5001

Final Project Report: -

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Project Description: -

Coming from a culinary background having a deep insight on industry, being an advocate of climate change, I am keen on designing a tool, helping restaurants to be able to calculate their carbon footprint monthly. Hospitality not being regarded of the mainstream reasons contributing to the climate change yet has a substantial impact which needs to be regulated.

Project Changes: -

Initially I had planned to take all the data as user input, considering complexity of the data and the number of user inputs which were required would have made the program much more tedious and unintuitive for the user to use, so I rather took the data from an excel sheet which the user can fill as per their own convenience and the login to the program uploading the file, Rather than plotting Horizontal bar charts, Initially I had planned to use pie charts about on pie charts the data is much more cluttered considering for raw produce there were 12 elements required to be plotted on the graph.

In terms of Initially storing the data on a dictionary, I used a list, just because it becomes more easier to plot it on the graph. In terms of classes, I made 5 classes raw produce, paper, plastic , gas, food wastage. The equipment class initially planned has been incorporated in the gas class, there isn't any class for total carbon, that action is being performed in the main itself. Rest the core of the whole topic remains the same and result initially planned for has been achieved.

Reflection: -

This program was a great way to test all of the learnings which were made in the past 4 months, it was also a great exposure to using different libraries such as openpyxl, matplot, learned how to call an excel file and extract data from an excel file manipulate it using the classes which were made and eventually put them in a list to plot them on graphs, edited graphs by adding a header label, adding axis labels etc. It was the first time I was debugging a file more than 1000 lines using unitest test and defensive programming and getting 5 classes with a almost 20 methods, to be working all together and plotting graphs. Maybe if next time I would want to do something different is to organise my main better and maybe create a different class just to have all the data extracted from the excel file and only have it imported on the main function. I haven't used loop in the entire class, not sure if it's the

most efficient way to extract data, but if looping makes extracting data from an excel sheet much intuitive.

Citation: -

W3schools-matplot and openpyxl

Youtube-matplot and openpyxl

Geeks for geeks-For unitesting , openpyxl and matplot

Stackoverflow.

For data on carbon emission multiplier:-

https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data#:~:text=Global%20carbon%20emissions%20from%20fossil,increase%20from%201970%20to%202011.

https://sustainablehospitalityalliance.org/our-work/climate-action/