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CS-210

Project 3 Code

#include <iostream>

#include <fstream>

#include <map>

#include <string>

using namespace std;

int main() {

// create a map to store item and frequency pairs

map<string, int> item\_freq;

// open input file

ifstream input\_file("U:/CS210\_Project\_Three\_Input\_File.txt");

// open output file to store backup data

ofstream output\_file("frequency.dat");

// read items from input file and store frequency in map

string item;

while (input\_file >> item) {

// increment the frequency of the item in the map

++item\_freq[item];

}

// write item-frequency pairs to output file for backup

for (auto i : item\_freq) {

output\_file << i.first << ' ' << i.second << endl;

}

// display menu options to the user

int option;

do {

cout << "Menu Options:" << endl;

cout << "1. Find frequency of an item" << endl;

cout << "2. Print frequency of all items" << endl;

cout << "3. Print histogram of all items" << endl;

cout << "4. Exit" << endl;

cout << "Enter your choice: ";

// take user input and store it in the option variable

cin >> option;

// perform an action based on the user's input

switch (option) {

case 1: {

// find the frequency of a particular item

string item\_to\_find;

cout << "Enter the item to find frequency of: ";

cin >> item\_to\_find;

cout << item\_to\_find << " appears " << item\_freq[item\_to\_find] << " times." << endl;

break;

}

case 2: {

// print the frequency of all items

cout << "Item Frequency" << endl;

for (auto i : item\_freq) {

cout << i.first << ' ' << i.second << endl;

}

break;

}

case 3: {

// print a histogram of all items

cout << "Item Histogram" << endl;

for (auto i : item\_freq) {

cout << i.first << " ";

// print a \* for each occurrence of the item

for (int j = 0; j < i.second; ++j) {

cout << "\*";

}

cout << endl;

}

break;

}

case 4: {

// exit the program

break;

}

default: {

// notify the user of an invalid option

cout << "Invalid option. Enter again." << endl;

break;

}

}

} while (option != 4);

// return 0 to indicate successful program completion

return 0;

}

Option 1 Screenshot

Text

Description automatically generated

Option 2 Screenshot

Text

Description automatically generated

Option 3 Screenshot

Text

Description automatically generated

Option 4 Screenshot

Text

Description automatically generated