Corner Grocer Item Tracker Program Documentation

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Date: 4/17/2025

Purpose: To create an item-tracking program for the Corner Grocer using C++, where it accepts an input file for every day of grocery items and reports purchase frequency information in various formats.

Program Design and Functionality

The following C++ program has been developed for Chada Tech in response to the Corner Grocer's need for a program that analyzes data to help them reorganize their produce section.

The program has three C++ source files:

- `ItemTracker.h` and `ItemTracker.cpp`: These two files contain the declaration of a class that reads item data from a file, keeps each item's frequency in a map, and has methods to search for a specified item, print out all the item frequencies, print a histogram, and dump backup information into `frequency.dat`.

- `main.cpp`: This is the source file that performs user interaction through a menu-driven console interface, offering the user four options:

1. Searching for the frequency of an item

2. Printing frequency of all items

3. Printing a histogram

4. Exitting the program

At startup, the program simply reads from `CS210\_Project\_Three\_Input\_File.txt` and saves to a backup file named `frequency.dat`. The data persistence without user intervention is thus ensured.

Implementation Highlights

- Maps (`std::map`) are utilized for quick lookups of items by frequency and to keep data sorted.

- Input and output from files is done through the use of `ifstream` to read and `ofstream` to write.

- Printing of the histogram is done by looping over the map and printing asterisks according to frequency.

- Input validation was added to handle invalid menu choices and ensure smooth user experience.

Conclusion

This project demonstrates the usage of object-oriented programming, file handling, and data structures (maps) in C++. The architecture supports user input as well as data saving through file backup. The software efficiently helps Corner Grocer examine customer purchasing behaviors to maximize store layout.