

# CS132: Software Engineering

## Specification

Banking System

Group 15

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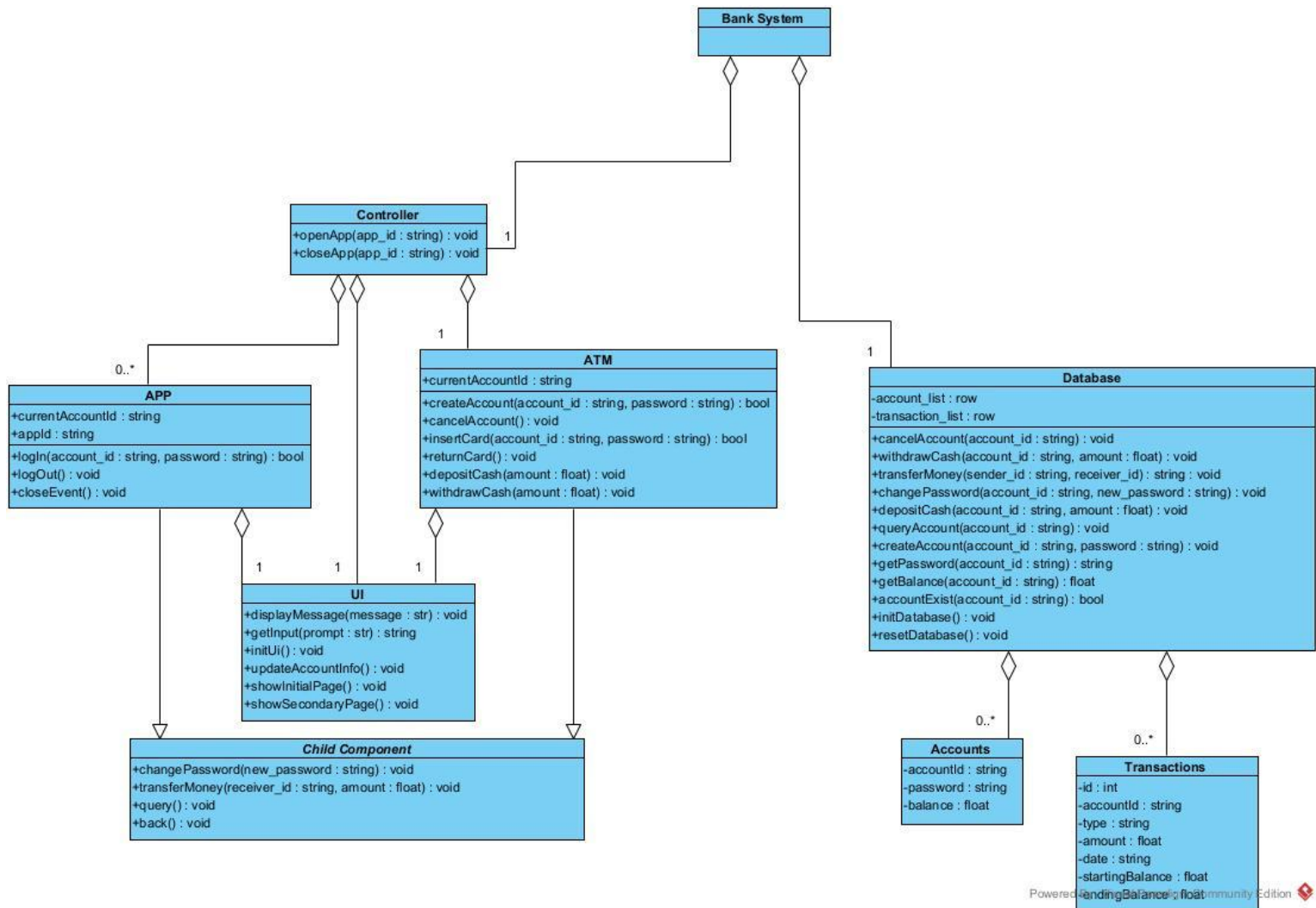
