Unit 4 Chapter 13 Assignment

Grading Information: This Program is **due** on **Date Specified**.

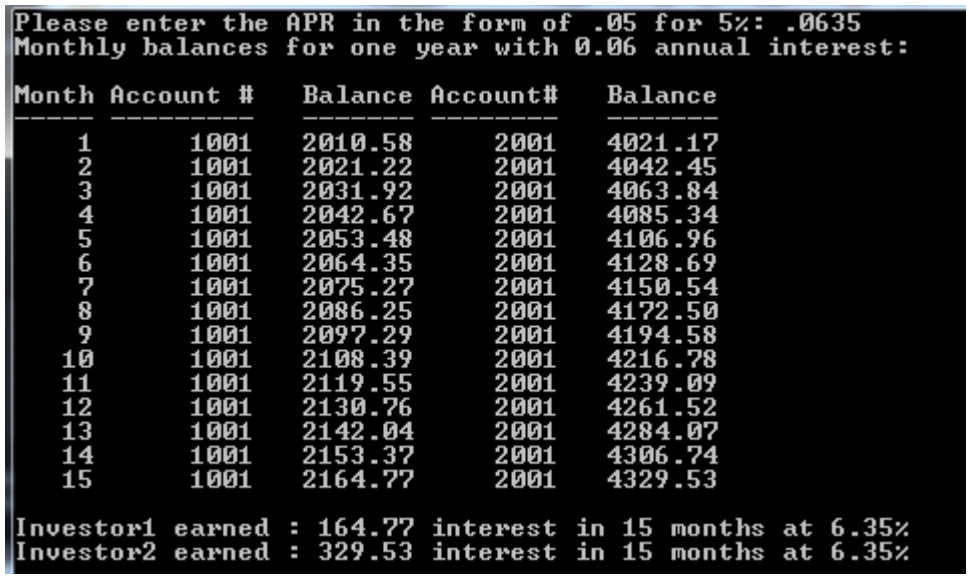
Comments are **REQUIRED**; flow charts and pseudocode are **NOT REQUIRED**.

Directions	**Points**
The files must be called <**LiFiUnit4Ch13.java**> The files must be called <**LiFiUnit4Ch13Inevstor.java**> (LiFi = Last Initial First Initial) *Proper coding conventions required the first letter of the class start with a capital letter and the first letter of each additional word start with a capital letter*. Only submit the .**java** files needed to make the program run. Do not submit the .**class** files or any other files.	5%
Style Components Include properly formatted prologue, comments, indenting, and other style elements as shown in Chapter 2 starting page 64 and Appendix 5 page 881-892.	5%
Topics covered in chapter Topics with * are covered in this assignment. Ensure you use every item listed below in your completed assignment. *Composition and Aggregation *Inheritance *Constructors in a Subclass Method Overriding *Final Access Modifier	
Basic Requirements Write a program that tracks an investments for 2 person based on the input of an interest rate. The initial balance should be $2,000, and $4,000. The interest should be added to the balance and output in table format as shown in the supplied sample.	
LiFiUnit4Ch13.java ○ Instantiate an investor1 object using a two parameter constructor passing the account number 1001 and the initial balance of $2,000 ○ Instantiate an investor2 object using a two parameter constructor passing the account number 2001 and the initial balance of $4,000 ○ Get input for interest rate (in the format .08 for 8%)	45%

▪ Use **class variable** to set interest rate o Output header as per sample showing interest rate o Print the table using a for loop displaying the current month and calling: ▪ addInterest() to add the monthly interest for each iteration ▪ getBalance() to display the current balance (See sample) ▪ Output results for 15 months. o Print the interest earned as shown in the sample for each investor utilizing a printf statement. Don't hard code the interest earned, or interest rate. Sample output is provided below. Be sure to mimic it exactly except for values will change based on the interest rate entered.	
LiFiUnit4Ch13Investor.java o All variables should be declared private. o Declare a **class** variable called interestRate (This will hold the annual interest rate) o Declare a constant called ACCOUNT_NUMBER o Declare an instance variable called balance o Provide a class method that will be used to set the annual interest rate o Provide a two parameter constructor to initialize the constant account number and balance o Provide an addInterest() method to update the balance based on the interestRate entered in the driver. ▪ Add the interest using (balance * interestRate / 12)	45%
NOTE: Complete your activity and submit it by clicking "Submit Assignment"	
Total Percentage	100%
Sample `Your output will vary based on interest rate entered.`	

```
Please enter the APR in the form of .05 for 5%: .08
Monthly balances for one year with 0.08 annual interest:

Month Account #   Balance Account#   Balance
----- ---------   ------- --------   -------
    1      1001   2013.33     2001   4026.67
    2      1001   2026.76     2001   4053.51
    3      1001   2040.27     2001   4080.53
    4      1001   2053.87     2001   4107.74
    5      1001   2067.56     2001   4135.12
    6      1001   2081.35     2001   4162.69
    7      1001   2095.22     2001   4190.44
    8      1001   2109.19     2001   4218.38
    9      1001   2123.25     2001   4246.50
   10      1001   2137.41     2001   4274.81
   11      1001   2151.65     2001   4303.31
   12      1001   2166.00     2001   4332.00
   13      1001   2180.44     2001   4360.88
   14      1001   2194.98     2001   4389.95
   15      1001   2209.61     2001   4419.22

Investor1 earned : 209.61 interest in 15 months at 8.00%
Investor2 earned : 419.22 interest in 15 months at 8.00%
```

```
Please enter the APR in the form of .05 for 5%: .05
Monthly balances for one year with 0.05 annual interest:

Month Account #   Balance Account#   Balance
----- ---------   ------- --------   -------
    1      1001   2008.33     2001   4016.67
    2      1001   2016.70     2001   4033.40
    3      1001   2025.10     2001   4050.21
    4      1001   2033.54     2001   4067.08
    5      1001   2042.02     2001   4084.03
    6      1001   2050.52     2001   4101.05
    7      1001   2059.07     2001   4118.14
    8      1001   2067.65     2001   4135.29
    9      1001   2076.26     2001   4152.52
   10      1001   2084.91     2001   4169.83
   11      1001   2093.60     2001   4187.20
   12      1001   2102.32     2001   4204.65
   13      1001   2111.08     2001   4222.17
   14      1001   2119.88     2001   4239.76
   15      1001   2128.71     2001   4257.42

Investor1 earned : 128.71 interest in 15 months at 5.00%
Investor2 earned : 257.42 interest in 15 months at 5.00%
```



```
Please enter the APR in the form of .05 for 5%: .0635
Monthly balances for one year with 0.06 annual interest:

Month Account #   Balance Account#   Balance
----- ---------   ------- --------   -------
    1      1001   2010.58     2001   4021.17
    2      1001   2021.22     2001   4042.45
    3      1001   2031.92     2001   4063.84
    4      1001   2042.67     2001   4085.34
    5      1001   2053.48     2001   4106.96
    6      1001   2064.35     2001   4128.69
    7      1001   2075.27     2001   4150.54
    8      1001   2086.25     2001   4172.50
    9      1001   2097.29     2001   4194.58
   10      1001   2108.39     2001   4216.78
   11      1001   2119.55     2001   4239.09
   12      1001   2130.76     2001   4261.52
   13      1001   2142.04     2001   4284.07
   14      1001   2153.37     2001   4306.74
   15      1001   2164.77     2001   4329.53

Investor1 earned : 164.77 interest in 15 months at 6.35%
Investor2 earned : 329.53 interest in 15 months at 6.35%
```