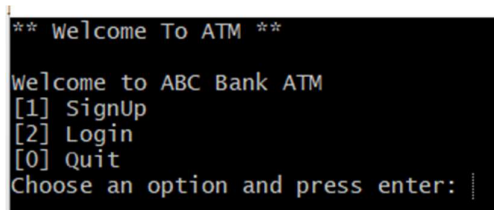# ATM

Table of Contents

1. About

ATM is a command line interface application. It shall emulate the basic functionality of ATM. To use the system, the user need to be authenticated before allowing into the system. The credentials consists of a password and a unique username. After entering the correct credentials, the user shall log into the atm and shall see the bank details.

2. Project Overview

The application is a command line interface (terminal) application that does not have a graphical user interface. The user only navigates by typing a number from an option list and then press enter to execute the command. Typing 0 and pressing enter in any part of the application will send you back to the main menu.

2.1 Project Description

When the User opens the atm application, it shall ask the user to Signup if he is not a registered member. However, the user shall directly login, if he is a member. When the user logged in, he shall see the bank details. If the user directs logs in without registering, the application asks the user to signup.
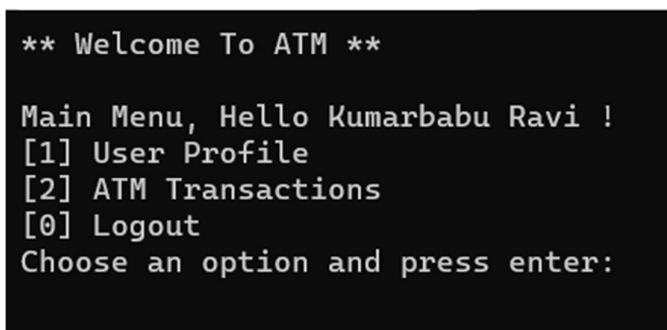
```
** Welcome To ATM **

Welcome to ABC Bank ATM
[1] SignUp
[2] Login
[0] Quit
Choose an option and press enter:
```

When the user enters option#1, he can sign up. But, when enters option #2, he can directly log into the bank. When the user logs in ,he shall see the following options.

❖ User Profile

❖ ATM Transactions

❖ Logout

The Screenshot is shown below:

```
** Welcome To ATM **

Main Menu, Hello Kumarbabu Ravi !
[1] User Profile
[2] ATM Transactions
[0] Logout
Choose an option and press enter:
```

2.1.1 UserProfile

When the user enters option # 1, the app must show the user the following options, where he shall see the following options:

❖ Edit profile

❖ Change Password

❖ Delete profile

The screenshot of this shall be shown below:


```
** Welcome To ATM **

User Profile Menu:
[1] Edit Profile
[2] Change Password
[3] Delete Profile
[0] Back
Choose an option and press enter:
```

2.1.1.1   Edit profile:
When the user enters option#1, he shall edit his profile by changing his password and username. The screenshot is shown below:

2.1.1.2   Change password:
When the user enters option#2, he shall change his password and update his password. He shall login to the bank, by entering new password. The screenshot is shown below.

2.1.1.3   Delete profile:
When the user enters option#3, he shall delete his account from the application. The screenshot is shown below.

2.1.2   ATM transactions
When the user enters option #2, the app must show the user all the bank Transactions. The following options shall be displayed.

❖ View Balance

❖ Deposit

❖ Withdraw

❖ Transfer

The screenshot is shown below:


```
** Welcome To ATM **

Transaction Menu Options:
[1] View Balance
[2] Deposit
[3] Withdraw
[4] Transfer
[0] Back
Choose an option and press enter:
```

