

Computer Programming Spring 2018
CS-17 Batch
Assignment 2

You have to write a program to assist the bank operations. Your program should help managers to add different customers and their bank accounts in to the system and also perform some transactional operations. Your program should have following classes and their respective data members.

Account:

Member Variables:

accountNo, balance, accountDate, owner(Customer type)

Member Functions:

- *depositMoney*: This function should receive the amount of money in argument and add it to the balance.
- *getBalance*: This function should return the amount present in bank account.
- *withdrawMoney*: it will take an argument as amount that is to be withdraw and update and return the remaining balance.
- *Setters/getters* for all members

SavingAccount (inherited by Account)

Member variables:

interestRate

Member Function:

- *changeInterestRate*: this function should get a float value to change the interest rate of saving account
- *getBalance*: a function to get the balance of saving account. Balance of saving account at any given time will be
$$\text{Balance} = \text{MoneyDeposited} + \text{interestRate} * \text{numberOfMonths} * \text{MoneyDeposited}$$

CheckingAccount (inherited by Account)

Member variables:

insufficientFundFee

Member Function:

- *changeInteretRate*: this function should get a float value to change the interest rate of saving account
- *getBalance*: a function to get the balance of saving account. Balance of saving account at any given time will be
$$\text{Balance} = \text{MoneyDeposited} + \text{interestRate} * \text{numberOfMonths} * \text{MoneyDeposited}$$

Customer

Member variables:

CNIC, name, address, phoneNumber

Member Function:

Setters and getters for all member variables

In your main program you should have a menu with option of bank operations. When you select the bank operations, it should give you a new menu with bank operations.

- 1: Create New Account
- 2: Search Account
- 5: Go back to previous menu

Create New Account should give you following options:

- 1: Checking Account
- 2: Saving Account
- 3: Go back to previous menu

When you create a new account, your program should get input for the Customer, store it in a customer object. Then you should create the required type of account with some starting money and add customer to that account. Upon successful completion you should add the account in text file named accounts.txt in a proper format.

Search account should take account number and return the account information in a respective account object from file. If file information does not exist it should display "Account not found". Once the requested information is found the user must be given following options.

- 1: Deposit Money
- 2: Withdraw Money
- 3: View Balance
- 4: Go back to back menu

You should perform selected options on the found account.

Format of accounts.txt file will be as following:

account>>interestRate/FundFee>>amount>>date>>CNIC>>name>>mobile>>address

First two digits in account number show the account type: 00 for saving and 01 for checking. Date will always be month-year. Account number will be followed by the interest rate field if it is saving account otherwise it will be fund fee for checking account.

```
00-AC001>>7>>100000>>01-1998>>12345-123453253-5>>Omer>>93234234234>>Faisalabad
01-AC002>>10>>100000>>01-1998>>12345-123453253-5>>Hamza>>93234234234>>Faisalabad
00-AC003>>6>>100000>>01-1998>>12345-123453253-5>>Usman>>93234234234>>Faisalabad
01-AC004>>80>>100000>>01-1998>>12345-123453253-5>>Amir>>93234234234>>Faisalabad
```

Guidelines:

- Please follow the standard coding practice.
- Your code should be properly formatted, commented, and follow the standard naming conventions.
- **Submit a zip folder containing your source code and report of your assignment in “.pdf” format. Failure to do so will result in negative marking.**
- Start working from day one, there will be no relaxation on deadline. Keep in mind you have mid term exams in next week as well.
- **DO NOT PLAGIARIZE.**

Note:

Use three file structure.