CS210

PROJECT 3

MODULE 7

04/19/2024

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**Documentation of the ItemTracker Program**

The ItemTracker program is designed for the Corner Grocer to efficiently analyze daily sales data. It offers functionality to determine how frequently each item is purchased, aiding the store in optimizing layout and inventory decisions based on consumer purchasing patterns:

**ItemTracker Class**: Serves as the data manager within the program. It utilizes a `std::map` to store item names and their corresponding purchase frequencies. The class provides methods to load data from a file, retrieve specific item frequencies, list all items with their frequencies, and display a histogram of these frequencies.

**Main Function**: Manages user interaction through a simple console-based menu system. It enables users to select different functionalities such as searching for an item's frequency, viewing all items' frequencies, displaying a histogram, or exiting the program.

**Loading Data**: The `loadDataFromFile` method reads items from the `items.txt` file. Each line represents an item which is then tallied in the map to update its purchase frequency.

**Retrieving Frequency**: Through the `getItemFrequency` method, the program responds to user input by returning how often the specified item was purchased.

**Displaying Frequencies**: The `printAllFrequencies` method outputs a list of all items alongside their respective frequencies, enabling quick assessments of sales data.

**Histogram Display**: The `printHistogram` method visually represents the frequency of purchases for each item using asterisks, where the count of asterisks corresponds to the number of times an item was purchased.

The program operates via a console-based menu that presents the following options to the user:

1. Search for an item's frequency: Users can input an item name to find out its purchase frequency.

2. Print all items' frequencies: Displays a list of all items with their frequencies.

3. Print a histogram of all items: Shows a histogram representing the frequency of each item.

4. Exit the program: Allows the user to terminate the application.

To compile the program, use the command `make` in the terminal within the project directory. This command builds the executable `ItemTrackerProgram` using the Makefile. To run the program, execute `./ItemTrackerProgram`. Clean up compiled files using `make clean`.

The ItemTracker program provides essential insights into consumer behavior for the Corner Grocer through straightforward and interactive functionalities. Its ability to analyze and display sales data supports strategic business decisions regarding store layout and inventory management.