2.1.2.1   View Balance
The user shall view his balance in the bank, when he enters option#1.The screenshot is shown below:

```
** Welcome To ATM **

Last 10 Transactions:
|---------------------------------------------------------------------|
| Hello, Kumarbabu Ravi                                               |
| Available Balance   :                                    4430.0 |
|---------------------------------------------------------------------|
| S.No | Type      | Date                 | Sender    |      Amount|
|---------------------------------------------------------------------|
| 1    | TRANSFER  | 07-09-2022 12:45:12  | RISHI     |      -100.0|
| 2    | WITHDRAW  | 07-09-2022 12:44:29  | SELF      |       -70.0|
| 3    | DEPOSIT   | 07-09-2022 12:44:06  | SELF      |      +200.0|
| 4    | DEPOSIT   | 07-09-2022 11:10:55  | SELF      |      +200.0|
| 5    | DEPOSIT   | 07-09-2022 10:55:58  | SELF      |      +120.0|
| 6    | WITHDRAW  | 07-09-2022 00:04:39  | SELF      |      -100.0|
| 7    | DEPOSIT   | 07-09-2022 00:04:22  | SELF      |     +1000.0|
| 8    | TRANSFER  | 07-09-2022 00:00:58  | RISHI     |      -120.0|
| 9    | DEPOSIT   | 06-09-2022 23:42:39  | SELF      |      +100.0|
| 10   | TRANSFER  | 06-09-2022 23:28:58  | RISHI     |      -100.0|
|---------------------------------------------------------------------|
```

2.1.2.2   Deposit

When the user enters option#2,he shall deposit money in his account. The screenshot is shown below:

```
** Welcome To ATM **

Deposit option:
Please Enter the amount you want to deposit: 1000
Successfully Deposited!

[C] Continue
[Q] Quit
Options:
```

2.1.2.3   Withdraw

When the user enters the option#3, he shall withdraw the money from his account. if the money exceeds the limit, he shall not withdraw from his account. The screenshot is shown below:

```
** Welcome To ATM **

Withdraw option:
Please Enter the amount you want to withdraw: 200
Successfully Withdrawn!

[C] Continue
[Q] Quit
Options:
```

2.1.2.4 Transfer

When the user enters the option#4, he shall transfer the money to another account. However, in this application, the user shall transfer the money to other account by only the username. If he enters the username, if the account is present with that username, the application shall ask the user money to transfer, otherwise, it shows an invalid option. The screenshot is shown below:

```
** Welcome To ATM **

Transfer your money:
Enter account holder details: rishi
Enter amount: 200
Successfully Transferred!

[C] Continue
[Q] Quit
Options:
```

2.1.2.5 Error

When the user enters an invalid option ,or an empty space, he gets an error message saying invalid option. The screenshot of this shown below.

```
** Welcome To ATM **

Transaction Menu Options:
[1] View Balance
[2] Deposit
[3] Withdraw
[4] Transfer
[0] Back
Choose an option and press enter: hdjsa
Invalid option
Choose an option and press enter: -1
Invalid option
Choose an option and press enter:
Invalid option
Choose an option and press enter: 567
Invalid option
Choose an option and press enter:
```

3. Implementation and Design

3.1 Technologies

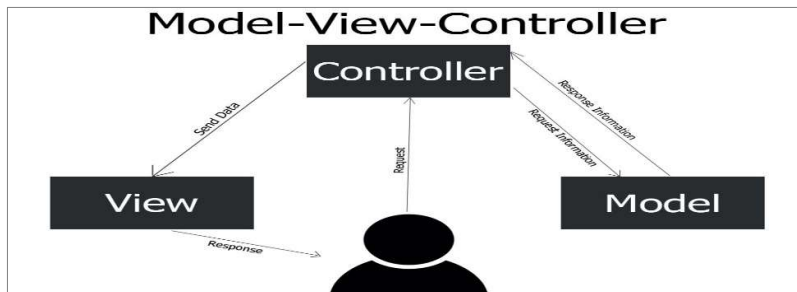The following technologies are used in designing and developing the ATM application.

❖ Java – Coding language for implementing the ATM application

❖ Eclipse - IDE Purpose

❖ Microsoft Visio - UML Diagram tool

❖ Microsoft word – Document preparation

3.2 Design and Flow diagram

3.1.1 Architecture and design

Simple MVC architecture shall be followed in designing the ATM application, see below.

The Model contains only the pure application data, it contains no logic describing how to present the data to a user.
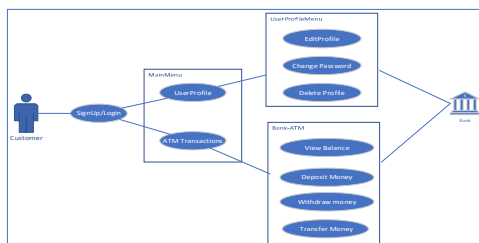
The View presents the model's data to the user. The view knows how to access the model's data, but it does not know what this data means or what the user can do to manipulate it.

