README

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This program is designed to read in input in the format '+' for addition or '-' for subtraction. The next two arguments are the numbers to be added or subtracted according to their base.
I have also implemented a format checker; if the input is not in the correct format an error message is generated.

Data Structures Used:

*Linked List: To hold arbitrary numbers
*Array: to hold each single digit obtained from mod and divide

Calc Analysis & Design:
The program begins by checking for bad input in constant time.
Then it converts each of the inputs into something that can be worked on. The main data structure to hold the numbers is a linked list with unsigned int values. Depending on the operator input, It runs through the appropriate (add or subtract) function which weeds out negative values and deals with them such that the result is always an operation between two positive numbers

eg.

2 - (-2) = 2 + 2
(-3) +4 = 4 – 3
(-1) + (-1) = -(1 + 1) ...etc.

These operator functions run in linear time O(n + m) where n and m are the lengths of the first and second numbers in their own bases, respectively.
If output value is d, the print run-time is constant.
For any other output base it runs in linear time O(n) where n is the length of the linked list of the number.