

ATM Design Document

Author: Ziqi Tan U88387934

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Introduction

This is a pure java project of a one-time ATM with java swing GUI.

Functions

1. User Registration

You need to set up your username, social security number, address, phone number and password.

2. User Login

3. Manager Login

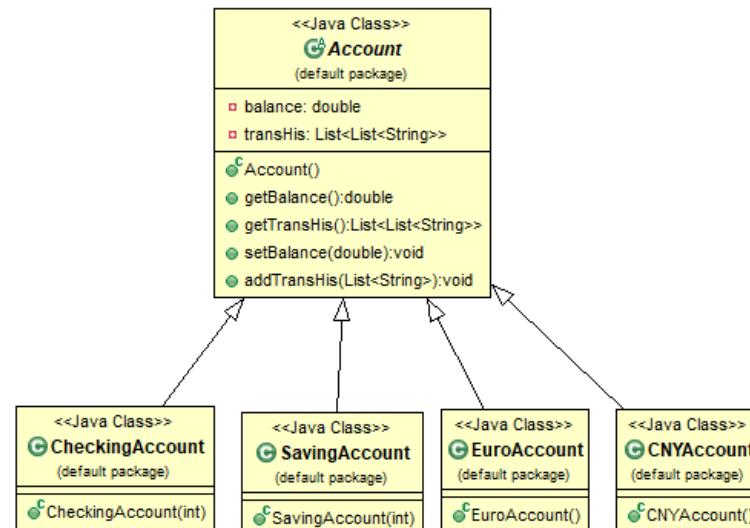
Manager can get all transaction history of all accounts of every customer.

4. User Transaction

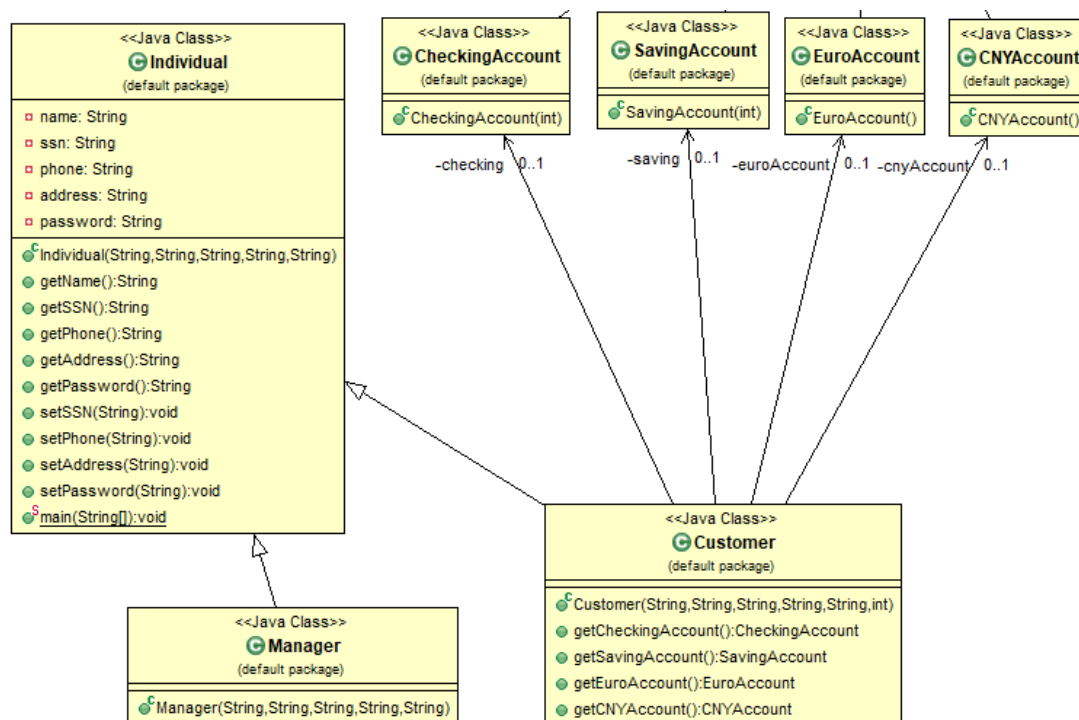
- (1) Withdraw from checking account.
- (2) Deposit money in checking account or saving account.
- (3) Transfer between checking account and saving account.
- (4) Transfer to others.
- (5) Submit loan application.
- (6) Inquire the transaction history of every account.
- (7) Purchase foreign currency (EUR or CNY).
- (8) Withdraw foreign currency (EUR or CNY).