The Controller exists between the view and the model. It listens to events triggered by the view (or another external source) and executes the appropriate reaction to these events. In most cases, the reaction is to call a method on the model. Since the view and the model are connected through a notification mechanism, the result of this action is then automatically reflected in the view.

Next, the view module is mainly responsible for preparing the menus by using controller cache data based on the *User* choice.

3.2.1 Usecase diagram

A Use case diagram is a graphical depiction of a user's possible interactions with a system. Here, in this application there is only one user. The below diagram shows the interaction of the user with the system.

3.2.2   Class Diagram

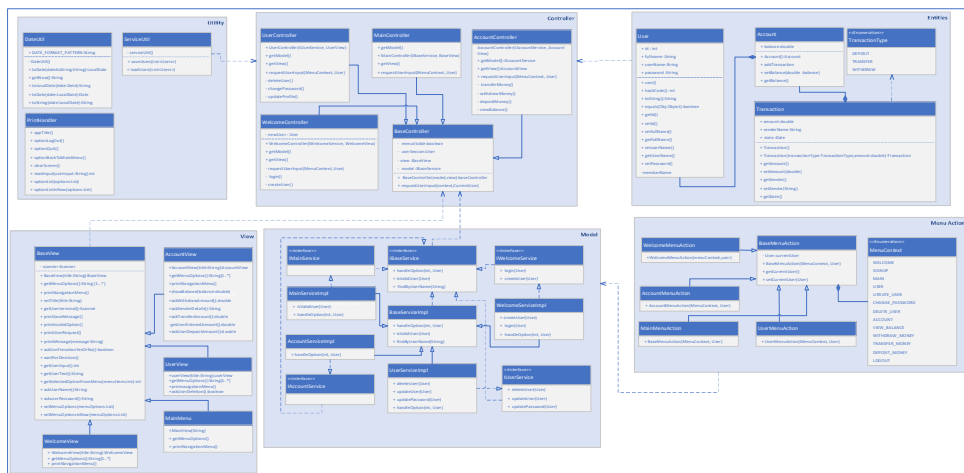This section shall be explained about the relationship between different classes.

Model: All the model classes shall be followed java bean's structure and implemented Jackson API

Controller: Here there are five controllers in the application. They are Account Controller, Welcome Controller, User Controller, Main Controller and Base Controller These interact with the Base Controller and controls the application.

View: The ATM application is responsible for building the user interface and displayed in the terminal/console based on the user inputs and performs the validation checks. We have five views. They are User View, Account View, Main view, Base view and Welcome view.
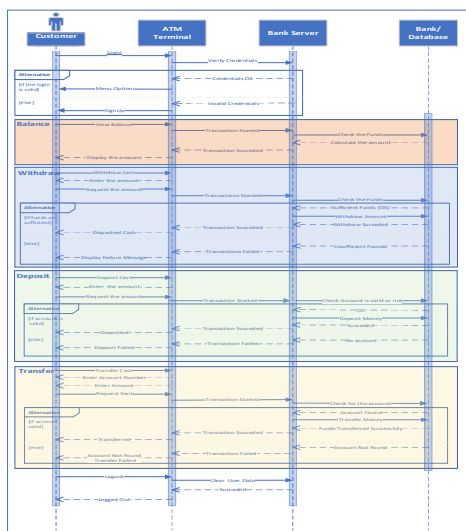
❖   Meu Context enumeration shall be used for constants purpose and holds the menus title.

❖   Transaction Type enumeration shall be holding constant Transaction types
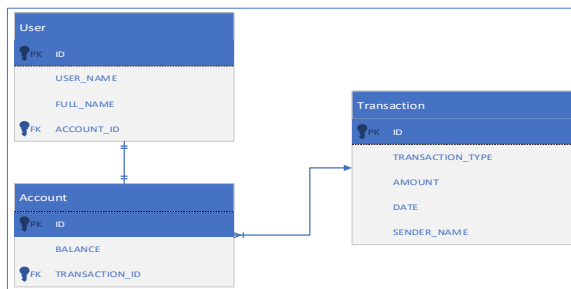
The class diagram of Atm is shown below:

3.2.3   Sequence diagram

The sequence diagram explains about the logic interaction between the objections in the system and execution flow.

