**Eyad Mohamed AbdelMohsen Ghanem**

**customer.h**

//  
// Created by Eyad Mohamed AbdelMohsen Ghanem on 26/12/2024.  
//  
#include <iostream>  
#include "bank\_account.h"  
using namespace std;  
  
*/\*\*  
 \* A bank customer with a checking and a savings accounts.  
 \*/*class customer  
{  
private:  
 int customer\_number;  
 int pin;  
 bank\_account\* checking\_account;  
 bank\_account\* savings\_account;  
  
public:  
 */\*\*  
 \* Constructs a customer with a given number and PIN.  
 \* @param customer\_number the customer number  
 \* @param pin the personal identification number  
 \* @param checking\_balance  
 \* @param savings\_balance  
 \*/* customer(const int customer\_number, const int pin, const double checking\_balance, const double savings\_balance)  
 {  
 this->customer\_number = customer\_number;  
 this->pin = pin;  
 checking\_account = new bank\_account();  
 savings\_account = new bank\_account();  
 checking\_account->set\_balance(checking\_balance);  
 savings\_account->set\_balance(savings\_balance);  
 }  
  
 */\*\*  
 \* Tests if this customer matches a customer number  
 \* and PIN.  
 \* @param customer\_number a customer number  
 \* @param pin a personal identification number  
 \* @return true if the customer number and PIN match  
 \*/* bool match(const int customer\_number, const int pin) const  
 {  
 return this->customer\_number == customer\_number && this->pin == pin;  
 }  
  
 */\*\*  
 \* Gets the checking account of this customer.  
 \* @return the checking account  
 \*/* bank\_account get\_checking\_account() const  
 {  
 return \*checking\_account;  
 }  
  
 */\*\*  
 \* Gets the savings account of this customer.  
 \* @return the savings account  
 \*/* bank\_account get\_savings\_account() const  
 {  
 return \*savings\_account;  
 }  
  
 */\*\*  
 \* Gets the customer number of this customer.  
 \* @return the customer number  
 \*/* int get\_customer\_number() const  
 {  
 return customer\_number;  
 }  
  
 */\*\*  
 \* Gets the account pin of this customer.  
 \* @return the account pin  
 \*/* int get\_pin() const  
 {  
 return pin;  
 }  
  
 void print\_data() const  
 {  
 cout  
 << "customer:\t\t" << customer\_number  
 << "\nPIN:\t\t\t" << pin  
 << "\nchecking balance:\t" << checking\_account->get\_balance()  
 << "\nsaving balance:\t\t" << savings\_account->get\_balance()  
 << endl << endl;  
 }  
};

**bank\_account.h**

//  
// Created by Eyad Mohamed AbdelMohsen Ghanem on 26/12/2024.  
//  
#include <iostream>  
using namespace std;  
  
class bank\_account  
{  
private:  
 double balance;  
  
public:  
 bank\_account()  
 {  
 balance = 0;  
 }  
  
 void set\_balance(double balance)  
 {  
 this->balance = balance;  
 }  
  
 double get\_balance() const  
 {  
 return balance;  
 }  
};

**test.cpp**

//  
// Created by Eyad Mohamed AbdelMohsen Ghanem on 26/12/2024.  
//  
#include <iostream>  
#include "customer.h"  
  
#define CUSTOMER\_DATA\_FILE "customer\_data.txt"  
  
using namespace std;  
  
int main()  
{  
 customer c1(1, 2002, 5000, 22500);  
  
 customer c2(2, 1995, 6000, 23500);  
  
 // Test customer data  
 cout << "Testing customer data..." << endl;  
 c1.print\_data();  
 c2.print\_data();  
  
 // Test match function  
 cout << "Testing match function..." << endl;  
 if (c1.match(1, 2002))  
 {  
 cout << "Customer 1 matched successfully!" << endl;  
 }  
 else  
 {  
 cout << "Customer 1 matching failed!" << endl;  
 }  
  
 if (c2.match(1001, 1234))  
 {  
 cout << "Customer 2 matched successfully!" << endl;  
 }  
 else  
 {  
 cout << "Customer 2 matching failed!" << endl;  
 }  
 cout << endl;  
  
 return 0;  
}