

## Problem K. Varză Murată

Input file: *standard input*  
Output file: *standard output*  
Time limit: 5 seconds  
Memory limit: 1024 mebibytes

Varză murată is Romanian pickled cabbage, traditionally fermented in brine with salt and spices, prized for its tangy flavor and used both as a side dish and as a key ingredient in dishes like sarmale.

This year the 2025-th Murată Varză Contest (MVC) takes place. The contest rules are very strict but also very unusual. There are  $n$  pieces of varză murată standing in a row, where the  $i$ -th varză murată has sourness  $a_i$ . The jury consists of two persons, Minnie and Maxim.

Minnie likes varză that is not very sour (odd choice), so from her perspective, given two pieces of varză  $i$  and  $j$ , the one with the smaller sourness value wins. Maxim likes varză that is very sour, so from his perspective, given two pieces of varză  $i$  and  $j$ , the one with the higher sourness value wins. Because they can't quite agree, the order in which they judge the varză was chosen by someone else.

Assume there is a list of  $k$  pieces of varză left in the contest. If it is Maxim's turn to judge, he will go through each pair of adjacent entries in the list and choose the one with bigger sourness to move to the next stage. If it is Minnie's turn to judge, she will go through each pair of adjacent entries in the list and choose the one with smaller sourness to move to the next stage. The resulting list contains exactly  $k - 1$  entries.

Note that the list may contain the same piece of varză more than once. For example, if the remaining pieces in the list have sourness 4, 8, 1, then Minnie's list of sourness for the next stage would be 4, 1, while Maxim's list would be 8, 8, advancing the middle entry twice.

The winner is the piece remaining in the list when  $k = 1$ . You, being very impatient, want to know the winner at the end of the contest as fast as possible. Given the initial sourness values and the order in which the two judges judge, compute the sourness value of the final varză.

### Input

The first line contains one integer,  $n$  ( $2 \leq n \leq 10^6$ ) representing the number of pieces of varză in the contest.

The second line contains  $n$  integers  $a_1, a_2, \dots, a_n$ : the sourness values ( $1 \leq a_i \leq n$ ).

The third line contains a string of  $n - 1$  characters. Each character is either 'm' representing Minnie or 'M' representing Maxim.

### Output

Print one integer, the sourness value of the overall winner.



## Examples

<i>standard input</i>	<i>standard output</i>
7 1 3 4 6 5 1 3 mMMmMm	5
7 4 5 3 6 5 1 3 mMMmMm	5
2 1 2 M	2

## Note

The following image presents the first example. At the bottom, there are the initial sourness values. Each level then contains the sourness values after the judge went through them.

