Homework 1

Due May 25 by 12:30pm   **Points** 30   **Submitting** a file upload

Homework #1:

For the first assignment I want you to use the concepts that we have learned so far. Printf, Scanf, Conditionals, and Operators.

The first part is to do some fraction math. I want you to have the user input 2 different fractions. Each fraction will be input in the form of "a/b" *where a and b are both positive integers*. For each fraction you will store them in 2 integers (numerator and denominator). The operations you will be required to do are addition, subtraction, multiplication, and division.

After you do this, I want you to use a conditional statement to find out whether the first fraction is a improper fraction or not. If it is an improper fraction, print that it is and print it as a mixed number (make sure if the fraction is 0/b after doing the mixed number don't print the fraction part). This will require nesting conditionals. Otherwise, say it is a proper fraction.

After this, give me the decimal approximation of the first fraction to 2 decimals of precision. Remember what I have said about type casting.

The final thing you will do is ask the user for one last integer for a GPA grade. With this integer you will use a switch statement to print out what the letter grade would be.
Here is what you would print:
4 -> You got an A!
3 -> You got an B!
2 -> You got an C!
1 -> You got an D!
0 -> You got an F!
Anything else -> That isn't a grade

Remember. Document your code. DOCUMENT WELL. I'll be grading you on how meaningful your comments are. Also, use appropriate variable names. Not saying they need to be 50 characters long, but make sure they tell the person reading the code the purpose. I will be grading you on the correctness (meeting these specifications), design, documentation, and efficiency (which should be easy on this first homework).

Here is some sample input/output. I want your prints and scans to follow the same form as mine. Use the same words for printing.

```
Enter Fraction 1: 3/5
Enter Fraction 2: 2/7
Fraction Number 1: 3/5
Fraction Number 2: 2/7
Addition of Fractions: 31/35
Subtraction of Fractions: 11/35
Multiplication of Fractions: 6/35
Division of Fractions: 21/10
Fraction 1 is a proper fraction
Decimal Approximation of Fraction 1: 0.60
Enter in a GPA for the class (0-4 integer): 3
You got an B!
```

```
Enter Fraction 1: 15/5
Enter Fraction 2: 4/3
```

Fraction Number 1: 15/5

Fraction Number 2: 4/3

Addition of Fractions: 65/15

Subtraction of Fractions: 25/15

Multiplication of Fractions: 60/15

Division of Fractions: 45/20

Fraction 1 is an improper fraction

Fraction 1 as a Mixed Number: 3

Decimal Approximation of Fraction 1: 3.00

Enter in a GPA for the class (0-4 integer): **-4**

That isn't a grade

Enter Fraction 1: **19/7**

Enter Fraction 2: **3/7**

Fraction Number 1: 19/7

Fraction Number 2: 3/7

Addition of Fractions: 154/49

Subtraction of Fractions: 112/49

Multiplication of Fractions: 57/49

Division of Fractions: 133/21

Fraction 1 is an improper fraction

Fraction 1 as a Mixed Number: 2 5/7

Decimal Approximation of Fraction 1: 2.71

Enter in a GPA for the class (0-4 integer): **4**

You got an A!

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