**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.

**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 a user might input 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.

**Evidence of design process and planning:**

Our plan going in was to allow us both work to on the code simultaneously. 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 remarkably well to the plan.

A picture containing shape

Description automatically generated

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>

**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 | Nov. 22 | Complete  initial\_pet\_calculations | Dec. 2 | Ensure proper docstrings | Dec. 6 |
| Format data sets | Nov. 24 | Complete  All vets\_menu options | Dec. 2 | Formalize documentation | Dec. 8 |
| Create a plan for our project | Nov. 23 | Complete  All pets\_menu options | Dec. 3 | Prepare for presentation | Dec. 8 |
| Design all user menus | Nov. 25 |  |  |  |  |

**Dataset Citations:**

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

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

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