Team #5 - Bofeng Liu, Abhinav Bobba and Bryant Liriano

Design Document:

Software:

When we designed the Banking system we decided to divide the program into three main components. The base class, The Data Access Object classes and the GUI classes. This division was chosen to help divide the program into key parts. The Base classes are the foundational aspect of the system as it creates the objects that the Manager and Customer will use. The DAO classes are designed to store information that the customer uses to a database. Finally, the GUI classes are used to create visual displays for the users to choose various options for their accounts.

The Base class we designed as being the bare-bone portion of the program. Using the Inheritance principle of Object-Oriented Design we created three super classes, those being the Accounts, Currencies and Users Class. We chose to create these super-classes as these could be used to create specified sub-classes. For the Accounts Class, we extended it to be able to create Checking, Savings and Security Accounts. Although similar in nature they each had a different role to play in the software. For the Currencies class we created an interface for it to utilize for Currency Conversion. The interface holds the Currency exchange rate so that USD can be converted to and from CNY and RUB. This SuperClass also provides the basic information structure for the three currencies that the Bank accepts. Finally the Users SuperClass was designed so that the common functions like setters and getters were used by both the Managers and the Customers. Along with the superclasses we created classes for actions that typically occur in a bank such as Collaterals, Loans and Stocks. Along with these we decided to create classes for deals and transactions. This was to be able to keep track of such deals and transactions and later store them. The classes are scalable as we did not use any hard coded values nor did we design the classes to have any limitations except for the ones requested.

The DAO Classes were designed to create a pathway for information and instances created by our Base classes to be stored in our database. The Database we chose to use was MySQL, as it was Java-compatible and provided an efficient way to create tables of our classes. For these classes we decided to first create a Database SuperClass. The Database class links to a MySQL server and it makes it possible to create tables for traceable and ever changing instances. All the DAO classes are designed to alter or retrieve information for the specific table assigned. We designed it to be reusable by extending the classes from Database, leaving the possibility to add future classes. Also it is scalable as the classes are able to withstand a large amount of accounts and other table information.

The GUI classes we designed were created with the purpose of making it simple for the users to maneuver. By utilizing the GUI techniques we learned in lecture we were able to create numerous user interfaces so that a customer or manager could use the online bank with ease. We decided to create a homepage that would lead to other GUI classes as it only made sense for a banking system to have a default page. We decided on creating the necessary displays that one would see at a regular bank such as withdrawal ,deposit ,loans and security

measures.The addition of these classes was to give the User a variety of options as well along with an enjoyable experience.

Teamwork:

Since this was a Group Project we divided the work in a way that helped with each individual's strength. Two people worked on the front and back end of the program and the other worked on the Database portion of it. One member was in charge of developing all the necessary documentation that was required. To ensure that everyone was doing their part a variety of pathways used to communicate. To communicate instructions and/or assignments Electronic message and Slack were used. These methods were the primary way of communication that was used in the team. Github and Google Drive were used to turn in deliverables to the other teammates. Github was used to put all the coding part of the assignment while Google Drive was used for team editing.

Classes: To get a further descriptions on the classes used in the banking system refer to the ReadMe document.