Programming II

# Assignment I – Implement a Rational Class

### Due: Print out of both the Rational Class and your test harness is due at the beginning of the first class in Week 3

Do not attempt to reduce the object to its lowest form or to make proper rationals

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| **Rational**  Class |
| **Fields**  - Denominator : int  - Numerator : int |
| **Methods**  + Rational(numerator= 0, denominator =1)  + ToString() : string  + IncreaseBy(Rational other) : void  + DecreaseBy(Rational other) : void |

You will implement the Rational Class in Visual Studio. A short description of the class members is given below:

## Fields:

1. Denominator – this private field is an integer representing the bottom of the rational number
2. Numerator – this private field is an integer representing the top of the rational number

### Methods:

1. Rational() – This is the public constructor. It takes two parameters: integers representing the numerator (default is 0) and the denominator (default is 1). The method assigns the two arguments to the appropriate fields.
2. ToString() – This method overrides the same method of the Object class. It does not take any parameter but return a string representation of itself. You decide on the format for the output.
3. IncreaseBy() – This is a public method that takes a Rational value and adds it. This method does not output anything to the screen, return a value nor does it mutate the argument. It adds the argument to the current object
4. DecreaseBy() – This is a public method that takes a Rational value and subtracts it. This method does not output anything to the screen, return a value nor does it mutate the argument. It subtracts the argument from the current object.

## Testing

In your test harness, create 4 Rational objects, print them, do some addition and subtraction and print again