Arrow Array

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

Mr. Nežmah has an array of length n and he wants to fill it up with arrows pointing either to the left or to the right. However, he has $n-1$ conditions he would like to be satisfied. For each i from 1 to $n-1$, he has a non-zero integer a_i, and he would like the following to hold:

- if $a_i > 0$, then the sum of the number of arrows in the first i positions pointing to the right and the number of arrows in the last $n-i$ positions pointing to the left should be at least a_i
- if $a_i < 0$, then the sum of the number of arrows in the first i positions pointing to the left and the number of arrows in the last $n-i$ positions pointing to the right should be at least $-a_i$

In other words, for every line between two consecutive elements, he either has a condition on the number of arrows pointing **towards** it, or on the number of arrows pointing **away from** it.

Help Nežmah find an array that satisfies his conditions!

Input

The first line contains a single integer t ($1 \le t \le 2 \cdot 10^4$), the number of test cases.

The first line of each test case contains a single integer n ($2 \le n \le 3 \cdot 10^5$).

The second line of each test case contains the array a ($-n \le a_i \le n$, $a_i \neq 0$). The array a will always be such that there is a solution.

It is guaranteed that the sum of n over all test cases does not exceed $3 \cdot 10^5$.

Output

For each test case, output a string of length n, where the i-th character is $<$ if the arrow there faces left, and it's $>$ if it faces right. If there are multiple solutions, you can output any of them.

Example

standard input	standard output
7 7 4 -2 -3 5 -3 3 5 4 -2 4 -2 4 -2 3 3 5 -2 -4 -1 3 6 1 2 -1 -2 -3 2 2 2 -1	<<>><<< ><><< >>>< <<>>< <<<<<< >< <<