



You have been asked to develop a new banking application for “MyBank Inc”. This application will be developed over the next four weeks, each weekly iteration adding additional functionality. This week you tasked with creating a new project in BlueJ called “MyBank”, and developing two of the main building blocks of the application, namely:

- **The *BankAccount* class**
- **The *MyBankController* class**

Assignment 2 (Part A): *BankAccount* class

Each bank account should have fields for customer name, account number, current balance and account status. When a new bank account is constructed, the user should be asked to provide a customer name and account number, with the account initialized with a default opening balance of zero & an account status of true (active).



After initialization a user should not be able to change a bank accounts customer name and associated account number fields, with the account balance changed only by using the deposit and withdrawal methods (Business rules).

The *BankAccount* class in addition to its **constructor** should have the following methods:

makeLodgement (specify an amount to add to balance)

Ensure than lodgments are only allowed to be made when (A) the amount to be lodged is greater than 0, & (B) and the account is active.



makeWithdrawal (specify an amount to subtract from balance)

Ensure that (A) all withdrawals must be greater than 0, (B) customers can't withdraw more than is in their accounts, and (C) the account is active.



closeAccount ()

This method changes the account status to false (inactive), refunding any money in the account by invoking the internal makeWithdrawal method.



displayAccount ()

This method returns a string with the account details, in the following format "John Smith, A/C 123456, Balance = €1000"



In addition provide assessors for each of the fields and setters as appropriate.

Assignment 2 Part B: MyBankController class

The *MyBankController* class will control the creation of accounts utilizing the **BankAccount class** you created in Part A of the assignment. For this iteration this controller class will simply create a **single bank account**, declaring memory space for one BankAccount object called newAccount.

During initialization the class constructor for MyBankController does nothing. The class has the following methods:

createAccount (params)

Initialize the new account (i.e. create a new account object (using the *new* operator) by accepting the necessary parameters from the user and then passing them to the new object.



printAccountDetails ()

This method should be called from createAccount () and should print out all the details for the account (number, customer name, balance)

Don't forget to follow good industry practices:

- All class variables start with an underscore
- Write clear comments
- Classes start with a capital letter
- Methods start with a small letter
- Names must be self-explanatory
- Use **guard** statements instead of **if-else** statements to avoid nesting

- Always use crocodile brackets for if statements
 - Declare class variables one per line
 - Apply the rule of reusability (if appropriate)
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Assignments submissions to follow guidelines specified on Blackboard. Please ensure that you submit code separately for each of the exercises given.

Deadline for submission is **Thursday 11th February @ 11.59pm**