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#include <iostream>
#include <fstream>
#include <iomanip>
#include <vector>
#include <map>
#include <iterator>
#include <algorithm>
#include <numeric>
#include <ctime>
#include <locale>

#include "transaction.hpp"
#include "account.hpp"
#include "viewhelper.hpp"

#define DATA_FILE "money.dat"

using namespace std;

/**
 * This function will read in the data file and pull all of the account
 * info and transaction data back into memory.
 * @param[out] accounts - This vector will be populated with accounts
 * @param[in] is - The input stream to read data from
 * @return - the number of transactions read in
 */
int readInDataFile(vector<Account>& accounts, istream& is) {
    string leadin;
    int transactionCount = 0;
    while(is) {
        is >> leadin;
        if (leadin.empty()) {
            continue;
        }
        else if (equal(begin(leadin), end(leadin), begin(BEGIN_ACCOUNT))) {
            Account a;
            is >> a;
            accounts.push_back(a);
        }
        else if (equal(begin(leadin), end(leadin), begin(BEGIN_TRANSACTION))) {
            Transaction t;
            is >> t;
            ++transactionCount;
            for_each(begin(accounts), end(accounts), [&t](Account& a) {
                string an = t.getAccountName();
                if (equal(begin(an), end(an), begin(a.getName())) {
                    a.addTransaction(t);
                }
            });
        }
        else {
            cerr << "Unknown header field found: " << leadin << "\n";
        }
        leadin.clear();
    }
    return transactionCount;
}

/**
 * This function will output all accounts and transactions to our file
 * so that they can be loaded at a later time.
 * @param[out] accounts - A vector reference that holds the accounts to output
 * @param[in] os - The output stream to write the data to
 */
void outputDataToFile(vector<Account>& accounts, ostream& os) {

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    for (Account& a : accounts) {
        os << a;
        for (const Transaction& t : a.getTransactions()) {
            os << t;
        }
    }
}

int main() {
    //Set cin and cout to use the system locale

    std::locale loc(""); //default locale should be system locale

    cout.imbue(loc);
    cin.imbue(loc);

    bool quit = false;
    vector<Account> accounts;
    ifstream is(DATA_FILE);
    //is.imbue(locale(is.getloc(), new Delimiter()));

    if (is) {
        int transactions = readInDataFile(accounts, is);
        cout << "Read in " << transactions << " transactions\n";
    }

    is.close();

    printBanner();

    //Main program loop
    while(!quit) {
        string command = prompt();

        if (command.empty()) {
            continue;
        }
        else if (equal(begin(command), end(command), begin("quit"))) {
            quit = true;
            break;
        }
        else if (equal(begin(command), end(command), begin("ledger"))) {
            for(const Account& a : accounts) {
                printAccountLedger(a);
            }
        }
        else if (equal(begin(command), end(command), begin("deposit"))) {
            Transaction t = readTransaction();
            addToAccount(t, accounts);
            cout << "Deposit complete\n\n\n";
        }
        else if (equal(begin(command), end(command), begin("withdraw"))) {
            Transaction t = readTransaction(true);
            addToAccount(t, accounts);
            cout << "Withdraw complete\n\n\n";
        }
        else if (equal(begin(command), end(command), begin("new"))) {
            Account a = readAccount();
            accounts.push_back(a);
            cout << "Account created\n\n\n";
        }
        else if (equal(begin(command), end(command), begin("delete"))) {
            deleteAccount(accounts);
            cout << "Account deleted\n\n\n";
        }
        else if (equal(begin(command), end(command), begin("help"))) {
            printHelp();
        }
    }
}

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        else {  
            cerr << "Unknown command\n";  
        }  
    }  
  
    ofstream ofs(DATA_FILE);  
    outputDataToFile(accounts, ofs);  
    ofs.close();  
  
    return 0;  
}
```