# USE CASE MODEL

## ACTOR-GOAL LIST

|  |  |
| --- | --- |
| **Actor** | **Goals** |
| Customer | * Update customer online account profile * Login into the online banking system * Open an online banking account * Deposit money from Virtual Wallet to an account * Withdraw money from an account and top up a Virtual Wallet * Transfer money from customer accounts to any other bank accounts * Request bill payments * View account transactions * View account balance * View monthly statements * Book appointment with bank representatives |
| Bank Staff | * Create an online banking account * Process bill payment requests * View requested appointments |
| System Administrator | * View user activities * Reset account passwords |
| Virtual Wallet Provider  (External Actor) | * Process Virtual Wallet serial number checking * Process Virtual Wallet amount checking * Process Virtual Wallet top up request * Process Virtual Wallet withdraw request |

## CONTEXT DIAGRAM



## PACKAGE : MAIN

### UC1 : Update profile

**Primary Actor**

* Customer

**Preconditions**

* Customer has logged into the system

**Postconditions**

* Success end condition
  + Changes on customer profile are stored in System
  + “Update profile” entry is added to user activities log in System
* Failure end condition
  + Nothing is changed in customer profile
* Minimal guarantee
  + Changes on customer profile are stored in System only when customer confirms the changes

**Main Success Scenario**

1. Customer needs to update their profile
2. Customer opens “Update Profile” screen
3. Customer modifies information on “Update Profile” screen, includes

* Address
* Telephone numbers
* Email address
* Personal phrase
* Personal images
* Three security questions and answers
* Password

1. Customer requests to save changes on the profile
2. System validates the profile changes
   1. If the changes are not valid, System shows invalid changes and information to guide customer make valid changes. Customer repeat step 3 to make changes on the profile
3. System asks customer to confirm changes
4. Customer confirm the changes
5. System updates the customer profile and adds an “Update profile” entry in user activities log

### UC2: Login to System

**Primary Actor**

* Customer

**Preconditions**

* Customer has an account with System

**Postconditions**

* Success end condition
  + Customer can use functionalities of System
  + “Customer login” entry is added to user activities log in System
* Failure end condition
  + Customer cannot use functionalities of System
  + “Customer login failure” entry is added to user activities log in System

**Main Success Scenario**

1. Customer needs to access System
2. Customer enter his/her primary account number and asks System to login
3. System shows Customer’s personal phrase and image and asks Customer to enter password
4. Customer enter password
5. System verifies the entered password
   1. If the entered password is not correct, System asks Customer to enter the correct password. Customer repeats step 4.
6. System randomly decides and chooses one of security questions and asks Customer to enter the answer
   1. Customer enters the answer
   2. System verifies the answer
      1. If the answer is not correct, System asks Customer to enter the correct answer. Customer repeats step 6.1
7. System shows “Account Summary” screen

### UC3: Open account

**Primary Actor**

* New customer
* Bank staff

**Postconditions**

* Succes end condition
  + Customer account is created in System with several bank accounts selected by Customer
  + “Register account” entry is added to user activities log in System
  + “Create account” entry is added to user activities log in System
* Failure end condition
  + “Register account” entry is added to user activities log in Syste
  + “Cancel account registration” entry is added to user activities log in System
* Minimal guarantee
  + Customer account is created in System only when Bank Staff request customer account creation

**Main Success Scenario**

1. New customer needs to register an account
2. New customer requests to register an account
3. System asks new customer to fill in registration form with information:

* Full name
* Address
* Telephone numbers
* Email address
* Personal image
* Personal phrase
* 3 security questions and answers

1. New customer fills in the form and submit it
2. System validates the form
   1. If the form in invalid, System shows invalid filled in information and asks new customer to enter it with correct information
   2. New customer repeats step 3
3. System shows welcome message to customer and asks New customer to bring two identification with photos to a bank branch to complete the creation account process
   1. If new customer doesn’t bring two identification to a bank branch to complete the creation account process in 4 weeks, System will cancel the registration and adds “Cancel account registration” entry to user activities log
4. New customer brings two identification with photos to a bank branch
5. Bank staff check the identification
   1. If identification is not valid, Bank staff asks New customer to bring valid identification next time
   2. New customer repeats step 7
6. Bank staff consults Customer about different types of bank accounts, include
   1. Checking account
   2. Saving account with different plans (See Section X.X)
   3. GIC account
   4. Credit card
7. Customer selects several bank accounts according to his/her needs
8. Bank staff requests System to create bank accounts
9. System shows a list of bank account types with plans and ask Bank staff to select
10. Bank staff selects the bank account types according to Customer selection
11. System creates customer account with the selected bank accounts and add “Create account” entry in user activities log

