, Calgary Open Data, The City of Calgary, November 2021. [Online]. Available: https://data.calgary.ca/Services-and-Amenities/Licensed-Pets/5dgy-88cq

Veterinary Practice Directory, Alberta Veterinary Medical Association, November 2021. [Online]. Available: https://www.abvma.ca/company/roster/companyRosterView.html

Google Maps, Google, November 2021. [Online]. Available: https://www.google.com/maps

Calgary Community Demographics, Great News. [Online]. Available: https://great-news.ca/demographics/