Fitchburg State University
CSC 7014 Practice Computer Programming
Instructor: Nguyen Thai
Due: 10/14/2017 at 11:00 PM
Student: Lina Mi

Assignment 4: Financial Application

The purpose of this assignment is to learn how to program loop statements. Your program is to be written in the Python language. You will be graded for output correctness, code comments, code indentation, descriptive variables and source code file header completeness.

As you work through the assignment be sure to answer all questions (type your answers into this document) and take all screenshots as requested (copy them into the document). For the screenshots, you can use the Snipping Tool that is built-in to Windows to capture the important parts of the lab as highlighted in the document below. Do not delete the contents of this file. When finished, you will submit the document source code file and associated data files to the instructor via Blackboard. DO NOT SUBMIT ZIP FILES OR INDIVIDUAL IMAGES. If you have any questions or need any clarification, email the instructor *before* the deadline.

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1. In this lab you are to write a program in Python called *financialApplication.py* to calculate the amount of money earned on a CD based on the user's inputs.
2. Suppose you bought a CD for $10,00.00 with an annual percentage yield (APY) of 5.75%.
   - After one month, the CD is worth: $10000 + $10000 * 5.75% / 12 = $10047.92
   - After two months, the CD is worth: $10047.92 + 10047.92 * 5.75% / 12 = $ 10096.06
3. Write a program to prompts the user to enter:
   a. CD's purchase value in dollars
   b. CD's annual percentage yield in percentage
   c. CD's investment term in months
4. Calculate the value of the CD at the end of the CD term.
5. A test case is provided here. You are required to produce the same UI as shown below.

   Enter CD's purchase value ($): 10000
   Enter CD's annual percentage yield (%): 5.75
   Enter CD's investment term (months): 12

Your CD is worth $10590.40 at the end of the 12 months term

6. You need to check for valid inputs. For example, negative number is invalid.

7. Before coding, think how you are going to tackle this problem, and write a brief description of the logic of your program. **INSERT YOUR PROGRAM DESCRIPTION HERE.**

   The program works as following:

1) First ask user to input the purchased CD's Value, and then check the user's input is valid or not, if the input is valid then go to next step, if not exit the program

2) Ask user to input the annual percentage yield(APY) about the purchased CD, then check the input APY is valid or not, if the given APY is valid, then the go to next step; if not, exit the program;

3) Ask user to input the CD's investment term, then check the input term is valid or not, if it is valid, then go to next step, otherwise, exit the program

4) Calculate the amount of money that the CD worth at the end of invest term based on the user's inputs, including purchased CD's value, APY and invest term, using the *for* loop and following equation: value=value+value*APY/12, since this equation calculates the CD's value after 1 month, and if to calculate the CD's value at the end of *n* months, it needs to calculate the previous equation *n* times. The investment term is given (in month), so the iteration times is known, therefore use *for* loop to calculate the purchased CD's value at the end of input investment term.

5) Print out the calculated result to show the CD's value at the end of investment term with given inputs

8. **TAKE A SCREENSHOT** of your inputs and output, and paste it here. Make sure you zoom into the inputs and output area. Do not take a screenshot of the whole terminal.

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>>>
 RESTART: C:\Users\milin\Registered_Courses_2017_Summer&Fall\Registered_Courses_
2017_Fall\Practice of Computer Program\FinantialApplication.py
Enter CD's purchase value ($):10000
Enter the CD's annual percentage yield (%):5.75
Enter the CD's investment term (months):12
Your CD is worth $ 10590.39831281598 at the end of the 12 months term
>>>
```

9. Do not paste your source code in this document.

10. Submit your source code (.py file) and this document to Blackboard for grading.