# Design Overview for Bank ATM

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# Summary of Program

**Describe what you want the program to do… one or two paragraphs.**

My goal is project was to be able to replicate the software interfaces that we interacted with within ATM stands. I want to be able to capture the functionalities of an ATM software, such as performing transactions, viewing account details, and making changes to personal details. My program allows the user to make three different types of transactions: deposit, transfer, and withdraw. The program will also have a list of transactions history to keep track of the money that is going in and out of the user’s account. Each transaction will contain details of the amount of money, date and time of occurrence, account number, transaction type, and a description of transaction. Specifically, the receiver of a transfer transaction can see who sent them the money in the transaction description.

**Include a sketch of sample output to illustrate your idea.**

# Required Roles

Describe each of the classes, interfaces, and any enumerations you will create. Use a different table to describe each role you will have, using the following table templates.

**Table 1 – Class: Account**

|  |  |  |
| --- | --- | --- |
| Responsibility | Type Details | Notes |
| The role of this class is to hold account details such as account id, customer, pin, and account type for the Bank for records. | string \_id  Customer \_customer  int \_pin  string \_typeAccount | This class is declared as an abstract and is used as the baseline for further development in SavingsAccount and CurrentAccount classes. |

**Table 2 – Class: Bank**

|  |  |  |
| --- | --- | --- |
| Responsibility | Type Details | Notes |
| The role of this class is to hold a list of accounts that are registered under a bank brand. | string \_bankName  List<Account> \_listAccount | Each object that was created from this class will act as a separate bank. While it has a list to hold Account objects, it can also loop through the list to verify if the account in question exist in the list. This function is used for user authentication. |

**Table 3.1 – Class: ATM**

|  |  |  |
| --- | --- | --- |
| Responsibility | Type Details | Notes |
| The role of this class is to act as the main interface where all the command inputs from the user will be processed. | string \_location  Bank \_bank  Account \_currentAccount  Customer \_currentUser  AccountType \_accountType | Each object that was created from this class will act as a separate ATM that is associated with either the same or different bank. The details of an ATM such as location and associated bank may vary. |

**Table 3.2 – Enumeration of Class ATM: AccountType**

|  |  |
| --- | --- |
| Value | Notes |
| Saving | This value is registered to the variable \_accountType when the user selects their saving account. |
| Spending | This value is registered to the variable \_accountType when the user selects their spending account. |
| None | This is the default value for the program’s initialisation and user logging out. |

**Table 4 – Class: Customer**

|  |  |  |
| --- | --- | --- |
| Responsibility | Type Details | Notes |
| The role of this class is to hold personal information of a customer. Details include name, phone, email, and address. | string \_name  string \_phone  string \_email  string \_address | Each object that is created under this class will act as a separate customer and it is intended to act the scenario where account creation was done by a bank administrator. This class also allows user to view their information or update them. |

**Table 5 – Class: Transaction**

|  |  |  |
| --- | --- | --- |
| Responsibility | Type Details | Notes |
| The role of this class is to record every transaction that was made by the user. Details of a transaction includes date, amount of money for transaction, description, and transaction type. | Date \_transactionDate  string \_type  string \_desc  double \_amount | All details of a transaction will be compressed into one singular string and formatted before returning the value. |

**Table 6 – Class: SavingsAccount**

|  |  |  |
| --- | --- | --- |
| Responsibility | Type Details | Notes |
| The role of this class is to act as a separate bank account that is primarily for saving money. When a customer register with the bank, they will receive both saving account and current account. | List<Transaction> \_transaction  double \_balance | This class is the child class of Account abstract class, which it contains all of Account class’s details as the base for SavingsAccount, with additional details such as transaction list and account balance. |

**Table 7 – Class: CurrentAccount**

|  |  |  |
| --- | --- | --- |
| Responsibility | Type Details | Notes |
| The role of this class is to act as a separate bank account that is primarily for daily spending. When a customer register with the bank, they will receive both saving account and current account. | List<Transaction> \_transaction  double \_balance | This class is the child class of Account abstract class, which it contains all of Account class’s details as the base for CurrentAccount, with additional details such as transaction list and account balance. |

**Table 8 – Interface: IBalance**

|  |  |  |
| --- | --- | --- |
| Responsibility | Type Details | Notes |
| This interface is made to ensure consistency in Account class, so that both SavingsAccount and CurrentAccount are not missing any necessary functions. | bool BalanceCheck(double amount);  void PrintTransaction(); | Since Account is the abstract class, the functions that were prewritten in IBalance will be enforced on SavingsAccount and CurrentAccount. |

# Class Diagram

Provide an initial design for your program in the form of a class diagram.

Ảnh có chứa văn bản, số, Phông chữ, ảnh chụp màn hình

Mô tả được tạo tự động

# Sequence Diagram

Provide a sequence diagram showing how your proposed classes will interact to achieve a specific piece of functionality in your program.

Ảnh có chứa văn bản, biểu đồ, Kế hoạch, Song song

Mô tả được tạo tự động

Ảnh có chứa văn bản, biểu đồ, Kế hoạch, Song song

Mô tả được tạo tự động

Ảnh có chứa văn bản, biểu đồ, Song song, Kế hoạch

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