CSC212 Data Structures

Project 5 – Help File: Evaluating a Postfix Notation using a stack

Project 5 is to create a program to evaluate a postfix notation using a stack. You must use a Stack class to implement this abstract data type.

Your program will read in valid postfix expressions and evaluate and provide an answer to each expression. You can use the sample expressions in the Lecture Notes on Stacks and make more on your own.

For each expression, process each term / token (operand or operator) one by one.
If a token is an operand, push it into the stack.
If a token is an operator, pop the stack top item as the 2nd operand and pop the next item as the 1st operand. Evaluate the expression and push the result back into the stack. This result will be either the operand for the next operation or, if that was the last operation, the result of the entire postfix notation.
Output your result.

Given a postfix notation, for example: 3 5 1 - *
The figures below represent the each step and the stack content.

Token	Action	Stack content
3	Push 3	3
5	Push 5	5 3
1	Push 1	1 5 3
-	Pop 1 Pop 5 Calculate 5-1=4 Push 4	4 3

*	Pop 4 Pop 3 Calculate 3*4=12 Push 12	12