

Adding Integers

Write a program `sum.html` that reads a sequence of integers from `prompt` method, and reports their sum.

Example:

If you have the following numbers (this is one single input):

10 15 16 -7 102 345

then it should report:

481

A Calculator

We want to make a simple calculator that can add and subtract integers and will accept arbitrarily long mathematical formulas composed of symbols `+`, `-`, and non-negative integer numbers.

Imagine you have a formula such as:

100 + 50 - 25 + 0 + 123 - 1

it should compute and print the answer:

247

It may sound tricky, but it is actually easy to write such a program, and you already know all the needed tools. Just think carefully how to put it all together.

Specifically, write a program `calc.html` that reads a sequence of one or more non-negative integers written to be added or subtracted.

Space characters can be anywhere in the input. The program should compute and print the result of the input summation.

Possible input for your program may look like this:

15

10 + 3 + 0 + 25

5+6- 7 -8 + 9 + 10 - 11

1 + 1 + 1 + 1 +

1 + 1 + 1 + 1 +

1 + 1 + 1 + 1 +

1 + 1 + 1 + 1

(Each of the inputs above is a separate input containing one single formula, even if it spans multiple lines.)

The corresponding outputs should be 15, 38, 4, and 16.

Reading multiple formulas

Write a better version of the calculator, calc2.html, that can evaluate multiple arithmetic expressions. Let's use the semicolon symbol that must be used at the end of each expression in the input.

15 ;

10 + 3 + 0 + 25 ;

5 + 6 - 7 - 8 + 9 + 10 - 11 ;

When we run the program with that input, the output should evaluate all of the expressions and print them each on its own line:

15

38

4

Squares

Write an even better calculator program `calc3.html` that can understand squared numbers. We are going to use a simplified notation X^\wedge to mean x^2 . For example, $10^\wedge + 7 - 51^\wedge$

should mean $10^2 + 7 - 51^2$.

Example:

When reading input

`5^\wedge;`

`1000 + 6^\wedge - 5^\wedge + 1;`

the program should report:

25

1012

A hint:

To take into account $^\wedge$, don't add or subtract new numbers right away after reading them. Instead, remember the number, read the next operator and if it is a $^\wedge$, square the remembered number, then add or subtract it.