

Jorael Jamison

CS162

Phase 4 Homework Assignment

08/17/2021

Samediff Bank Program

Load & Save Data to & from a Binary File.

Data Loaded into an STL Vector.

Menu System: to Add Customers & Accounts / Delete Customers & Accounts / Print
Accounts Sorted by Balance / Print Accounts Sorted by Last Name.

```
/* Programmer: Jorael Jamison  
   Purpose: Samediff Bank Final Project  
   Date modified: 08/17/2021  
   Compiler: XCode C++ Compiler for Mac
```

```
   Samediff Bank Final Project
```

```
*/
```

```
#include<iostream>  
#include<iomanip>  
#include<fstream>  
#include<cctype>
```

```
using namespace std;
```

```
class SameDiffBank  
{  
private:  
    int accountNum;  
    char customerName[20];  
    int amount, input;  
    string account;  
public:  
    void newAccount();
```

```

    void getDeposit(int);
    void getWithdrawal(int);
    const void getReport();
    const int getAccountNum();
    const int setDeposit();
    const string accountType();
};

void SameDiffBank::newAccount()
{
    cout << "Enter a New Account Number:\n";
    cin >> accountNum;

    cout << "Account Holder Name:\n";
    cin.ignore();
    cin.getline(customerName, 20);

    cout << "\n*****Select an Account*****\n\n";
    cout << "1 = Checking Account\n"
    "2 = Savings Account\n"
    "3 = Certificate of Deposit\n"
    "4 = Money Market Account\n" << endl;
    cin >> input;

    if(input == 1)
        account = "CHK";
    else if(input == 2)
        account = "SAV";
    else if(input == 3)
        account = "CD";
    else if(input == 4)
        account = "MM";
    else
        cout << "Invalid Input" << endl;

    cout << "Deposit Amount:";
    cin >> amount;
    cout << endl;

    cout << "Congrats on Your New Account With SameDiff
Bank!\n";
}

const int SameDiffBank::getAccountNum()
{
    return accountNum;
}

```

```

}

const string SameDiffBank::accountType()
{
    return account;
}

void SameDiffBank::getDeposit(int x)
{
    amount = amount + x;
}

void SameDiffBank::getWithdrawal(int x)
{
    amount = amount - x;
}

const int SameDiffBank::setDeposit()
{
    return amount;
}

const void SameDiffBank::getReport()
{
    cout << left << setw(15) << accountNum
         << left << setw(15) << customerName
         << left << setw(15) << account
         << left << setw(15) << amount << endl;
}

void writeBinary();
void depositAmt(int);
void withdrawal(int);
void masterReport();
void deleteAccount(int);

int main()
{
    char selection;
    int AccNum;

    do
    {
        cout<<"\n*****SameDiff Bank*****\n";
        cout<<"\n*****Main Menu*****\n\n";
        cout << "1 = Create a New Account\n"

```

```

"2 = Deposit to Account\n"
"3 = Withdrawal from Account\n"
"4 = Master Report All Customers\n"
"5 = Delete an Account\n"
"6 = Exit Program\n" << endl;

cout << "Select an Option: \n";
cin >> selection;
system("cls");

switch(selection)
{
case '1':
    writeBinary();
    break;
case '2':
    cout << "Enter Account Number:"; cin >> AccNum;
    depositAmt(AccNum);
    break;
case '3':
    cout << "Enter Account Number:"; cin >> AccNum;
    withdrawal(AccNum);
    break;
case '4':
    masterReport();
    break;
case '5':
    cout << "Enter Account Number:"; cin >> AccNum;
    deleteAccount(AccNum);
    break;
case '6':
    cout << "Exiting Program, Goodbye!";
    break;
default :
    cout << "Invalid Selection, must choose 1 through 6"
<< endl;
}
cin.ignore();
cin.get();
}while(selection != '6');

return 0;
}

void writeBinary()
{

```

```

    SameDiffBank obj;

    ofstream outFile;
    outFile.open("SameDiffBank.dat",ios::binary|ios::app);
    obj.newAccount();
    outFile.write(reinterpret_cast<char *> (&obj),
sizeof(SameDiffBank));
    outFile.close();
}

void depositAmt(int nums)
{
    int deposit;
    bool file = 0;
    SameDiffBank obj;
    fstream dataFile;

    dataFile.open("SameDiffBank.dat",
ios::binary|ios::in|ios::out);
    if(!dataFile)
    {
        cout<<"Error - Unable to Locate File!";
        return;
    }
    while(!dataFile.eof() && file == 0)
    {
        dataFile.read(reinterpret_cast<char *> (&obj),
sizeof(SameDiffBank));
        if(obj.getAccountNum() == nums)
        {
            cout << "Enter Deposit Amount:";
            cin >> deposit;
            obj.getDeposit(deposit);

            int pos=(-1)*static_cast<int>(sizeof(obj));

            dataFile.seekp(pos,ios::cur);
            dataFile.write(reinterpret_cast<char *> (&obj),
sizeof(SameDiffBank));
            file = 1;
        }
    }
    dataFile.close();
    if(file == 0)
        cout << endl;
}

