Islamic University of Technology

Department of Computer Science and Engineering

SWE 4202 - OOC I Lab Lab 03, Group A (January 12, 2023)

1 hour 45 minutes

10 marks

10

INSTRUCTIONS

- Do not communicate and copy codes from others.
- Do not use your cellphone during lab time.
- You can use calculator and internet.

Question 1: Develop a Banking System Management application using Windows Forms.

The basics features that your application should include are as follows.

- Creating an account
- Deposit and Withdraw money from that account
- Viewing account information
- Suspending an account

There needs to be support for multiple banking accounts in your system. Admin should be able to access account details given the account number. A *List* of user-defined type *BankAccount* can be used to store the information. Due to the lack of input, an account number will be generated automatically (via auto-increment; for example, if 10 accounts already exist in your system, the next account number will be 11). BankAccount class should have a parameterized constructor for creating the objects/accounts. Here is a list of items that are needed to register an account.

- 1. Account Holder's Name
- 2. Branch Name (Gazipur/ Uttara/ Motijheel/ Rajshahi) ComboBox
- 3. Account Type (Savings/ Current) ComboBox
- 4. Initial Deposit Amount

The Admin can also temporarily disable a user's account. If an account is temporarily frozen, users cannot add funds to or remove funds from that account. Never under any circumstances should an account have a negative balance. When the user clicks the ShowBalance button, a MessageBox will appear with the account balance. When a user makes a deposit, withdraws, or uses the Suspend button, a confirmation or error message should be displayed.

Your solution should incorporate the concept of inheritance and static classes. Create separate classes for SavingsAccount and CurrentAccount. Both of these classes will be derived from the base BankAccount class. The only difference these derived classes will have is in the definition of the deposit function. The deposit function of the SavingsAccount class will add extra 2.5% e.g., depositing BDT 100 will add BDT 102.5 to the balance whereas, the deposit function of the CurrentAccount class will simply add the amount to the balance. Create a static class, Utility for counting the total number of bank accounts and generating the next bank account number.

Keep the focus on getting the features in as quickly as possible instead of on making the UI as pretty as possible. Keep the user interface as streamlined and straightforward as possible. The process of merely creating the user interface is ungraded. See below for some screenshot examples of the user interface.

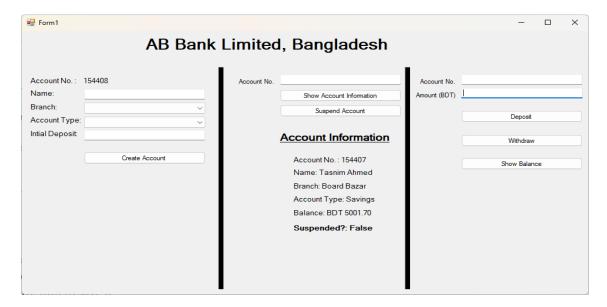


Figure 1: Basic UI

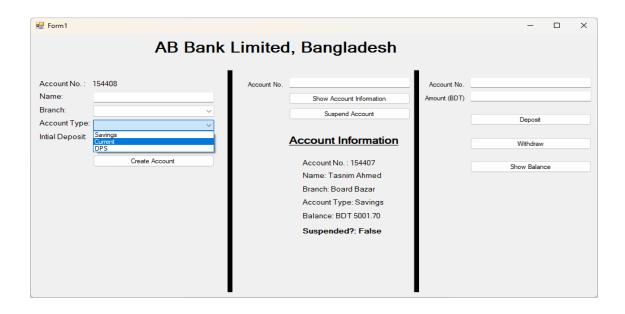


Figure 2: Basic UI with Drop-down List