Object Design

1. Account Object Design



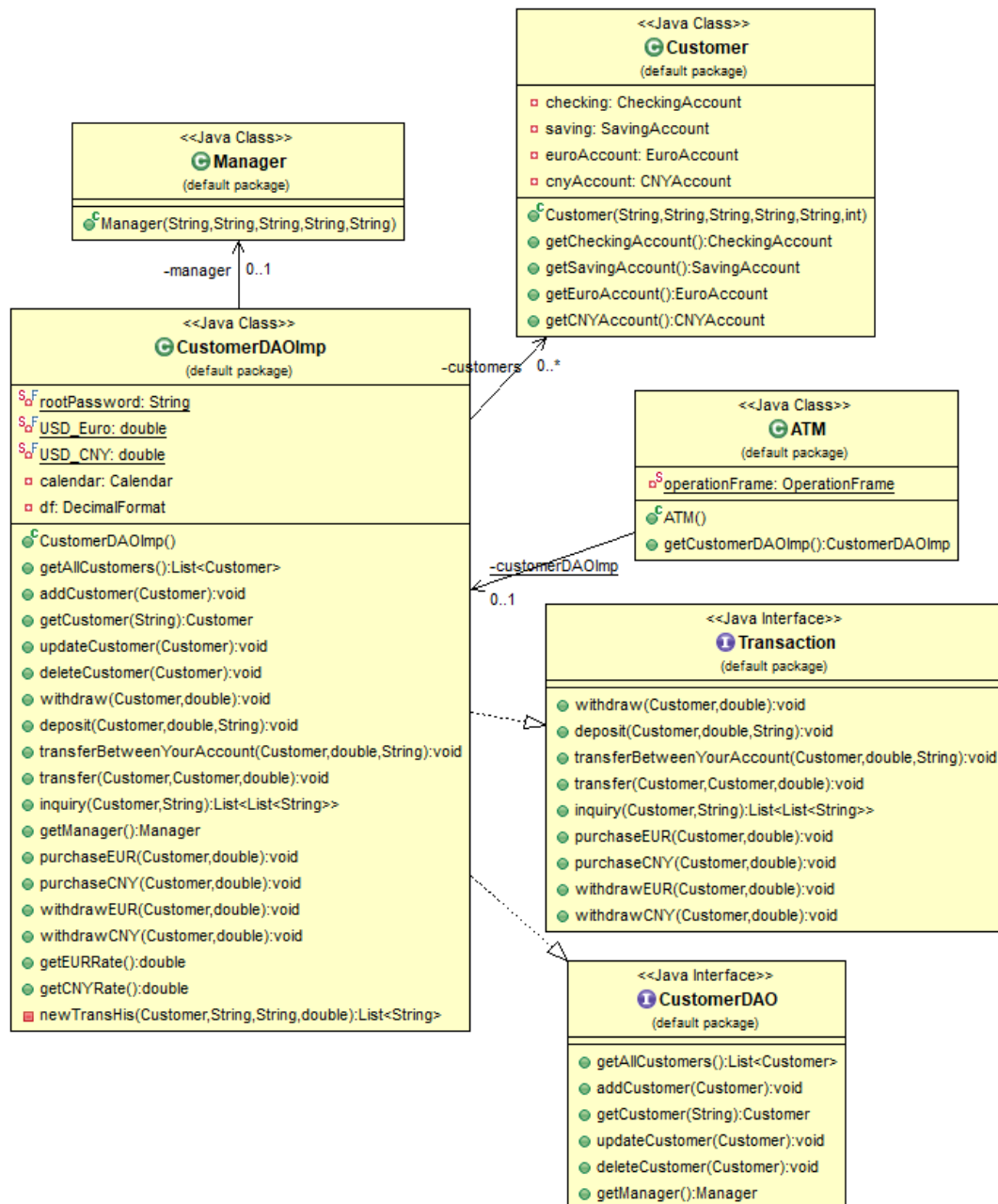
2. Individual Object Design



Class Individual is a general class. Every individual who wants to register in the bank must provide his/her legal name, social security number, phone number and address.

