Lab 05: Integer arithmetic

Assignment E: Simple integer calculator

Submit your source code to Mooshak AC2122 contest, assignment E, at:

http://deei-mooshak.ualg.pt/~hdaniel

up to 16:30, May 12st, 2022

Task
Develop a simple calculator that supports the basic arithmetic operations:

+	addition
-	subtraction
*	multiplication
/	quotient of the integer division
%	remainder of the integer division

The operands are only negative and positive integers with no more than 8 digits (plus an optional - sign), which fit in 32 bits 2's complement representation.
A negative number has the minus sign immediately at the left of the most significant digit, without spaces in between:

-19274

If there is a character other than a digit in an integer, it is an error.

To convert a string to an integer:

1) subtract from each digit's ascii code, the ascii code of character zero, which is '0' or 48. This gives the value of the digit.

2) multiply the value of each digit by the power of 10 to its position, where the position of the right most digit is 0, and add all:

$$2301 = 2 \times 10^3 + 3 \times 10^2 + 0 \times 10^1 + 1 \times 10^0$$

Constraints:
The input must be read as a string, the operands and the operator must be extracted from that string.

Input
The input have just one line, with at most 30 characters. This line includes the left operand, one or more spaces, the operator, one or more spaces and the right operand. The only characters in input are digits, operators and spaces.
Only invalid input needed to check is if an operand has a non digit character.

Output
Just one line with the result of the operation, or the message "error" if an operand is invalid. The line in ended by a newline character '\n'.

Input sample 0
123 + 34

Output sample 0
157

Input sample 1
-23 * 2

Output sample 1
-46

Input sample 2
33 - -25

Output sample 2
58

Input sample 3
131 / 4

Output sample 3
32

Input sample 4
131 % 4

Output sample 4
3

Input sample 5
12s34 + 2

Output sample 5
error

Input sample 6
12 * -a2

Output sample 6
error

dec	hex	oct	char
32	20	040	space
33	21	041	!
34	22	042	"
35	23	043	#
36	24	044	$
37	25	045	%
38	26	046	&
39	27	047	'
40	28	050	(
41	29	051	)
42	2a	052	*
43	2b	053	+
44	2c	054	,
45	2d	055	-
46	2e	056	.
47	2f	057	/
48	30	060	0
49	31	061	1
50	32	062	2
51	33	063	3
52	34	064	4
53	35	065	5
54	36	066	6
55	37	067	7
56	38	070	8
57	39	071	9
58	3a	072	:
59	3b	073	;
60	3c	074	<
61	3d	075	=
62	3e	076	>
63	3f	077	?