CS150-01 Assignment 1

A Gradeschool Fraction Calculator

Date assigned: Monday, September 10, 2007 **Name:** _____
Date due: Wednesday, September 19, 2007
Points: 30 pts

The purpose of this assignment is to get you writing your first complete program with Visual Studio 2005. If you run into any problems with this assignment, it is important that you come and see me early so that I can help. Also, it is very important for you to do this assignment on your own. Every assignment you will be doing from now on will require the techniques you learned in class and in the lab, so it's very important for you to get the hang of them.

Here is the problem that you are to solve

> Young gradeschoolers often have trouble adding fractions and computing the decimal equivalent of a given fraction. You are to write a complete C++ program that will allow the gradeschooler the ability to enter any two fractions. As output, your program is to print the two fractions, their sum as a fraction, and the decimal equivalent of the resulting fraction. You can assume that the value zero is never entered for the denominator and each numerator and denominator will be a whole number.

Here is exactly what your program is to output (asterisks and all):

```
************************************************************
*                    Fraction Calculator                   *
************************************************************

Enter Fraction #1: 1/2

Enter Fraction #2: 2/3

1/2 + 2/3 = 7/6 which in decimal is 1.16667
```

To complete this assignment you must

1. Create a new C++ project in Visual Studio. You should follow the same steps that you did during the lab to create the project. Name your project "01fractionPUNet". As an example, my project would be called "01fractionkhoj0332". It is vital that you name your project correctly!

2. Type the solution (fully documented/commented) to the problem into your project.

3. Remember to enter in your name as the author of the program.

4. Make sure that your program compiles and runs correctly. If you get any errors, double check that you typed everything correctly. Be aware that C++ is case-sensitive.

5. 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 project folder in the **CS150-02 Drop** folder. Make sure that you copy your program folder and don't move it. If you move it, then you will not have your own copy!

Before you start, write down what data your program will need to store and what variables you will declare. Also write down the data type for each variable and explain why you have chosen that data type. This will help you write the complete program.

_____

_____

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_____

Write down the C++ statements you will use to declare the variables you describe above:

_____

_____

_____

_____

Finally, write down all of the formulas you will need:

_____

_____

_____

_____

To receive full credit for this assignment, your project must be in the drop box by 1pm on the day that it is due. Anything later will be considered late. Further, you must bring a hard copy of your program, printed in color, to class and place it on the instructor's desk by 1pm. You must also turn in this paper with your answers filled in above.

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

As a reminder, here are the assignment rules as detailed in the syllabus:

1. Programs are to be submitted to the correct folder on Turing by 1:00pm on the day in which the assignment is due. Further, all assignments are to be done using Visual Studio 2005.

2. Assignments can be turned in up to 24 hours late with a penalty of 10% of the grade. If the assignment is between 24 and 48 hours late you will lose 20% of your grade. Anything later will NOT be accepted.

3. One exception. Programming takes time and is fraught with hazards. It may happen that you postpone too long, have a system failure, lose a file, get sick, have family problems, or any number of other difficulties. Many times coding takes longer than you had planned. None of these events are reasons for exceptions to the assignment submission policy. But I do allow one programming assignment per semester to be turned in up to ONE day late without penalty. Your reason does not matter and I do not need to know why. All other late assignments will carry the standard loss of points (your reason still does not matter and I do not need to know why).

   To use this gift, you need to send me an email when you submit the assignment. This email is to have GIFT as the subject. In the email include your name, the assignment you want it applied to and the date you submitted the assignment. If this information is not included in the email there will be a 10% deduction.

4. Make sure to test your program before you turn it in. You may turn in your program only once.

5. A program that does not successfully compile or produces no output loses 70% of the assignment grade.