Project Three

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The design of my code involves two programs that interact to manage and analyze grocery purchase data. In my Python script, I first read a file containing a list of purchased items and their quantities, then create a new file called "frequency.dat" to store the frequency of each item. This is achieved by iterating through the input file, counting the occurrences of each word using a dictionary(k,v), and then writing the item and its frequency to the output file. I have implanted this function in the beginning so the user does not have to worry about manually doing it himself. Afterward, I use subprocess to call a C++ program named "frequency\_counter" with the argument "print\_all" to print all word frequencies.

The C++ program consists of a class called FrequencyCounter, which is responsible for counting word frequencies, writing them to a file, and providing various functionalities such as searching for a specific item's frequency, printing frequencies of all items, and displaying a histogram representing word frequencies. In the main function, I instantiate the FrequencyCounter class, count frequencies of words from the input file "CS210\_Project\_Three\_Input\_File.txt,". Then, I enter a loop to display a menu allowing the user to choose from different options like searching for an item's frequency, printing frequencies of all items, printing a histogram, or exiting the program. This setup ensures efficient management and analysis of grocery purchase data through interaction between the Python and C++ programs.