Class Customer has four different accounts: checking account, saving account, EUR account and CNY account.

3. Data Access Object (DAO) Pattern

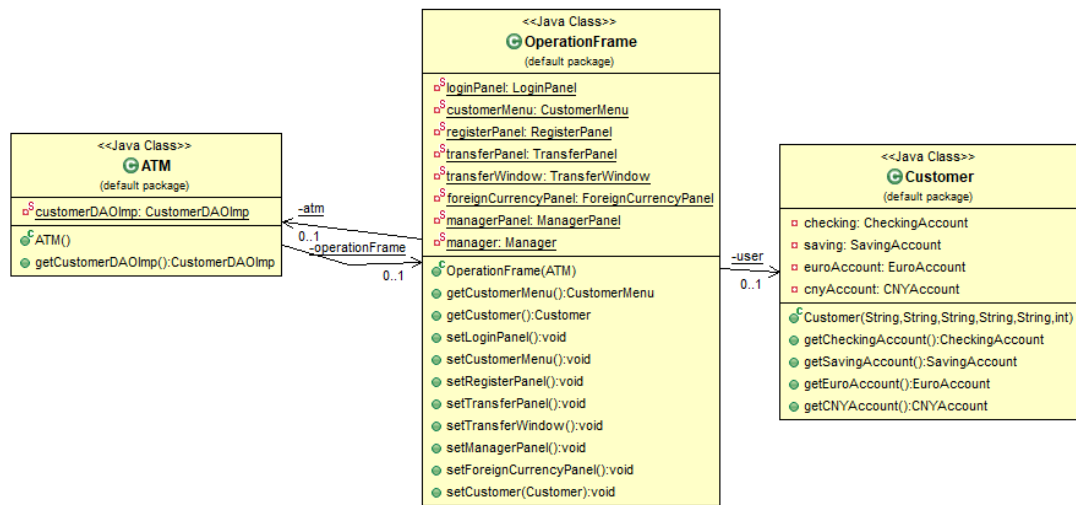


Adopt data access object pattern to sperate front end and back end.

A virtual database is set up in **Class CustomerDAOImp**, which serves as an interface between GUI and database.

All customer transactions including withdraw, deposit, transfer and inquiry are the methods in **Class CustomerDAOImp**.

4. GUI Object Design



Class ATM includes the operation window of the automatic teller machine and the Class `customerDAOImp`.

Class OperationFrame is the operation window extends `JFrame`. This class has all the operation sub-panels. When switching the panel, set the **`setEnabled(Boolean)`** and **`setVisible(boolean)`** to present the corresponding panel.

A demo of this program

1. Run `ATMDemo.java`

```

1  /*
2  Author: Ziqi Tan
3  */
4  public class ATMDemo {
5
6      public static void main(String[] args) {
7          // TODO Auto-generated method stub
8          new ATM();
9      }
10
11 }
12
  
```

2. This is a login welcome board.

Welcome to Bank of BBUI!

Username:

Password:

Manager Login

Password: 123456789

Dear grader:

For your convience, there has been two customers in the hard code.

Customer 1:

Username: ziqi

Password: 123

Customer 2:

Username: tf

Password: 123456

Have fun!

3. Input the username and the password to login.

Welcome to Bank of BBUI!

Checking Account: 300.00 USD

Saving Account: 300.00 USD

Euro Account: .00 EUR

CNY Account: .00 CNY

4. Withdraw from checking account.

Welcome to Bank of BBUI!

Checking Account: 300.00 USD

Saving Account: 300.00 USD

Euro Account: .00 EUR

CNY Account: .00 CNY

Input

Withdraw:

100

Welcome to Bank of BBUI!

