Left Max

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Given a number N and an array A of N numbers, print the maximum in the range from 1 to i for each $i \leq N$.

Note: Solve this problem using recursion.

Input

First line contains a number N $(1 \leq N \leq 10^5)$ number of elements.

Second line contains N numbers $(-10^9 \leq A_i \leq 10^9)$.

Output

Print N numbers, the maximum from index 1 to index i.

Example

standard input	standard output
5 4 3 5 7 3	4 4 5 7 7