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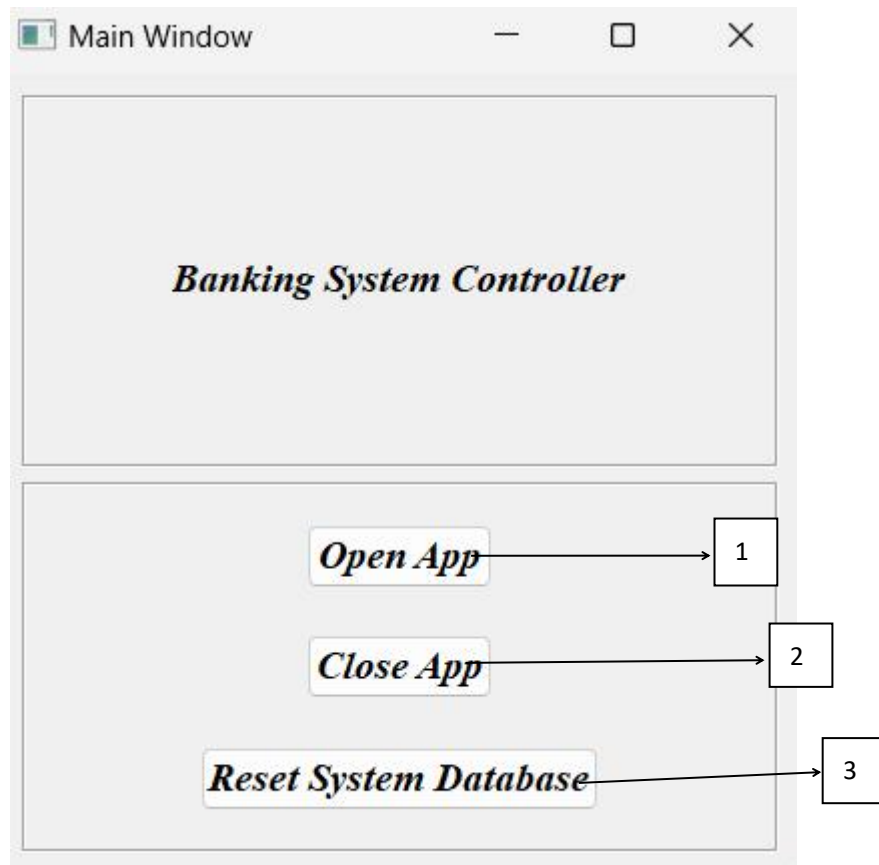
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# System Architecture