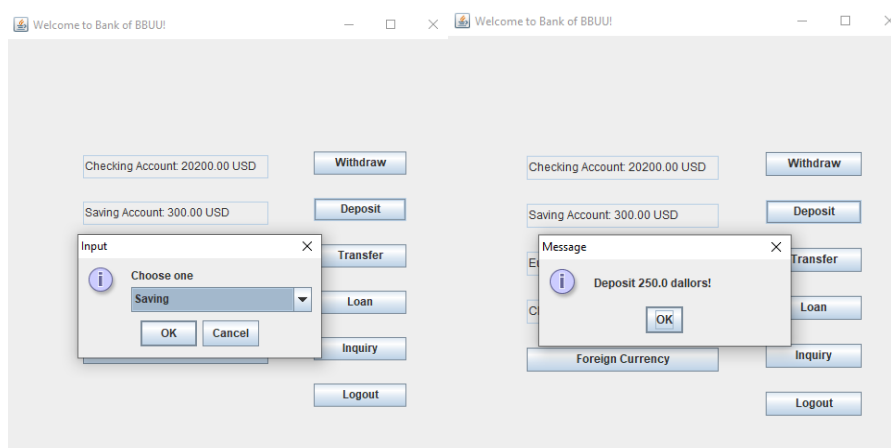
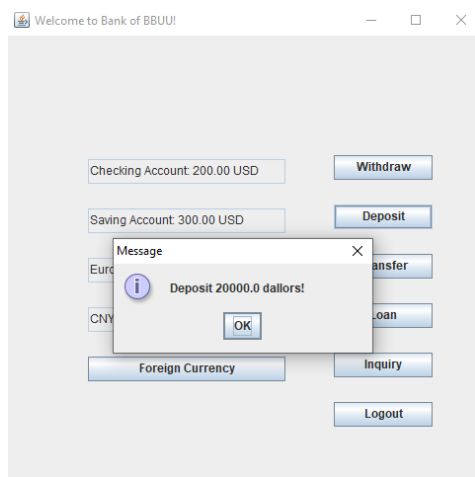
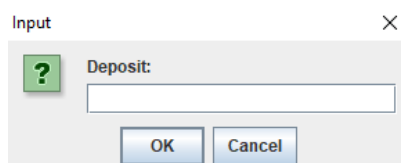
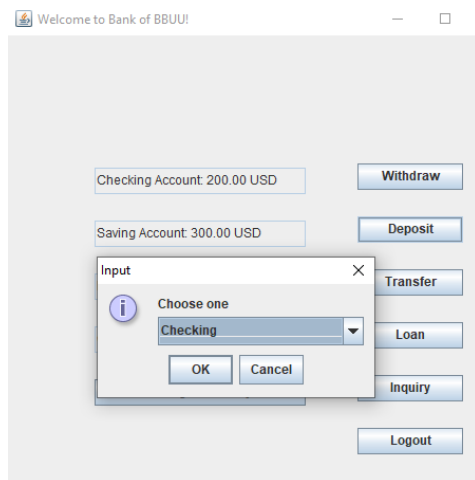
Checking Account: 200.00 USD

Saving Account: 300.00 USD

Euro Account: .00 EUR

CNY Account: .00 CNY

5. Deposit.



6. Transfer between your account.

Welcome to Bank of BBUU!

Transfer between your accounts

Transfer to others

Return

Input

Choose one

from checking to saving

from checking to saving

from saving to checking

Input

Amount:

666

OK Cancel

Message

Transfer 666.0 to saving account!

OK

Checking Account: 19534.00 USD

Saving Account: 1216.00 USD

7. Transfer to others.

Recipient

tf

Amount

666

Submit Return

Message

Transfer successfully!

OK

8. Inquiry the transaction history on tf's account.

Welcome to Bank of BBUU!

Username:

Password:

Manager Login

Password: 123456789

Dear grader:

For your convience, there has been two customers in the hard code.

Customer 1:

Username: ziqi

Password: 123

Customer 2:

Username: tf

Password: 123456

Have fun!