```

```

void withdrawal(int nums)
{
    int w, balance;
    bool file = 0;
    SameDiffBank obj;
    fstream dataFile;

    dataFile.open("SameDiffBank.dat",
ios::binary|ios::in|ios::out);

    if(!dataFile)
    {
        cout<<"Error - Unable to Locate File!";
        return;
    }

    while(!dataFile.eof() && file == 0) // end of file
bitflag
    {
        dataFile.read(reinterpret_cast<char *> (&obj),
sizeof(SameDiffBank));
        if(obj.getAccountNum() == nums)
        {
            cout << "Enter Withdrawal Amount: ";
            cin >> w;
            balance = obj.setDeposit() - w;

            if(balance < 0)
                cout << "Insufficient Funds to Withdrawal";
            else
                obj.getWithdrawal(w);

            int pos=(-1)*static_cast<int>(sizeof(obj));

            dataFile.seekp(pos,ios::cur);
            dataFile.write(reinterpret_cast<char *> (&obj),
sizeof(SameDiffBank));
            file = 1;
        }
    }
    dataFile.close();
    if(file == 0)
        cout << endl;
}

```

```

void masterReport()
{
    SameDiffBank obj;

    ifstream inFile;
    inFile.open("SameDiffBank.dat",ios::binary);

    if(!inFile)
    {
        cout<<"Error - Unable to Locate File!";
        return;
    }

    cout <<"*****SameDiffBank Account Summary
Report*****" << endl;
    cout << left << setw(15) << "Account #"
        << left << setw(15) << "Customer Name"
        << left << setw(15) << "Account Type"
        << left << setw(15) << "Balance" << endl;
    cout
<<"*****" <<
endl;

    while(inFile.read(reinterpret_cast<char *> (&obj),
sizeof(SameDiffBank)))
    {
        obj.getReport();
    }
    inFile.close();
}

void deleteAccount(int nums)
{
    SameDiffBank obj;
    ifstream inFile;
    ofstream outFile;

    inFile.open("SameDiffBank.dat",ios::binary);
    if(!inFile)
    {
        cout<<"Error - Unable to Locate File!";
        return;
    }

    outFile.open("TempFile.dat",ios::binary);
    inFile.seekg(0,ios::beg);

```

```
    while(inFile.read(reinterpret_cast<char *> (&obj),
sizeof(SameDiffBank)))
    {
        if(obj.getAccountNum()!=nums)
        {
            outFile.write(reinterpret_cast<char *> (&obj),
sizeof(SameDiffBank));
        }
    }
    inFile.close();
    outFile.close();

    remove("SameDiffBank.dat");
    rename("TempFile.dat", "SameDiffBank.dat");
}
```

/* Output:



*****SameDiff Bank*****

*****Main Menu*****

- 1 = Create a New Account
- 2 = Deposit to Account
- 3 = Withdrawal from Account
- 4 = Master Report All Customers
- 5 = Delete an Account
- 6 = Exit Program

Select an Option:

4

sh: cls: command not found

*****SameDiffBank Account Summary Report*****

Account #	Customer Name	Account Type	Balance
-----------	---------------	--------------	---------

123456	Jorael Jamison	MM	1000
--------	----------------	----	------

123457	Jason Smith	CHK	2195
--------	-------------	-----	------

|

*****SameDiff Bank*****

*****Main Menu*****

- 1 = Create a New Account
- 2 = Deposit to Account
- 3 = Withdrawal from Account
- 4 = Master Report All Customers
- 5 = Delete an Account
- 6 = Exit Program

Select an Option:

2

sh: cls: command not found

Enter Account Number:123457

Enter Deposit Amount:10000

*****SameDiff Bank*****

*****Main Menu*****

- 1 = Create a New Account
- 2 = Deposit to Account
- 3 = Withdrawal from Account
- 4 = Master Report All Customers
- 5 = Delete an Account
- 6 = Exit Program

Select an Option:

4

sh: cls: command not found

*****SameDiffBank Account Summary Report*****

Account #	Customer Name	Account Type	Balance
-----------	---------------	--------------	---------

123456	Jorael Jamison	MM	1000
--------	----------------	----	------

12345	on Smith	CHK	12195
-------	----------	-----	-------

|

*****SameDiff Bank*****

*****Main Menu*****

- 1 = Create a New Account
- 2 = Deposit to Account
- 3 = Withdrawal from Account
- 4 = Master Report All Customers
- 5 = Delete an Account
- 6 = Exit Program

Select an Option:

3

sh: cls: command not found

Enter Account Number:123456

Enter Withdrawal Amount: 500

*****SameDiff Bank*****

*****Main Menu*****

- 1 = Create a New Account
- 2 = Deposit to Account
- 3 = Withdrawal from Account
- 4 = Master Report All Customers
- 5 = Delete an Account
- 6 = Exit Program

Select an Option:

4

sh: cls: command not found

*****SameDiffBank Account Summary Report*****

Account #	Customer Name	Account Type	Balance
-----------	---------------	--------------	---------

123456	Jorael Jamison	MM	500
12345	on Smith	CHK	12195

*****SameDiff Bank*****

*****Main Menu*****

- 1 = Create a New Account
- 2 = Deposit to Account
- 3 = Withdrawal from Account
- 4 = Master Report All Customers
- 5 = Delete an Account
- 6 = Exit Program

Select an Option:

5

sh: cls: command not found

Enter Account Number:123457

*****SameDiff Bank*****

*****Main Menu*****

- 1 = Create a New Account
- 2 = Deposit to Account
- 3 = Withdrawal from Account
- 4 = Master Report All Customers
- 5 = Delete an Account
- 6 = Exit Program

Select an Option:

4

sh: cls: command not found

*****SameDiffBank Account Summary Report*****

Account #	Customer Name	Account Type	Balance
-----------	---------------	--------------	---------

1234	Screenshot : ael Jamison	MM	500
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*/