The system architecture is shown below:



# S1: Controller

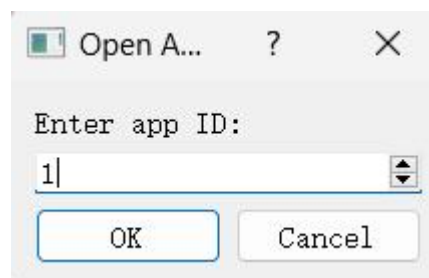


## Controller Components

- S1.1 Open APP

Clicking this button will allow the user to enter an app ID to create a new app.

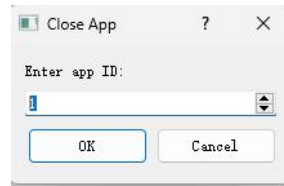
1. Create an instance of an unopened app with an appId equal to the input app ID.
2. Add the instance to the instance dictionary for easy subsequent lookups.



- S1.2 Close APP

Clicking this button will allow the user to enter an app ID to close a open app.

1. Closes an instance of an app that is already open and has an appId equal to the entered app ID.
2. Remove the instance from the instance dictionary.



- S1.3 Reset System Database

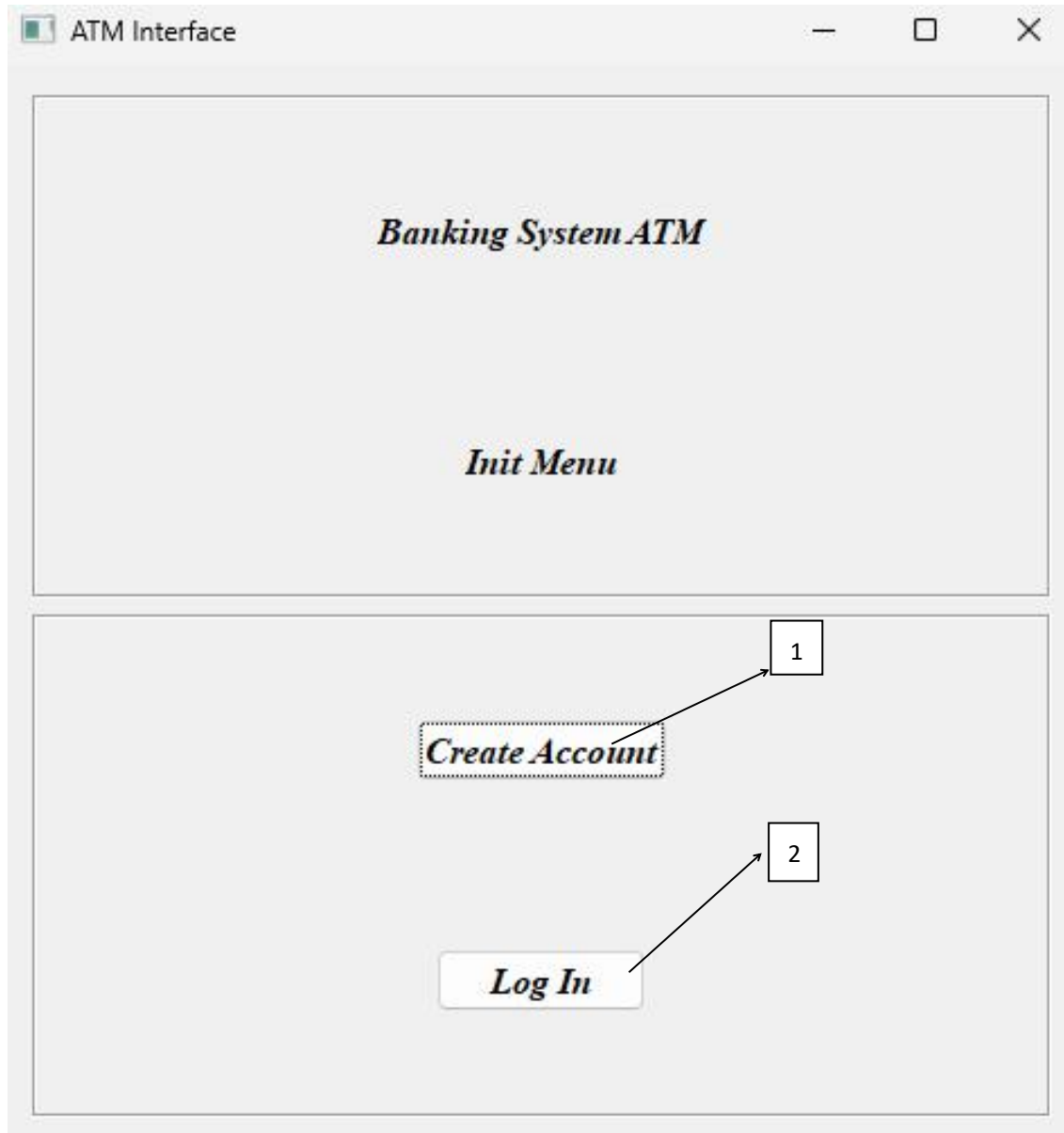
Click on this button to reset the database in the banking system, removing all account and transaction information.

1. Remove all data from the local database and reinitialize.



## S2: ATM

### Init Menu



### Init Menu Components

- S2.1 Create Account  
Clicking on this button will redirect it to the Create Account Menu.

