

CS130 Software Tools

Assignment 2: Retirement

Date Assigned: Wednesday, September 20, 2006

Date Due: Wednesday, September 27, 2006

Points: 60

For this assignment, you are to add the following two worksheets to the file you created in assignment one. The file you will submit will contain the worksheet (Loan Estimator) that you created last time, as well as the two worksheets (Retirement) and (Bacteria).

Sheet 1 (Name it 'Retirement'):

When you are hired for your first full-time job, you are going to have several decisions to make regarding your future. In particular, you will need to decide how much money you want to set aside for retirement and how much you want to set aside in savings. Retirement dollars are pretax dollars meaning they are not taxed until you begin to withdraw money around age 65.

Here are the details:

1. You have been hired to work for \$30,000 per year.
2. Every month you will receive a paycheck with the following deductions:
 - o Retirement 5% of your gross salary
 - o Federal Income Tax 14.8% of your adjusted gross (gross less your retirement deduction) salary
 - o State Income Tax 6.5% of your adjusted gross salary
 - o Social Security Tax 6.2% of your gross salary
 - o Medicare Tax 1.45% of your gross salary
3. Your net take-home pay is your gross salary less any deductions.
4. Your money will return 10.5% yearly.
5. Your annual raise is 3%.

With that in mind, I would like you to devise an Excel worksheet that allows the user to enter:

1. Yearly gross pay
2. Retirement Deduction (% of gross salary)
3. Federal Income Tax (% of adjusted gross salary)
4. State Income Tax (% of adjusted gross salary)
5. Social Security Tax (% of gross salary)
6. Medicare Tax (% of gross salary)
7. Return on Investment (annual interest rate)
8. Annual Raise (%)

You will then create an amortization table to find out how much money you will have in your retirement account at the end of 43 years. Your amortization table should contain the following headings:

Year	Gross Pay	Retirement Contribution	Social Security Tax	Federal Income Tax	State Income Tax	Medicare Tax	Net Pay
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Highlight a cell showing the total amount that you have in your retirement account.

Finally at the bottom of the worksheet, create a graph that accurately reflects the growth of your retirement total for each of the 43 years. Make sure that your graph is properly labeled.

Sheet 2 (Name it 'Algebraic Equation'):

We know from algebra that an equation of the form:

$$Ax^2 + Bx + C = 0$$

has two solutions based on the quadratic formula:

$$x = \frac{-B \pm \sqrt{B^2 - 4AC}}{2A}$$

Assuming the value for A will not be zero, you are to design a worksheet that will allow the user the ability to enter values for A,B, and C into cells and your worksheet calculates both values of x (using two separate cells properly labeled).

If $B^2 - 4AC$ is less than 0, place the word “complex” in the solution cell; otherwise, place the answer.

For example: If A=1, B=-5, and C=6, the two answers are {2,3} or {3,2} depending on which solution for x you print out first.

How to Submit and Grading Policies

- A copy of your single Excel file with the single worksheet is to be placed in the CS130 Drop Box by 6pm on the due date to be considered on time.
- Grading will be based on:
 - Correctness of your results
 - Completeness of your results
 - Professional look of the worksheets as described and shown above
 - Ability to perform a what-if analysis by changing any of the user input data with accurate results correctly displayed based on the changed data
 - Each worksheet should have a heading in a large font, merged across the top of the sheet