B. Bus of Characters

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

In the Bus of Characters there are n rows of seat, each having 2 seats. The width of both seats in the i-th row is w_i centimeters. All integers w_i are distinct.

Initially the bus is empty. On each of 2n stops one passenger enters the bus. There are two types of passengers:

- an introvert always chooses a row where both seats are empty. Among these rows he chooses the one with the smallest seats width and takes one of the seats in it;
- an extrovert always chooses a row where exactly one seat is occupied (by an introvert). Among these rows he chooses the one with the largest seats width and takes the vacant place in it.

You are given the seats width in each row and the order the passengers enter the bus. Determine which row each passenger will take.

Input

The first line contains a single integer n ($1 \le n \le 200000$) — the number of rows in the bus.

The second line contains the sequence of integers $w_1, w_2, \ldots, w_n$ ($1 \le w_i \le 10^9$), where w_i is the width of each of the seats in the i-th row. It is guaranteed that all w_i are **distinct**.

The third line contains a string of length 2n, consisting of digits '0' and '1' — the description of the order the passengers enter the bus. If the j-th character is '0', then the passenger that enters the bus on the j-th stop is an introvert. If the j-th character is '1', the the passenger that enters the bus on the j-th stop is an extrovert. It is guaranteed that the number of extroverts **equals** the number of introverts (i. e. both numbers equal n), and for each extrovert there **always** is a suitable row.

Output

Print 2n integers — the rows the passengers will take. The order of passengers should be the same as in input.

Examples

input
2 3 1 0011
output
2 1 1 2

input
6 10 8 9 11 13 5 010010011101
output
6 6 2 3 3 1 4 4 1 2 5 5

Note

In the first example the first passenger (introvert) chooses the row 2, because it has the seats with smallest width. The second passenger (introvert) chooses the row 1, because it is the only empty row now. The third passenger (extrovert)

chooses the row 1, because it has exactly one occupied seat and the seat width is the largest among such rows. The fourth passenger (extrovert) chooses the row 2, because it is the only row with an empty place.