**Banking System ATM**

**Create Account**

Account ID → 1

Password → 2

Confirm → 3

Back → 4

- S2.1.1 Input Account ID
  1. Determine if it is a 10-digit pure number.
  2. Determine if an account already exists
- S2.1.2 Input Password ID
  1. Determine whether the password meets the requirements of greater than or equal to 8 digits, and contains letters case and numbers.
- S2.1.3 Confirm
  1. Returns the creation results for display on the front end.
  2. If created successfully the database will be updated.

**Error**

! Password must be at least 8 characters long and include uppercase letters, lowercase letters, and numbers

OK

**Success**

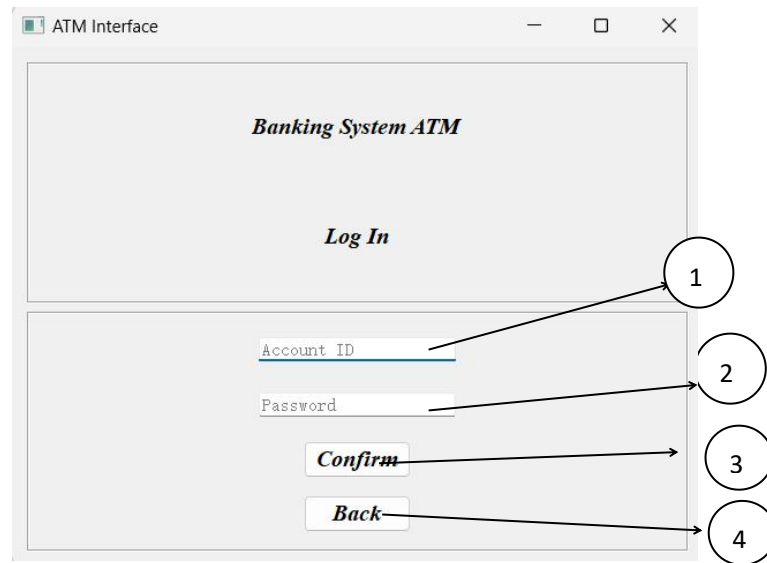
i Account created successfully

OK

- S2.2 Log In
 

Clicking on this button will redirect it to the Log In Menu.