Checking Account: 1166.00 USD

Saving Account: 500.00 USD

Time	Sender	Recipient	Amount
Fri Oct 18 13:41:50 EDT 2019	----	This account	500
Fri Oct 18 13:41:50 EDT 2019	ziqi	checking account	666.00

9. Foreign currency purchase

Foreign Currency Account

Purchase

Withdraw

Return

Input

?

EUR Amount:

1000

OKCancel

Input

i

Choose one

EUR

OKCancel

Checking Account: 17756.89 USD

Withdraw

Saving Account: 1216.00 USD

Deposit

Euro Account: 1000.00 EUR

Transfer

CNY Account: .00 CNY

Loan

Foreign Currency

Inquiry

Logout

10. Withdraw foreign currency.

Foreign Currency Account

Purchase

Withdraw

Input

?

Withdraw:

250

OKCancel

Checking Account: 17756.89 USD

Withdraw

Saving Account: 1216.00 USD

Deposit

Euro Account: 750.00 EUR

Transfer

CNY Account: .00 CNY

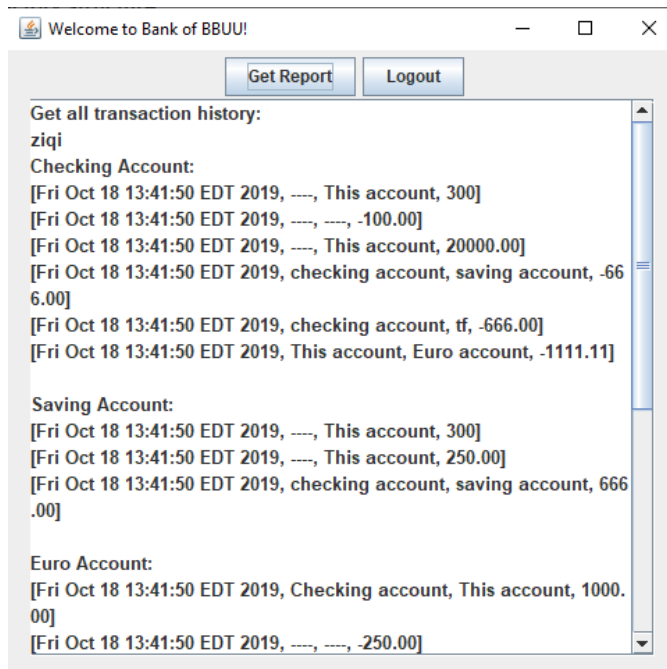
Loan

Foreign Currency

Inquiry

Logout

11. Manager login and get all transaction history.



Get all transaction history:

ziqu

Checking Account:

[Fri Oct 18 13:41:50 EDT 2019, ----, This account, 300]

[Fri Oct 18 13:41:50 EDT 2019, ----, ----, -100.00]

[Fri Oct 18 13:41:50 EDT 2019, ----, This account, 20000.00]

[Fri Oct 18 13:41:50 EDT 2019, checking account, saving account, -666.00]

[Fri Oct 18 13:41:50 EDT 2019, checking account, tf, -666.00]

[Fri Oct 18 13:41:50 EDT 2019, This account, Euro account, -1111.11]

Saving Account:

[Fri Oct 18 13:41:50 EDT 2019, ----, This account, 300]

[Fri Oct 18 13:41:50 EDT 2019, ----, This account, 250.00]

[Fri Oct 18 13:41:50 EDT 2019, checking account, saving account, 666.00]

Euro Account:

[Fri Oct 18 13:41:50 EDT 2019, Checking account, This account, 1000.00]

[Fri Oct 18 13:41:50 EDT 2019, ----, ----, -250.00]

CNY Account:

tf

Checking Account:

[Fri Oct 18 13:41:50 EDT 2019, ----, This account, 500]

[Fri Oct 18 13:41:50 EDT 2019, ziqu, checking account, 666.00]

Saving Account:

[Fri Oct 18 13:41:50 EDT 2019, ----, This account, 500]

Euro Account:

CNY Account: