

CS150 Assignment 1

A Grade School Fraction Calculator

Date assigned: Friday, September 8, 2017

Program due: Friday, September 15, 2017, 1:00pm (25 points)

This is an individual assignment.

Goals:

1. Write a complete program with Visual Studio 2017
2. Input
3. Output
4. Arithmetic operations.

If you run into any problems with this assignment, it is important that you come and see me or a TA early so that we 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 grade schoolers often have trouble adding fractions. You are to write a complete C++ program that will give the grade schooler the ability to enter any two fractions. As output, your program is to print the two fractions and their sum as a fraction (this fraction will **not** be reduced to lowest terms). You can assume that the value zero is never entered for the denominator and that each numerator and denominator will be a whole number.

Here is exactly what your program is to output (asterisks and all), and user input is in **bold**:

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

Enter Fraction #1's numerator: 1
Enter Fraction #1's denominator: 2

Enter Fraction #2's numerator: 2
Enter Fraction #2's denominator: 3

1/2 + 2/3 = 7/6
```

To complete this assignment you must submit the following:

1. An electronic copy of your program on grace

- a. Create a new C++ solution in Visual Studio. Your solution must be called **PUNetIDAssignments**, where you replace PUNetID with your own PUNetID. Mine would be called will4614Assignments for example. This solution will hold all of your assignment projects. Your project for this assignment must be named **01_Fraction**. It is *vital* that you name your solution and 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 the file name, your name, the date you completed the assignment, the class name, assignment number and name, a brief description of the program, and hours worked on the assignment.
- c. Pay attention to the example output above. 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. Be aware that C++ is case-sensitive.
- e. Once you are sure that the program works correctly it is time to submit your program. You do this by logging on to grace and placing your complete solution folder (PUNetIDAssignments) in the **CS150-01 Drop** folder.
- f. The program must be in the drop folder by 1:00pm on the day that it is due. Anything submitted after that will be considered late.

2. A hard copy of your program

- a. The hard copy must be placed on the instructor's desk by 1:00pm on the day that it is due.
- b. The hard copy must be printed in color, double-sided, and stapled if necessary. I do not bring a stapler to class.

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

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

Programming Assignments: All assignments are to be programmed in C++ using Visual Studio 2017. Both the electronic copy and hardcopy of your assignments are due at 1:00pm on the day that they are due.

- The hardcopy must be placed on the instructor's desk before 1:00pm on the day the assignment is due. If the hardcopy uses more than one sheet, then all sheets must be stapled in the upper-left corner. The code must be printed in color. Failure to submit a hardcopy of the assignment will result in a loss of 30% of the assignment points.
- The electronic copy must be placed in the 'CS150-01 Drop' folder on Grace by 1:00pm on the day the assignment is due. Failure to submit an electronic copy will result in a loss of 70% of the assignment points.
- A program that does not successfully compile or produces no output loses 70% of the assignment grade.
- 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 turned in later than 48 hours of the assignment deadline will NOT be accepted.
- *One exception.* I do allow ONE programming assignment 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. To use this gift, you *must* send me an email before 1:00pm on the day the assignment is due. This email is to have GIFT as the subject and you must include your name and the assignment number and assignment name in the body of the email. If this information is not included in the email then the assignment will be considered late.
- Make sure that you test your programs before submitting them. You may only submit your assignment once.
- Refer to the syllabus for a description of what constitutes Academic Dishonesty.

The printers in Marsh are slow. Do NOT expect to be able to print your code 10 minutes before class!