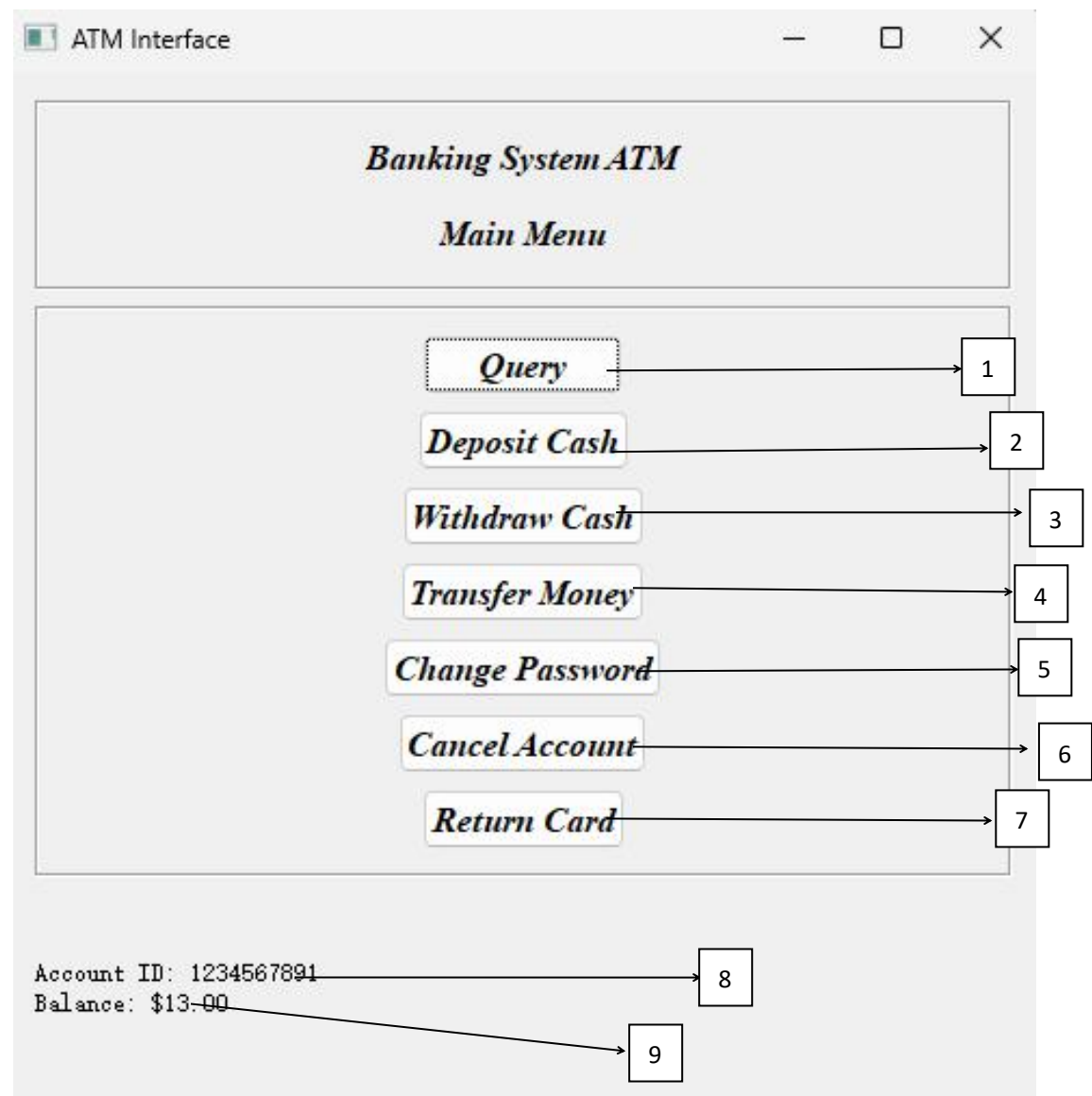




- S2.2.1 Input Account ID
  1. Determine if an account has been created.
- S2.2.2 Input Password ID
  1. Determine if the password is correct.
- S2.2.3 Confirm
  1. Returns login information to the front-end.
  2. If inserted card successfully, the ATM's currentAccountId will be set to this ID.

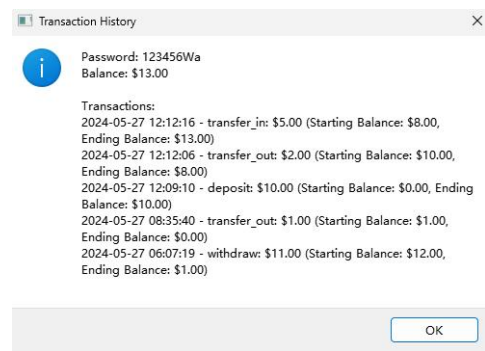


# Main Menu



## Main Menu Components

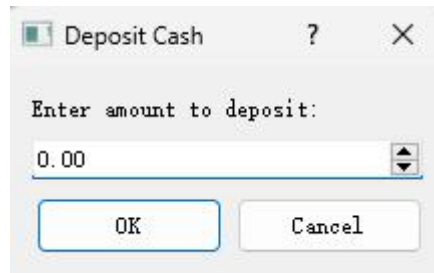
- S2.3 Query  
Click this button and it will allow the user to perform the Query operation.
  1. Request data about currentAccountId from the database.
  2. Send the data to the front end to show the latest five.



- S2.4 Deposit Cash

Click this button and it will allow the user to perform the Deposit operation.

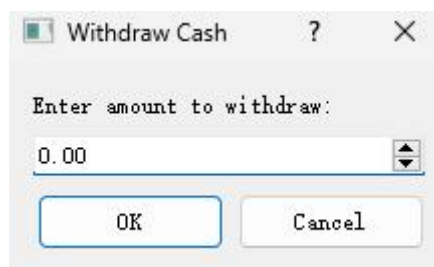
- S2.4.1 Input amount
  1. Check if amount is in the correct interval.
- S2.4.2 OK
  1. Return Deposit result information to the front end.
  2. Updating relevant data in the database.



