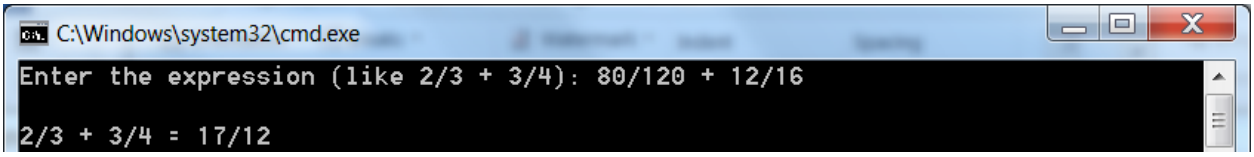
Project 6 (50 points)
Due FRIDAY, November 4 by midnight

Assignment Description:
You are to write a program that gets an expression involving two fractions and an operation (+, -, *, or /). You should print out the result as shown, reducing all fractions to lowest terms.



Implementation Requirements:
Your project will contain **two** classes: ***Fraction*** and ***Proj6***.

Fraction will be a general class that represents a fraction (i.e. used to create *Fraction* objects). It will have instance variables for the numerator and denominator and a single constructor to initialize their values. It must also define the following methods (for maximum points, use the method signatures given):

public String toString() **// used to display a fraction**

public Fraction plus(Fraction f) **// adds 2 fractions and returns reduce fraction result**

public Fraction minus(Fraction f) // subtracts 2 fractions and returns reduce fraction result

public Fraction times(Fraction f) // multiplies 2 fractions and returns reduce fraction result

public Fraction divide(Fraction f) // divides 2 fractions and returns reduce fraction result

private void reduce ( ) **// modifies num/denom so fraction reduced to lowest terms**

The *toString* method should return a string that can be used to display the fraction in the format numerator/denominator. Do not print within the *toString* method. The *plus* method should return a new Fraction object that is *THIS* Fraction plus *f*. The *minus*, *times*, and *divide* method should be similar, but with a different operation. At some point, each *Fraction* should be reduced to lowest terms. Where you do this is up to you, but make sure they are reduced before they are displayed.

The **Proj6** class must contain ONLY a single method (main). It should get user input for the expression (which will have two fractions and an operation). It should then create two Fraction objects, call the appropriate operation method (plus, minus, times, or divide), and display the results by calling *toString* for each Fraction. (A loop is not required)

You may assume that the user will enter the expression using the following format:

4/8 – 3/12

Notice that there are no spaces between the numerator, '/', and denominator. There *are* spaces surrounding the operation ('-', in this case).

Documentation:
You should put a description of the project at the top of the file **and at the top of each method**. Please use this template for the top of the file:

```
/**
 * (description of the project)
 *
 * @author (your name)
 * @version (which number project this is)
 */
```

Please use this template for the top of each method:

```
/**
 * (description of the method)
 *
 * @param (describe first parameter)
 * @param (describe second parameter)
 * (list all parameters, one per line)
 * @return (describe what is being returned)
 */
```

Submission:
To submit your project, first create a folder called proj6, and move your completed *Proj6.java* **and** *Fraction.java* files into that folder. Then, right-click on that folder and select "Send To → Compressed (zipped) folder". This will create the file proj6.zip.

Go to "Files and Content->Modules->Submit Projects Here" on K-State Online. Select your lab time and upload the proj6.zip file. **Put your name and Project 6 in the description box.**

Grading:

Programs that do not compile will receive a grade of 0.

Requirement	Points
Format of Fraction and Proj6 classes with given method signatures	**9**
Gets two fractions and operation from user in a single line (as shown above) and creates two Fraction objects	**5**
Gets Fraction result by calling correct method	**4**
Prints result by correctly calling the *toString* method for each Fraction – format exactly matches example	**5**
plus is correct	**5**
minus is correct	**5**
times is correct	**5**
divide is correct	**5**
Each fraction is reduced to lowest terms	**5**
Documentation/naming/submission	**2**
Total	**50**