Trent University

COIS1020H
Winter 2019
Assignment 3
Due: March 6, 2019

Write a C# program to help balance your bank account (initialize the balance to 0 in `Main()`). The `Main()` method is to use a *do-while* loop to repeatedly prompt the user to enter a transaction (*char*) which could be 'w' or 'W' for withdrawal, 'd' or 'D' for deposit, 'p' or 'P' for print, and 'q' or 'Q' for quit. Using a *switch* statement in the *do-while* loop, select the appropriate action and call the appropriate user-defined method. The `Main()` method should continue accepting transactions until the user enters a 'Q' or 'q'. If the user wishes to withdraw or deposit, `Main()` is to invoke a user-defined method to input a non-negative amount. The program is to have four user-defined methods:

(i) A *double* method call **GetAmount** which takes no formal parameters but returns a non-negative value representing the amount of a deposit or withdrawal. This method is to be invoked by Main() when the user chooses to either withdraw or deposit to their account. The method is to prompt the user to enter an amount and then validate that it is non-negative. The method header should look like:

```
public static double GetAmount()
```

(ii) A *void* method called **Withdrawal** which accepts one *call by value* formal parameter of type *double* (the amount of the withdrawal) and one *call by reference* formal parameter of type *double* (the account balance). **Withdrawal** then deducts the amount of the from the balance. A $1.50 service charge is applied to each withdrawal. The withdrawal (and service charge) should not be applied if it would leave a negative balance and the customer should be warned (an error message should be printed). The method header should look like:

```
public static void Withdrawal(double amount, ref double balance)
```

(iii) A *void* function called **Deposit** which accepts one *call by value* formal parameter of type *double* (the amount of the deposit) and one *call by reference* formal parameter of type *double* (the account balance). **Deposit** then adds the amount of the deposit to the balance. If the amount of the deposit is greater than or equal to $2000, the customer receives a 1% bonus on the amount of the withdrawal (e.g., if $2000 is deposited, then add $2020 to the account). The method header should look like:

```
public static void Deposit(double amount, ref double balance)
```

(iv) A *void* function called **Print** which takes one *call by value* formal parameter of type *double* which contains the balance and then prints it out. The method header should look like:

```
public static void Print(double balance)
```

For this assignment, you are to submit:

1. Properly documented source code (.cs file) which includes comments at the top of your program (containing your name, student number, a description of the program), the list of variable names with their uses (data dictionary), and comments within the body of your program (inline comments).
2. Sample output showing your program works. This is to be a PDF file that contains one screen shoot of an output window, and several more cut and pastes of sample outputs (use a word processor and then export as a PDF). Please note that one sample output does NOT demonstrate that your program works. Your job is to prove to the marker that your program works for ALL cases.

These 2 files are to be attached to the Assignment 3 dropbox by the due date.