- S2.5 Withdraw Cash

Click this button and it will allow the user to perform the Withdraw operation.

- S2.5.1 Input amount
  1. Check if amount is in the correct interval.
  2. Check if the current account has enough amount.
- S2.5.2 OK
  1. Return Withdraw result information to the front end.
  2. Updating relevant data in the database.



- S2.6 Transfer Money

Click this button and it will allow the user to perform the Transfer operation.

- S2.6.1 Input receiver ID
  1. Check if the current account is the same as the receiver ID.
  2. Check that the receiver ID conforms to the ID specification.
  3. Check if the receiver ID exists in the database.
- S2.6.2 Input amount
  1. Check if amount is in the correct interval.
  2. Check if the current account has enough amount.
- S2.6.3 OK
  1. Return Transfer result information to the front end.
  2. Updating relevant data in the database.

Transfer Money

Enter receiver's account ID:

OK Cancel

Transfer Money

Enter amount to transfer:

1.00

OK Cancel

- S2.7 Change Password

Click on this button and it will allow the user to change Password.

- S2.7.1 Input new password
  1. Check that the new password is the same as the old password.
  2. Check that the new password is in specification.
- S2.7.2 OK
  1. Return Change Password result information to the front end.
  2. Updating relevant data in the database.

Change Password

Enter new password:

OK Cancel

- S2.8 Cancel Account

Clicking on this button will allow the user to cancel the account.

1. Check if the balance of the account is 0.
2. Check the instance dictionary to see if an app is logged into the account.
3. Remove relevant data from the database.

Confirm

Are you sure you want to cancel your account?

Yes No

- S2.9 Return Card

Click on this button and it will automatically log out of the account. Then it will return to the Init Menu.

