

Programming II, 2018/19
1st midterm, 2019/03/12

Name:

Exercise 3 (0.5 points). Evaluate the following postfix expression, making explicit use of a stack.

3 4 + 3 1 - * 6 4 + *

3	4	+	3	1	-	*	6	4	+	*	;
				1				4			
	4		3	3	2		6	6	10		
3	3	7	7	7	7	14	14	14	14	140	

Cuando llega el ; se extrae 1 elemento de la pila. Como la pila queda vacía, lo extraído (140) es la solución (si no quedara vacía, la expresión podría ser errónea).

When ; is read, one element is extracted from the stack. Then the stack is empty. Therefore, the extracted value is the solution (otherwise the expression would be wrong).

Exercise 4 (0.5 points). Translate the following infix expression into postfix notation, making explicit use of a stack.

(A + B) * (C * D ^ E / F)

Symbol	Partial translation	Stack
((
A	A	(
+	A	(+
B	AB	(+
)	AB+	
*	AB+	*
(AB+	* (
C	AB+C	* (
*	AB+C	* (*
D	AB+CD	* (*
/	AB+CD	* (* /
E	AB+CDE	* (* /
/	AB+CDE / *	* (/
F	AB+CDE / * F	* (/
)	AB+CDE / * F /	*
;	AB+CDE / * F / *	