

## D. Gluttony

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

You are given an array  $a$  with  $n$  distinct integers. Construct an array  $b$  by permuting  $a$  such that for every non-empty subset of indices  $S = \{x_1, x_2, \dots, x_k\}$  ( $1 \leq x_i \leq n$ ,  $0 < k < n$ ) the sums of elements on that positions in  $a$  and  $b$  are different, i. e.

### Input

The first line contains one integer  $n$  ( $1 \leq n \leq 22$ ) — the size of the array.

The second line contains  $n$  space-separated distinct integers  $a_1, a_2, \dots, a_n$  ( $0 \leq a_i \leq 10^9$ ) — the elements of the array.

### Output

If there is no such array  $b$ , print  $-1$ .

Otherwise in the only line print  $n$  space-separated integers  $b_1, b_2, \dots, b_n$ . Note that  $b$  must be a permutation of  $a$ .

If there are multiple answers, print any of them.

### Examples

input
2 1 2
output
2 1

input
4 1000 100 10 1
output
100 1 1000 10

### Note

An array  $x$  is a permutation of  $y$ , if we can shuffle elements of  $y$  such that it will coincide with  $x$ .

Note that the empty subset and the subset containing all indices are not counted.