

medians**100 points**Source code: `medians.c`, `medians.cpp`, `medians.pas`Input file: `medians.in`Output file: `medians.out`Time limit: **0.3 seconds**Memory limit: **64 MB**Let A be a permutation of $1, 2, 3, \dots, 2*N - 1$.We define the prefix medians of A as an array B with N elements: where $B[i]$ is the median of $A[1], A[2], \dots, A[2*i-1]$.**Note:** The median of a list of M numbers (where M is odd) can be found by sorting the numbers and picking the middle one.**Task**You are given N and the array B . You are asked to determine a permutation A whose prefix medians are precisely B .**Description of input**The input file contains 2 lines. The first line contains one integer, N . The second line describes B : N integers, separated by space.**Description of output**The output file should contain A : one line with $2*N-1$ integers separated by space. If there are multiple permutations A leading to the same input array B , you may output any one. In all test data, there will always be at least one solution.**Constraints**

- $1 \leq A[i] \leq 2*N - 1$, for every i from 1 to $2*N - 1$
- $1 \leq B[i] \leq 2*N - 1$, for every i from 1 to N
- $1 \leq N \leq 100\ 000$
- 60% of the tests will have $N \leq 1000$

Example

<code>medians.in</code>	<code>medians.out</code>
5	1 9 3 2 4 8 7 5 6
1 3 3 4 5	