**Optional Project 1**

**Due: March 30, 2015**

In this project, you will develop a program that receives infix expressions, convert them to postfix expressions, and then evaluate the produced post expressions. Use a stack and a queue in your program implementing the algorithms discussed in class.

If you have the time and inclination, you may submit, *in addition to the specified keyboard input calculator*, a version that uses a graphical interface. This interface should have button for each of the numeric digits and decimal, operators, clear and quit, and a enter key to be used between adjacent floating point inputs. The GUI version of the program should have its main() method in a separate class called RPNCalcGUI. Thus, the two version are executed as two separate programs. The GUI version of the program will be worth up to an addition 50% in the grading process. You may use the java.io and java.lang class libraries (and the java.awt or javax.swing library if you are doing the extra credit GUI - you should write any such GUI code yourself, rather than using generators in some IDE). I know I did not cover this topic. It is a chance for you to demonstrate your motivation to make the deficiency on the midterm exam.

Using the following expressions to test your program:

1. 10 \* (5 – 3) + 75 / 52  x ( 2 + 3)
2. 8 / 4 + 7 \* ( 5 + 2) – 33 \* 2
3. (5 + 3) \* 2 – 10 + 4 \* (4-1)