

Task: Word Machine Emulator

A word machine is a system that performs a sequence of operations on a stack of integers. Initially the stack is empty. The sequence operation is given as an array of string.

Example: ["23 DUP 4 POP 5 DUP + DUP + -", "5 6 + -"]

Get the result of the [last] operation that the machine returns **for each** input values.

Example: [output1, output2]

Symbols and meanings

POP: The machine removes the topmost number from the stack

DUP: The machine pushes a duplicate of the topmost number onto the stack

+: The machine pops the topmost elements from the stack, adds them and pushes the sum on to the stack.

-: The machine pops the topmost elements from the stack, subtracts them and pushes the result on to the stack.

Example 1: "23 DUP 4 POP 5 DUP + DUP + -"

Operation Example

Operation	Comment	Stack
		[empty]
23	Push 23 on to Stack	[23]
DUP	Duplicate 23	[23, 23]
4	Push 4 on to the stack	[23, 23, 4]
POP	POP 4 out of the stack	[23,23]
5	Push 5	[23, 23, 5]
DUP	Duplicate 5	[23, 23, 5, 5]
+	Add 5 5 and push result	[23, 23, 10]
DUP	Duplicate 10	[23, 23, 10, 10]
+	Add 10 10 and push result	[23, 23, 20]
-	Subtract 23 20	[23, 3]

The machine returns **3** as a result of the operation

Example 2: "5 6 + -"

Given a string '5 6 + -', the machine reports an **error** since after the addition, there's only one number on the stack, but the subtraction expects 2 numbers

Assume that the length of the sequence string is in the range of 0 to 3000. Focus on correctness.

+ If time allows, allow for a way for user to enter string and process.

++ If allow user to enter array of strings

++ If time allows, also print out each process/stack from input to result, similar to in the table above.