3.2.4   Model diagram

The below picture explains about the module relationship and the below three models are introduced in ATM application.
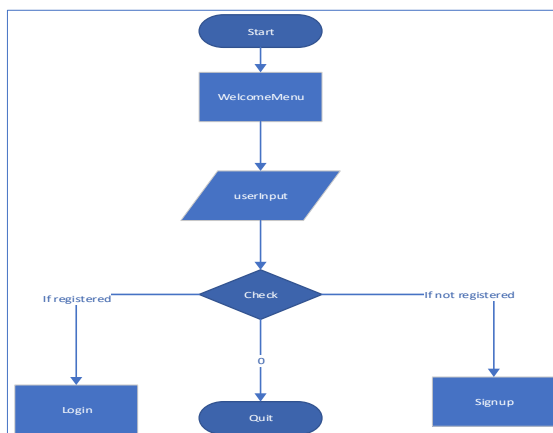

3.2.5   Flow Chart of ATM

This section helps to identify the different menus mandatory steps and explains the execution flow.
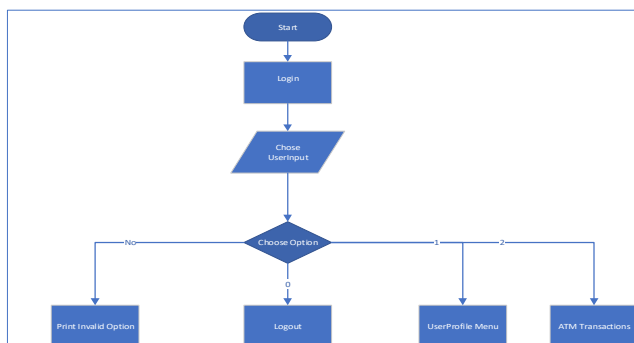
3.2.5.1   *Main*

The Welcome menu shall be shown to the user initially, it will provide few options as described in below picture.
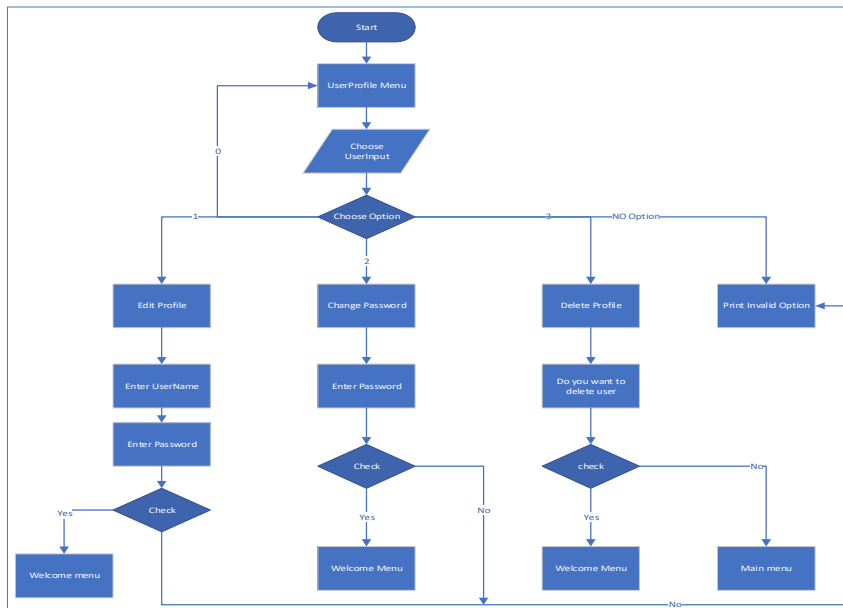

3.2.5.2   *Login Menu*

The Login menu shall be shown to the user, when he is registered. It provides the following options, when the user logs into the application.

3.2.5.3   User Profile Menu

When the user logs into the application, he shall the see the options of User Profile Menu and Transaction menu. It provides few options, as described in the below picture.

3.2.5.4   Transaction Menu

When the user clicks on the Transaction, he shall have all the transaction menu options of the application. The options are shown in the below picture.