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Project Three

The program offers a robust set of functionalities designed to empower the Corner Grocer with actionable insights derived from its transaction records. Leveraging the power of C++, the program efficiently processes text records, calculates item frequencies, and presents the data in a user-friendly format.

**Design:**

1. **Main Functionality:** The program allows the user to perform several tasks related to analyzing the text records:
   1. **Frequency of Specific Word:** Option to input a specific word and get its frequency.
   2. **Frequency of All Items:** Option to print a list of all items with their frequencies.
   3. **Histogram of Frequencies:** Option to print a histogram representing the frequency of all items.
   4. **Backup Creation:** Automatically creates a backup file (frequency.dat) for backup purposes.
2. **Input File Handling:** The program reads the input file CS210\_Project\_Three\_Input\_File.txt to populate a map data structure where keys are words/items, and values are their frequencies.
3. **Menu-driven Interface:** It provides a user-friendly menu interface where users can select options by entering the corresponding number.
4. **Input Validation:** The program performs input validation to handle invalid user inputs gracefully.

**Functionality:**

1. **Reading Input File:** The program reads the input file and populates a map with word frequencies.
2. **Frequency of Specific Word:** Users can input a specific word, and the program returns its frequency.
3. **Frequency of All Items:** The program prints a list of all items with their frequencies.
4. **Histogram of Frequencies:** Users can visualize the frequency of all items in the form of a histogram.
5. **Backup Creation:** The program automatically creates a backup file (frequency.dat) containing the frequency data.

**Screenshots:**

Here are screenshots demonstrating the program's functionality:

1. **Menu Interface:**

A screenshot of a computer program

Description automatically generated

1. **Frequency of Specific Word:**

A screenshot of a computer program

Description automatically generated

1. **Frequency of All Items:**

A screenshot of a computer

Description automatically generated

1. **Histogram of Frequencies:**

A screenshot of a computer

Description automatically generated

1. **Backup File Creation:**

A screenshot of a computer program

Description automatically generated

These screenshots illustrate how the program functions as described, allowing users to analyze text records from the Corner Grocer effectively. The code is designed to be modular, easy to understand, and maintainable, following industry-standard best practices for C++ development.