

# Programming Fundamentals

## CS1336

### Assignment #4

#### Assignment #4 – Calculations Continued Exam Questions

##### Introduction

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Your fourth programming assignment will consist of one small C++ program and a special assignment. The program should compile correctly and produce the specified output.

Please note that all of your programs should comply with the commenting and formatting rules we discussed in class. For example, there should be a header for the whole program that gives the author's name, class name, date, and description. End braces should be commented, and there are alignment and indenting requirements as discussed. Please ask if you have any questions.

##### Program #1 – Interest Earned Calculator

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Please implement Problem 18, p147 of our text. (In the 8<sup>th</sup> edition, the same problem is on p. 145.) This problem is very similar to the mortgage calculation problem we did last week.

###### 18. Interest Earned

Assuming there are no deposits other than the original investment, the balance in a savings account after one year may be calculated as

$$\text{Amount} = \text{Principal} \times \left(1 + \frac{\text{Rate}}{T}\right)^T$$

Principal is the balance in the savings account, Rate is the interest rate, and T is the number of times the interest is compounded during a year (T is 4 if the interest is compounded quarterly).

Write a program that asks for the principal, the interest rate, and the number of times the interest is compounded. It should display a report similar to:

Interest Rate:	4.25%
Times Compounded:	12
Principal:	\$ 1000.00
Interest:	\$ 43.34
Amount in Savings:	\$ 1043.34

## Problem 2 -- Exam Questions

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An excellent technique to use when learning new material is to practice writing your own exam questions. This technique not only forces the learner to think deeply about the material, but it provides a set of materials that can be used for review for an exam or quiz.

For this assignment, write five true false **and** five multiple choice questions on any of the material from Chapters 2 and 3. (This is a total of 10 questions.) The answers to the questions should be provided as well. These questions and answers should be submitted as a Word or text file, although Word is preferred. (PDF is not acceptable here, since we many need to modify the questions.) Your file should be submitted on eLearning with the rest of your work for this assignment.

Note that the “deeper” and more “profound” your questions are, the more you will get out of this exercise. It is intended to encourage real analytic thought, so spend serious time thinking about the issues and exactly how you would write questions covering them. Make them as difficult and challenging as possible, as this will deepen your understanding of the material.