#include <iostream>

#include <string>

using namespace std;

class BankAccount {

private:

    string accountNumber;

    double balance;

public:

    BankAccount(string \_accountNumber, double \_balance) {

        accountNumber = \_accountNumber;

        balance = \_balance;

    }

    string getAccountNumber() {

        return accountNumber;

    }

    double getBalance() {

        return balance;

    }

    void deposit(double amount) {

        balance += amount;

    }

    bool withdraw(double amount) {

        if (balance >= amount) {

            balance -= amount;

            return true;

        } else {

            return false;

        }

    }

    void display() {

        cout << "Account Number: " << accountNumber << endl;

        cout << "Current Balance: " << balance << endl;

    }

};

class Transaction {

private:

    BankAccount\* sender;

    BankAccount\* receiver;

    double amount;

public:

    Transaction(BankAccount\* \_sender, BankAccount\* \_receiver, double \_amount) {

        sender = \_sender;

        receiver = \_receiver;

        amount = \_amount;

    }

    bool execute() {

        if (sender->withdraw(amount)) {

            receiver->deposit(amount);

            return true;

        } else {

            return false;

        }

    }

    void display() {

        cout << "Transaction Details:" << endl;

        cout << "Sender Account Number: " << sender->getAccountNumber() << endl;

        cout << "Receiver Account Number: " << receiver->getAccountNumber() << endl;

        cout << "Transferred Amount: " << amount << endl;

    }

};

int main() {

    // Create BankAccount instances

    BankAccount account1("123456789", 1000);

    BankAccount account2("987654321", 2000);

    // Display initial account details

    cout << "Initial Account Details:" << endl;

    account1.display();

    account2.display();

    // Perform transactions

    Transaction transaction1(&account1, &account2, 500);

    Transaction transaction2(&account2, &account1, 300);

    // Execute transactions

    cout << "\nExecuting Transactions:" << endl;

    transaction1.execute();

    transaction2.execute();

    // Display final account details

    cout << "\nFinal Account Details:" << endl;

    account1.display();

    account2.display();

    // Display transaction details

    cout << "\nTransaction 1 Details:" << endl;

    transaction1.display();

    cout << "\nTransaction 2 Details:" << endl;

    transaction2.display();

    return 0;

}