CS150 Assignment 4
A Retirement Calculator

Date assigned: Monday, October 3, 2011
Program due: Wednesday, October 12, 2011, 9:15am (35 points)

As soon as you start working, you should begin investing in a retirement plan. The sooner you start investing, the better your retirement. This program will help you decide what you should do!

Write a C++ program that will allow the user to calculate how much money they will have saved after a certain number of years investing in a retirement plan.

The user will input an annual salary, a percentage of that annual salary they are to invest in retirement, a yearly interest rate, and the number of years that they will continue investing.

Your program will output a statement in one of two forms depending on what the user wishes to see. You will print the results either monthly or yearly. For each line you must output the beginning balance (initially zero), investment amount, interest earned (interest is compounded monthly), ending balance, and the year of investment (start from one).

Your output must look exactly like the following (user input is in bold):

```
**********************************
*     Retirement Calculator      *
**********************************

Enter your annual income: $55000
Enter the percentage of your income you want to invest: 0.10
Enter the fixed annual interest rate you make on your investment: 0.06
Enter the number of years until retirement: 1

Enter (1 = Every Month, 2 = Every Year): 1

    Beginning      Additional          Interest              Ending       Year
      Balance      Investment            Earned             Balance
 ------------      ----------        ----------        ------------       ----
$        0.00    $    458.33      $        2.29      $       460.63          1
$      460.63    $    458.33      $        4.59      $       923.55          1
$      923.55    $    458.33      $        6.91      $      1388.80          1
```

… and so on.

To complete this assignment you must submit the following:

1. **An electronic copy of your program on Turing**

    a. Add a new project named 04_Retirement to your previously created assignment solution called PUNetIDAssignments. It is *vital* that you name your project correctly!

    b. Type your program (fully documented/commented) into the project. The comment block at the top of the program needs to contain your name, the date the assignment is due, the class name, assignment number and name, and a brief description of the program.

    c. Pay attention to the example output! Your program's output must look **exactly** like the example output! The spacing and newlines in your output must match exactly.

    d. Make sure that your program compiles and runs correctly. If you get any errors, double check that you typed everything correctly.

    e. Once you are sure that the program works correctly it is time to submit your program. You do this by logging on to Turing and placing your complete solution folder in the **CS150-02 Drop** folder. This solution folder must contain four projects: 01_Fraction, 02_Currency, 03_Bank, and 04_Retirement.

    f. The program must be in the drop folder by 9:15am on the day that it is due. Anything submitted after that will be considered late.

    g. Follow the coding standards!

2. **A hard copy of the output of your program on the following input**

    a. Annual income of $55000, percentage of income to invest 10%, annual interest rate 6%, years until retirement 20, and the output is shown yearly.

    b. Annual income of $55000, percentage of income to invest 10%, annual interest rate 2%, years until retirement 20, and the output is shown yearly.

    c. Annual income of $55000, percentage of income to invest 5%, annual interest rate 6%, years until retirement 20, and the output is shown yearly.

3. **A hard copy of your program**

    a. The hard copy must be placed on the instructor's desk by 9:15am on the day that it is due.

    b. The hard copy must be printed in color, double-sided, and stapled if necessary. Staple the program output described above to your program.

Good luck! And remember, if you have any problems, come and see straight away. ☺