The GroceryTracker class can be utilized by creating a GroceryTracker object



When created, the GroceryTracker’s default constructor calls a function to create a map from groceryList.txt. It then calls a function that outputs the data into frequency.dat.

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Description automatically generated

createMapFromFile() first creates an input stream and uses that to open groceryList.txt. It then checks if the file was opened correctly.

A screenshot of a computer

Description automatically generated with medium confidence

createMapFromFile() then reads in each string from groceryList.txt, makes every letter in each string lowercase for consistent interaction, and then adds each string to m\_groceryCountMap as a key with its corresponding value being the number of times it appears in the list. The function then closes groceryList.txt.

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Description automatically generated

backupData() creates an output stream and uses that to open frequency.dat. It then checks if the file was opened properly. Finally, the function writes each item and its corresponding count to frequency.dat and closes it.

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Description automatically generated

The original GroceryTracker object that was created can now utilize menuInput() to handle user input



A while loop is utilized to control the menu. The input character is to hold the user’s menu selection. First the displayMenu() function is called to display the user prompts.

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Description automatically generated

displayMenu() prompts the user to enter a selection and displays the options. Input is handled by the original menuInput() function.

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User input is stored in the input variable and checked against the possible options. A nested if-else statement is utilized in order to ensure the input is an integer 1-4. Depending on the option chosen, the corresponding function is called and cin is cleared.

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searchGrocery() first takes a string input from the user and makes it all lowercase for consistent interaction. It then iterates through the m\_groceryCountMap using the find() function to see if the input string is in the map. If it is, the item is printed with its value. If not, the user is informed that the grocery was not found.

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printNumericList() iterates through m\_groceryCountMap and prints each item with its corresponding count.

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printHistogramList() iterates through m\_groceryCountMap and prints each item. It prints the counts with a character passed into a helper function(nCharString).

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nCharString is a helper function that takes an int and a character. It then prints that number of selected characters on a line.