1. Set currentAccountId to None and return to the Init Menu.

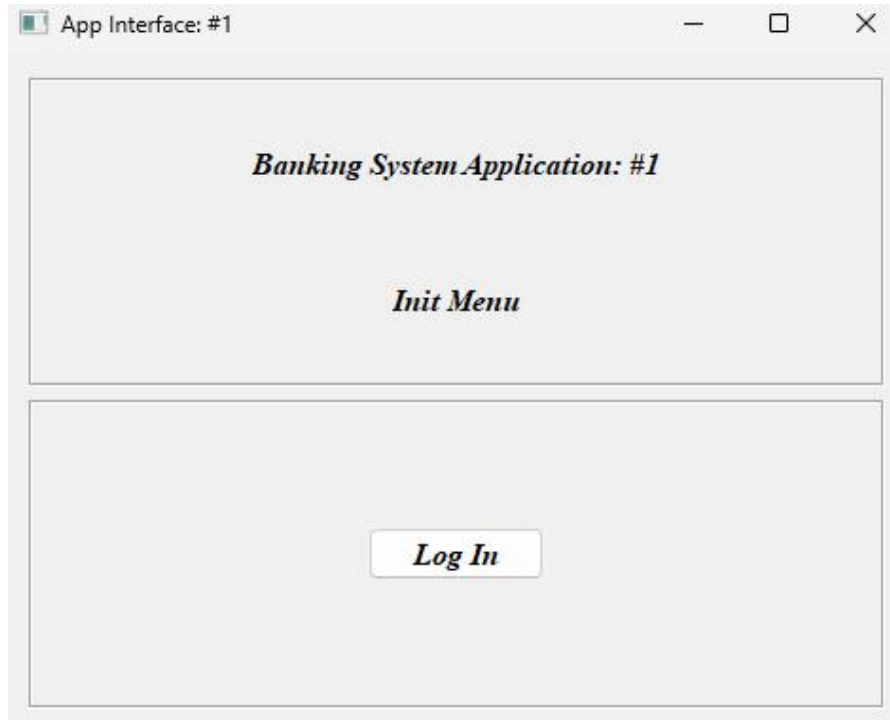
Success

Card returned successfully

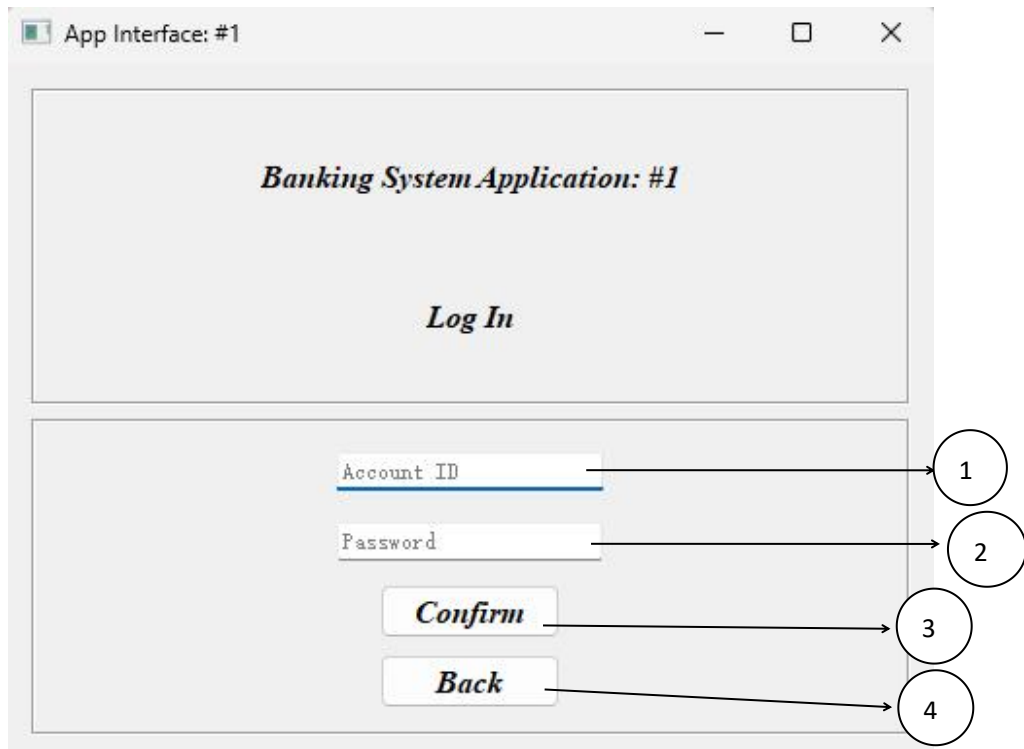
OK

## S3: APP

### Init Menu



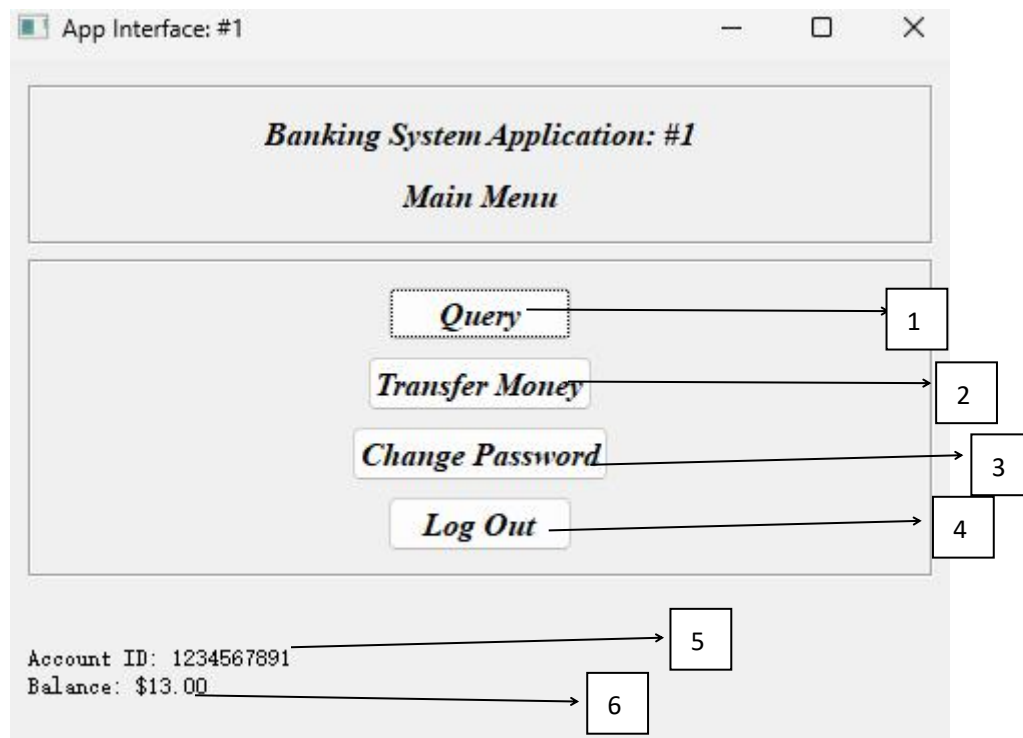
- S3.1 Log In  
Clicking on this button will redirect it to the Log In Menu.



- S3.1.1 Input Account ID
  1. Determine if an account has been created.
- S3.1.2 Input Password ID
  1. Determine if the password is correct.
- S3.1.3 Confirm
  1. Returns login information to the front-end.
  2. If logged in successfully, the APP's currentAccountId will be set to this ID.



## Main Menu

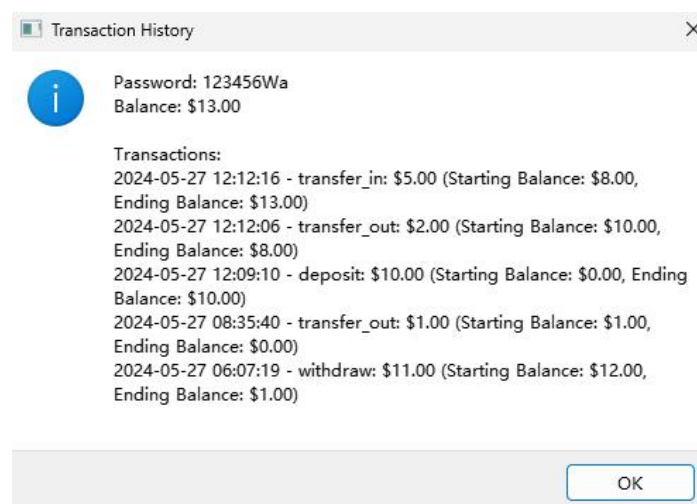


## Main Menu Components

- S3.2 Query

Clicking on this button will return all the information about the account including the password, Balance and all the Transaction information

1. Request data about currentAccountId from the database.
2. Send the data to the front end to show the latest five.



- S3.3 Transfer Money

Click this button and it will allow the user to perform the Transfer operation.

- S3.3.1 Input receiver ID

1. Check if the current account is the same as the receiver ID.
2. Check that the receiver ID conforms to the ID specification.
3. Check if the receiver ID exists in the database.
- S3.3.2 Input amount
  1. Check if amount is in the correct interval.
  2. Check if the current account has enough amount.
- S3.3.3 OK
  1. Return Transfer result information to the front end.
  2. Updating relevant data in the database.

- S3.4 Change Password

Click on this button and it will allow the user to change Password.

- S3.4.1 Input new password
  1. Check that the new password is the same as the old password.
  2. Check that the new password is in specification.
- S3.4.2 OK
  1. Return Change Password result information to the front end.
  2. Updating relevant data in the database.

- S3.5 Log Out

Click on this button and it will automatically log out of the account. Then it will return to the Init Menu.

1. Set currentAccountId to None and return to the Init Menu.