Assignment #7
Visual Basic Assignment
Dr. John Abraham
Postfix notation
Due date – Oct 20, 2008.

Note: The graphics portion of the cards game is postponed; it is given assignment #8. Card game (Assignment #5) due date: Oct 13, 2008. Graphics portion (Assignment #8 due date: Oct 27, 2008). Those of you would like to do a different card game for Assignment #8, you are encouraged to do so. Students in the past have done black jack, solitaire, poker, etc.

In a conventional arithmetic expression, the operator is between the operands (2 + 3); this is called infix notation. Computers prefer postfix notation in which the operator is written to the right of its operands. A compiler would have to convert the infix to a postfix. Consider the following problems:

Infix	Postfix
(6.2 + 3) * 5 – 8 / 4	6.2 3 + 5 * 8 4 / -
(3 + 4) * 5	3 4 + 5 *
3 + 4 * 5	3 4 5 * +

Write a program to

Accept a Postfix problem as a string (a number could be real or integer).
Parse the string to find the operands and opcodes
Opcodes allowed are: +, - , * , /, \, M
(M is for mod)

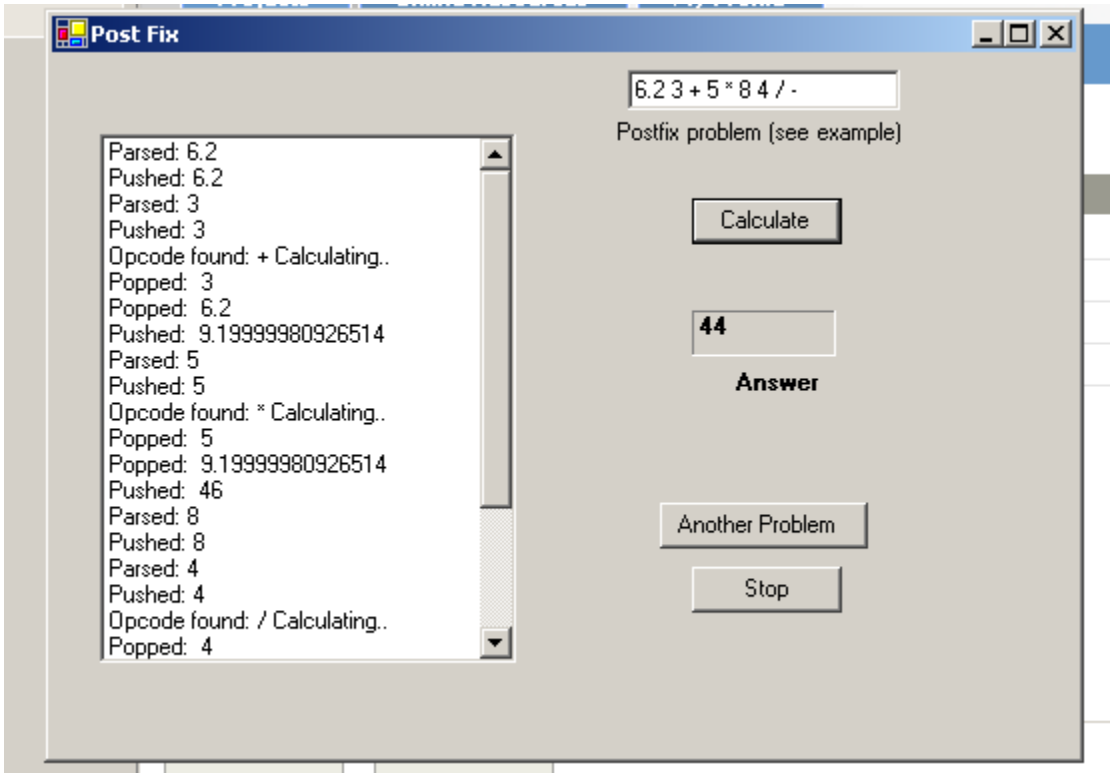
Using a stack data structure (that you create) do the calculation. Implement stack either as a class or a module.
Display all activities in a dialog box.
Display the result in a label box.

Explanation:
We evaluate the expression by scanning from left to right. Consider the problem 6 2 / 5 +. Look for the first operator beginning from left. The division operator is applied to the immediate previous operands. The divisor would be the later one, in this case 2. Now the problem has been reduced to 3 5 +. Continue processing until the end of the problem statement.
Here are some problems with results.

postfix expression	result
4 5 7 2 + - *	-16
3 4 + 2 * 7 /	2

* this description and the samples are taken from Nell Dale's Book.

5 7 + 6 2 - * 48


Post Fix
6.2 3 + 5 * 8 4 / -
Postfix problem (see example)
Parsed: 6.2
Pushed: 6.2
Parsed: 3
Pushed: 3
Opcode found: + Calculating..
Popped: 3
Popped: 6.2
Pushed: 9.19999980926514
Parsed: 5
Pushed: 5
Opcode found: * Calculating..
Popped: 5
Popped: 9.19999980926514
Pushed: 46
Parsed: 8
Pushed: 8
Parsed: 4
Pushed: 4
Opcode found: / Calculating..
Popped: 4
Calculate
44
Answer
Another Problem
Stop