

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;
}
```