

This C++ program is a console-based item frequency tracker for a grocery store. It reads item names from an input file (`Grocery.txt`), counts how often each item appears, and stores the results in a backup file (`frequency.dat`). It uses a `std::map` to efficiently track and retrieve item frequencies.

Encapsulates all core functionality:

```
7  class ItemTracker {
8  private:
9      std::map<std::string, int> itemFrequency;
10
11     // Load items from input file and count frequencies
12     void loadItemsFromFile(const std::string& filename) {
13         std::ifstream inFile(filename);
14         std::string item;
15         while (inFile >> item) {
16             ++itemFrequency[item];
17         }
18         inFile.close();
19     }
20
21     // Write frequencies to backup file
22     void writeFrequencyToFile(const std::string& filename) {
23         std::ofstream outFile(filename);
24         for (const auto& pair : itemFrequency) {
25             outFile << pair.first << " " << pair.second << std::endl;
26         }
27         outFile.close();
28     }
29
30 public:
31     // Constructor loads data and writes backup
32     ItemTracker(const std::string& inputFile, const std::string& backupFile) {
33         loadItemsFromFile(inputFile);
34         writeFrequencyToFile(backupFile);
35     }
36
37     // Get frequency of a specific item
38     int getItemFrequency(const std::string& item) {
39         return itemFrequency[item];
40     }
41
42     // Print all item frequencies
43     void printAllFrequencies() {
44         std::cout << "\nItem Frequencies:\n";
45         for (const auto& pair : itemFrequency) {
46             std::cout << pair.first << " " << pair.second << std::endl;
47         }
48     }
49
50     // Print histogram of item frequencies
51     void printHistogram() {
52         std::cout << "\nItem Frequency Histogram:\n";
53         for (const auto& pair : itemFrequency) {
54             std::cout << std::setw(12) << std::left << pair.first << " ";
55             for (int i = 0; i < pair.second; ++i) {
56                 std::cout << "*";
57             }
58             std::cout << std::endl;
59         }
60     };
61 }
```

And this Displays a simple menu:

```
// Display menu options
void displayMenu() {
    std::cout << "\nCorner Grocer Item Tracker\n";
    std::cout << "1. Search for item frequency\n";
    std::cout << "2. Display all item frequencies\n";
    std::cout << "3. Display histogram\n";
    std::cout << "4. Exit\n";
    std::cout << "Enter your choice: ";
}

int main() {
    ItemTracker tracker("Grocery.txt", "frequency.dat");
    int choice;
    std::string item;

    do {
        displayMenu();
        std::cin >> choice;

        switch (choice) {
            case 1:
                std::cout << "Enter item name: ";
                std::cin >> item;
                std::cout << item << " was purchased " << tracker.getItemFrequency(item) << " times.\n";
                break;
            case 2:
                tracker.printAllFrequencies();
                break;
            case 3:
                tracker.printHistogram();
                break;
            case 4:
                std::cout << "Exiting program...\n";
                break;
            default:
                std::cout << "Invalid option. Please try again.\n";
        }
    } while (choice != 4);

    return 0;
}
```