### UC4: Deposit from Virtual Wallet

**Primary Actor**

* Customer

**Supporting Actor**

* Virtual Wallet Provider
* Bank Database Server

**Preconditions**

* Customer has logged in to System

**Postconditions**

* Success end condition
  + The deposit amount is added to Customer selected bank account
  + The deposit amount is subtracted from Customer Virtual Wallet
  + “Deposit from virtual wallet” entry is added to user activities log in System
* Failure end condition
  + “Fail to deposit from virtual wallet” entry is added to user activities log in System
* Minimal guarantee
  + The depositing is performed only when Customer confirms the deposit request

**Main Success Scenario**

1. Customer needs to deposit to an bank account using a Virtual Wallet
2. Customer select a bank account and request to do deposit from Virtual Wallet
3. System asks for Virtual Wallet number and the deposit amount
4. Customer enter Virtual Wallet number and the deposit amount
5. System validate the Virtual Wallet number and the amount with Virtual Wallet Provider
   1. If the Virtual Wallet number and the amount is invalid, System shows an error message and asks Customer to enters the number and the amount again
   2. Customer repeats step 4 or cancels the deposit request
6. System asks Customer to confirm the deposit request
7. Customer confirms
   1. Customer cancels the deposit request, the process finishes
8. System sends withdraw request to Virtual Wallet Provider
   1. If the request is refused by Virtual Wallet Provider, System shows an error message
9. System sends an update request to Bank Database Server to update the selected bank account
10. Bank Database Server replies that the selected bank account has been updated
11. System adds “Deposit from virtual wallet” entry to user activities log
12. System shows a success message

### UC5: Withdraw to top up Virtual Wallet

**Primary Actor**

* Customer

**Supporting Actor**

* Virtual Wallet Provider
* Bank Database Server

**Preconditions**

* Customer has logged in to System

**Postconditions**

* Success end condition
  + The withdraw amount is subtracted from Customer selected bank account
  + The withdraw amount is added to Customer Virtual Wallet
  + “Withdraw to virtual wallet” entry is added to user activities log in System
* Failure end condition
  + “Fail to withdraw virtual wallet” entry is added to user activities log in System
* Minimal guarantee
  + The withdrawing is performed only when Customer confirms the withdrawal request

**Main Success Scenario**

1. Customer needs to withdraw from an bank account and top up a Virtual Wallet
2. Customer selects an bank account and request withdrawal
3. System asks for the Virtual Wallet number and the withdraw amount
4. Customer enter the number and the amount
5. System checks with Bank Database Server to see if the selected bank account’s balance is greater or equals the withdraw amount
6. Bank Database Server replies
   1. If the selected bank account’s balance is less than the withdraw amount, System shows an error message and asks Customer to adjust the amount
   2. Customer repeats step 4 or cancel the withdraw request
7. System asks Customer to confirm the withdraw request
8. Customer confirms
   1. Customer cancels the withdraw request, the process finishes
9. System sends a request to Bank Database Server to hold the amount on the selected bank account
10. Bank Database Server replies that it has hold the amount on the selected bank account
11. System request Virtual Wallet Provider to top up the Virtual Wallet with that amount
    1. If the request is not processed successfully by Virtual Wallet Provider, System shows an error message and sends a request to Bank Database Server to release the held amount
12. System sends a request to Bank Database Server to update the selected bank account
13. Bank Database Server replies that the selected bank account has been updated
14. System adds “Withdraw money” entry to user activities log
15. System shows a success message

### UC6: Transfer money

**Primary Actor**

* Customer

Secondary Actor

* Bank Database Server

**Preconditions**

* Customer has logged in to System

**Postconditions**

* Success end condition
  + The amount is subtracted from Customer selected bank account
  + The amount is added to target bank account
  + “Transfer money” entry is added to user activities log in System
* Minimal guarantee
  + The transfering is performed only when Customer confirms the transfering request

**Main Success Scenario**

1. Customer wants to transfer money from a bank account to any bank account in System
2. Customer select a bank account, specifies a target bank account and a transfer amount
3. System sends a request to Bank Database Server to check if the selected bank account has a balance greater or equals the transfer amount
4. Bank Database Server replies
   1. If the selected bank account has a balance less than the transfer amount or the target bank account number is invalid, System shows an error message and asks Customer to enters the correct information
   2. Customer repeats step 2 or cancels the transfer request
5. System asks Customer to confirm the transfer request
6. Customer confirms
   1. Customer cancels the transfer request, the process finishes
7. System sends a request to Bank Database Server to subtract the amount from the selected bank account and adds the amount to the target bank account
8. Bank Database finishes the operations
9. System adds “Transfer money” entry to user activities log
10. System shows a success message

