

# Water Fountain

Time Limit: 2 Second  
Memory Limit: 256 MB

A new water fountain consisting of  $n$  vertically aligned reservoirs is built at the Main Quad. The reservoirs are labeled as  $1, \dots, n$  from top to bottom, and the  $i$ -th reservoir has length  $a_i$ , as shown below (sorry for the ugly drawing):

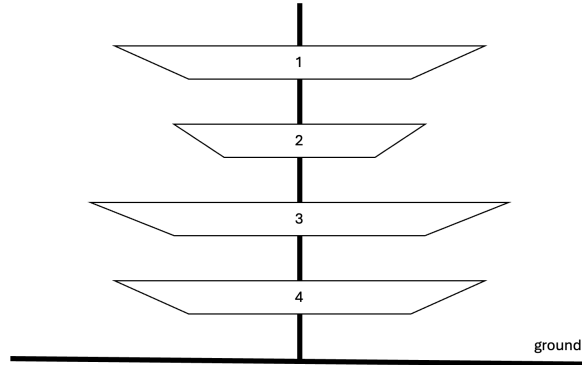


Figure 1: The water fountain in the sample input

Champaign-Urbana rains a lot in fall, and it is quite common that the reservoirs are full and the extra water will flow into lower reservoirs with a larger length. If such reservoir doesn't exist, the water will flow onto the ground. Now you are wondering, for each reservoir, where would the extra water flow to if it is full. Write a program to solve this problem given the data about the water fountain.

## Input

The first line contains a single integer  $n$  ( $1 \leq n \leq 10^6$ ) - the number of reservoirs in the fountain.

The second line contains  $n$  integers  $a_1, \dots, a_n$  ( $1 \leq a_i \leq 10^9$ ) - the size of each reservoir.

## Output

Output  $n$  integers, where the  $i$ -th number denotes the indices of reservoirs receiving the extra water if the  $i$ -th reservoir is full. If the water will flow onto the ground, output  $-1$ .

## Sample Inputs

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4
2 1 4 3
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## Sample Outputs

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3 3 -1 -1
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