**CISP-1020 Computer Science II/CITC-1313 .NET Programming**

**Chapter 10 Lab 2 – Class Diagramming I**

**Instructions**

Carefully read the narrative below.

* Bold each potential **class**.
* Underline each potential attribute or property.
* Italicize each potential *method*.

Using [LucidChart.com](http://www.lucidchart.com) (or similar application), develop a class diagram based on items identified above.

Create a class that encapsulates a fraction. A fraction has two components: a numerator and a denominator. The numerator is an integer number above the line in a fraction. The denominator is an integer number below the line in a fraction. Denominator values cannot be zero.

The value of both the numerator and the denominator are required to have a fraction. A means of "reducing" a fraction to its lowest terms is needed. All fractions need to be reduced to their lowest terms.

Numerous operations can be performed on fractions, including adding two fractions together, subtraction a fraction from another fraction, multiplying two fractions, and dividing a fraction by another fraction.

To add two fractions together: find a common multiple for both fraction's denominators; add both fraction's numerators together; reduce the resulting fraction.

To subtract a fraction from another fraction: find a common multiple for both fraction's denominators; subtract the second fraction's numerator from the first fraction's numerator; reduce the resulting fraction.

To multiple two fractions together: multiply both fraction's numerators together; multiply both fraction's denominators together; reduce the resulting fraction.

To divide a fraction by another fraction: multiple the first fraction's numerator by the second fraction's denominator; multiple the first fraction's denominator by the second fraction's numerator; reduce the resulting fraction. When dividing fractions, the second fraction's numerator cannot be zero.

The class should be able to return the resulting fraction in both string-form (e.g., "2/5", "11/7", etc.) and decimal-form (e.g., 0.4, 1.571, etc.). By default, round decimal-form values to three decimal places.

Copy/paste your resulting diagram below:

**Submission Instructions**

* Upload this file to the appropriate dropbox on eLearn.