

EECS 12 Assignment 1 (due 9pm, Oct. 5)
Fall 2013

In this assignment, you are to make modifications to the following Future Value program:

```
def main():
    print ("This program calculates the future value")
    print ("of a 10-year investment.")
    principal = eval(input("Enter the initial principal: "))
    apr = eval(input("Enter the annual interest rate: "))
    for i in range(10):
        principal = principal * (1 + apr)
    print ("The value in 10 years is :", principal)
main()
```

1. Modify the Future Value program so that the number of years for the investment is given by the user. Your program should ask the user to enter the number of years.
2. Modify the Future Value program so that the value of the investment at the beginning of every year is printed. For example, if the investment is for 2 years, the values of investment at the beginning of year 1, year 2, and at year 3 need to be printed.
3. Modify the Future Value program so that it prints output in three columns similar to the one shown in the example. The first column shows which years the rows represent. The second column shows the values of the investment under simple interest, the third column shows the values of the investment under compound interest. (You do not need to get the columns to line up as nicely. The method to format the columns will be discussed in Chapter 5)

Under simple interest, the increase of investment value every year equals to the initial principal times the annual interest rate, and is the same every year. Here is a sample output for the program.

This program calculates the future value.

Enter the number of years: 10

Enter the initial principal: 10000

Enter the annual interest rate: 0.05

Investment values under simple interest and compound interest:

0	10000	10000
1	10500.0	10500.0
2	11000.0	11025.0
3	11500.0	11576.25
4	12000.0	12155.0625
5	12500.0	12762.815625000001
6	13000.0	13400.956406250001
7	13500.0	14071.004226562502
8	14000.0	14774.554437890627
9	14500.0	15513.28215978516
10	15000.0	16288.946267774418

Grading Criteria (20 points):

- Correctly accept user input (5pt)
- Correctly calculate and print investment values of every year under compound interest (10pt)
- Correctly print the whole table (5pt)

Submission:

Submit your homework before **9pm, Oct. 5 (Saturday)** to the EEE Dropbox. Submit only the python source file, with file name "hw1.py".