### UC7: Request bill payment

**Primary Actor**

* Customer

**Preconditions**

* Customer has logged in to System

**Postconditions**

* Success end condition
  + “Request bill payment” entry is added to user activities log in System
* Minimal guarantee
  + The request is recorded only when Customer confirms the bill payment request

**Main Success Scenario**

1. Customer needs to pay a bill or to schedule a bill payment
2. Customer request bill payment
3. System asks for a bank account, the amount, the date and information about the payee include

* Name of the payee
* Address of the payee
* Customer account with the payee

1. Customer provides the requested information
2. System asks Customer to confirm the request
3. Customer confirms
   1. Custom can cancel the request
   2. Customer can reenter the requested information by go back to step 4
4. System adds “Request bill payment” to user activities log
5. System shows an success message and records the request for processing

### UC8: Process bill payment

**Primary Actor**

* Bank staff

**Preconditions**

* Bank staff has logged in to System

**Postconditions**

* Success end condition
  + “Bill payment processed” entry is added to user activities log in System
* Minimal guarantee
  + The payment amount is subtracted from Customer bank account only when Bank staff confirms the bill payment is processed

**Main Success Scenario**

1. Bank staff needs to process Customer’s bill payment requests
2. Bank staff requests to see bill payment requests for a date range
3. System shows all bill payment requests for the date range
4. Bank staff select a request and process it
   1. If the request cannot be processed, Bank staff asks System to mark the request as “Failed to process”
   2. System asks Bank staff to confirms
   3. Bank staff confirms
      1. Bank staff can cancel and goes back to step 4
   4. System marks the request as “Failed to process”
5. Bank staff asks System to mark the request as “Processed”
6. System asks Bank staff to confirm
7. Bank staff confirms
   1. Bank staff can cancel and goes back to step 4
8. System marks the request as “Processed”
9. System adds “Bill payment processed” entry to user activities log
10. System removes the request from the request list for the selected date range

### UC8: View transactions and account balance

**Primary Actor**

* Customer

**Secondary Actor**

* Bank Database Server

**Preconditions**

* Customer has logged in to System

**Main Success Scenario**

1. Customer needs to view recent transactions
2. Customer selects a bank account and a date range
3. System sends a request to Bank Database Server to get information about all transactions between the specified date range
4. System shows all transactions on that bank account and in the date range, each transaction includes the following information:

* Transaction date
* Description
* Debit amount
* Credit amount
* Balance

### UC9: View monthly statement

**Primary Actor**

* Customer

**Secondary Actor**

* Bank Database Server

**Preconditions**

* Customer has logged in to System

**Postconditions**

* Minimal guarantee
  + Customer can view all available statements

**Main Success Scenario**

1. Customer needs to view monthly statements
2. Customer requests to view monthly statements
3. System sends a request to Bank Database Server to get the dates of the first and last transactions
4. Bank Database Server replies with the dates of the first and last transactions
5. System shows a list of 12 latest monthly statements
6. Customer select a statement, System go to step 8
7. Customer select a year
8. System sends a request to Bank Database Server to get information about the statement
9. Bank Database Server replies with the statement information
10. System shows all monthly statements of that year
11. Customer go to step 4
12. System shows the monthly statement include following information for all of Customer bank accounts

* Opening balance
* Total deducted amount
* Total added amount
* Closing balance
* All transactions in the month

### UC10: View user activities

**Primary Actor**

* System administrator

**Preconditions**

* System administrator has logged in to System

**Postconditions**

* Minimal guarantee
  + System administrator can all user activities recorded by the system

**Main Success Scenario**

1. System administrator needs to view user activities on System
2. System administrator requests to view user activities
3. System asks System administrator to select filter options, includes:

* A specific user or all users
* Date range
* A specific activity type or all activity types
* A list of specific accounts or all accounts
* A keyword

1. System administrator selects filter options
2. System shows the list of user activities which match the specified filter options

### UC11: Reset password

**Primary Actor**

* System administrator

**Preconditions**

* System administrator has logged in to System

**Postconditions**

* Success end condition
  + A new random password is set on Customer account
  + Customer is required to change to another password in 24 hours, otherwise Customer account will be locked
  + An email is sent to Customer email with the new random password and a message requests Customer to change password in 24 hours
  + “Reset password” entry is added to the user activities log in System
* Minimal guarantee
  + System reset the password only when System administrator confirms the reset password request

**Main Success Scenario**

1. System administrator needs to reset Customer password
2. System administrator requests to reset Customer password
3. System asks for Customer account
4. System administrator response by an account
5. System asks System administrator to confirm the request
6. System administrator confirms
   1. System administrator can cancel the request and go back to step 4
7. System create a random password and send to Customer email
8. System shows a success message
9. System adds “Reset password” entry to the user activities log