Final Project Summary

Group #42: Tony Tran and Sheikh Sarim

Project Overview

This project imports 3 country related csv and requests the user to input a region and then a menu pops up to request the user on what type of data they want to see.

This includes:

- A list of countries within a sub-region and their population density
- A pie chart of the region's countries area contribution percentages
- A bar graph of the region's mean endangered species
- A line graph comparing 2 countries population and their average
- The country within the region with the most and least area proportion
- The country within the region with the most and least total endangered species
- The country within the region with the largest and lowest population growth

Meeting Requirements:

Dataset Selection and Importing:

Used provided D2L csv file and np.genfromtxt() to import it in the if __name__ == '__main__':

User Interface and Analysis:

User interface: A print menu function that display the data options
User inputs: Regions, sub-regions, and countries
Input verification: Loop statement until there is a valid input
Outputs: A clean output line separated from other user interface texts

Analysis Syntax:

Used numpy method in the project includes:

- np.amax()
- np.amin()
- np.average()

The functions included:

- Creating a list of index for the countries in the region
- Creating a list of name for the countries in the region
- Finding the maximum and minimum value of a list

The class of country:

- Constructor: name and proportion
- Methods: print statement for country object that calls it

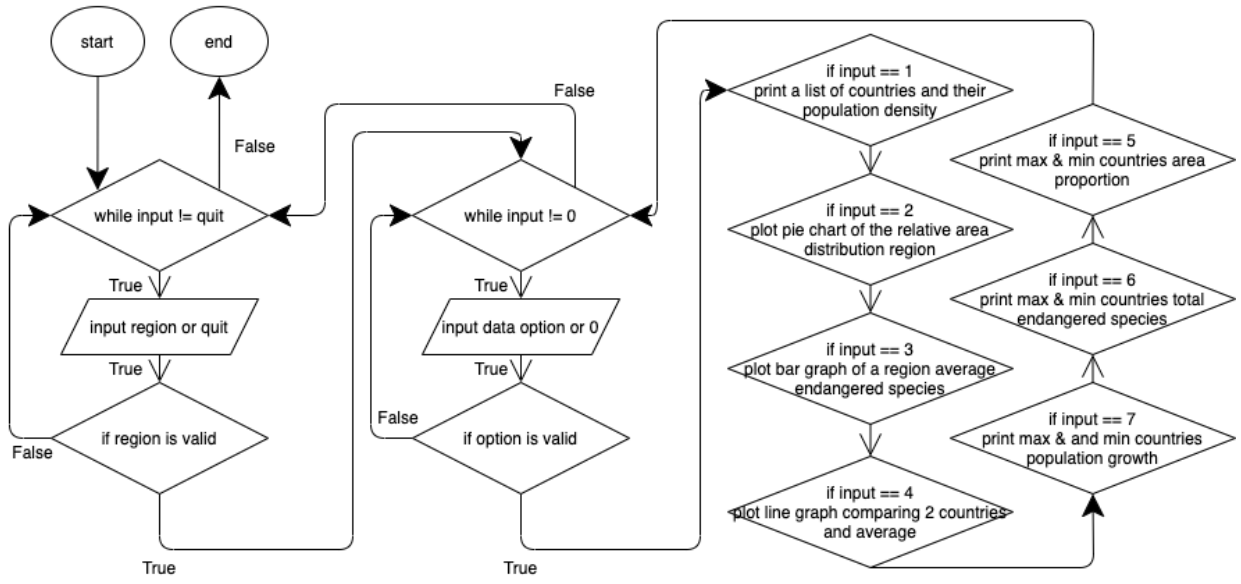
Data Plotting:

- Area pie chart with a title and legend
- Endangered species bar and population line graph with titles, axis labels, and legend

Milestones:

11/30/21: Tony - Creating region input loop and menu option loop
12/01/21: Tony - Import 3 csv data and created countries index and name functions and create "A list of countries and their population density"
12/02/21: Tony - Create "A pie chart comparing countries area" and "Data on the countries with the most and least area"
12/05/21: Sarim - Create "A bar graph of average endangered species" and "A line graph for a select country population change"
12/06/21: Sarim - Create "Data on the countries with the most and least endangered species" and "Data on the countries with the most and least population"
12/07/21: Tony - Refining codes, revising output statements, and editing comments

Flowchart:



Dataset Citation:

1.) ENDG 233: Programming with Data. (2021). *Country_Data*. Course provided dataset. Schulich School of Engineering, University of Calgary
2.) ENDG 233: Programming with Data. (2021). *Threatened_Species*. Course provided dataset. Schulich School of Engineering, University of Calgary
3.) ENDG 233: Programming with Data. (2021). *Population_Data*. Course provided dataset. Schulich School of Engineering, University of Calgary