Group members: Ledetom Kidane, Josue Aguilar, Ihsane,Abdeddaim, Evelyn Jah

What does our project do?

Our project is a monthly budget and expense tracker designed to help users manage their finances by tracking their expenses across various categories such as Housing, Groceries, Transportation, Entertainment and Healthcare. In addition, it sets budget limits for a user's income. To make the project more complex our program generated random budgets and expenses for various users from a created text file of names. We also had an additional file to create bar plots to visualize our data and gain insight into the financial struggles people deal with in society.

How to run the program from the command line:

For our program we utilized the python libraries, pandas, random, and seaborn. We had separate files named monthly_budget.py and Visualization.py. In addition, we had a text file with a list of names with each name on a different line. In the terminal to see the output of the file monthly_budget.py you must run, python monthly_budget.py. For the Visualization file to see the bar graph, you must run python Visualization.py. We also conducted unit tests in a file named unittestformonthlybudget.py. To properly run the unit test file you must run, pytest unittestformonthlybudget.py in the terminal.

How to use the program\how to interpret the program:

In order to use the program all that needs to be done is hit the run button on the main file. This file is labeled as monthly_budget.py. The rest of the files are supporting or for unit tests. Interpreting the program is also simple as when the file is run a dataframe will appear in the output that will contain several columns of budget and expenses and the names of each person. The totals will be added for each person at the end for both budgets and expenses. This information and data can also be seen as a CSV that will be created with the same exact information as the dataframe when the code is run. Lastly another file will be created that contains a visualization with a bar graph comparing the averages for each category of budget and expenses.

An annotated bibliography of all sources you used to develop the program and how you used them.

Statistical Data Visualization. seaborn. (n.d.). https://seaborn.pydata.org/

This source was used in order to gather more information on how to visualize data. Was incredibly useful for the visualization section of our project where we created a bar graph.

Pandas. pandas. (n.d.). https://pandas.pydata.org/

This source was used for making data frames which made it easier to use visualization and organize our data more efficiently. It was useful in the visualization file of our project for the dataframes.

GeeksforGeeks. *Python random module*.
https://www.geeksforgeeks.org/python-random-module/

Python random module was used for creation of our random budgets and expenses. It was incredibly useful to obtain more information about how exactly the module worked.

GeeksforGeeks. *Os path module in python*.
https://www.geeksforgeeks.org/os-path-module-python/

When creating unit tests we had to test if the file creation was done properly. This meant research had to be done on the os module to fully understand how to check file creations.