

# CSCI 3327 Visual Basic (Fall 2011)

## Assignment #8

Instructor: Dr. Xiang Lian  
Due Date: See the course website

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
$5 7 + 6 2 - *$	48

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

Please submit:

1. Program listing; and
2. The screen captures (see the Appendix).

- Your program should begin with a comment section that would include the following:

PROGRAMMERS NAME: \_\_\_\_\_

STUDENT ID: \_\_\_\_\_

CLASS: \_\_\_\_\_ ASSIGNMENT #: \_\_\_\_\_

DATE DUE: \_\_\_\_\_ DATE TURNED IN: \_\_\_\_\_

- **Note:** Please send the files you created to [Blackboard](#).

## • Appendix: Examples of Screen Captures



