Problem F. Difference Row

Time limit 2000 ms
Mem limit 262144 kB

You want to arrange n integers $a_1, a_2, ..., a_n$ in some order in a row. Let's define the value of an arrangement as the sum of differences between all pairs of adjacent integers.

More formally, let's denote some arrangement as a sequence of integers $x_1, x_2, ..., x_n$, where sequence x is a permutation of sequence a. The value of such an arrangement is $(x_1 - x_2) + (x_2 - x_3) + ... + (x_{n-1} - x_n)$.

Find the largest possible value of an arrangement. Then, output the lexicographically smallest sequence x that corresponds to an arrangement of the largest possible value.

Input

The first line of the input contains integer n ($2 \le n \le 100$). The second line contains n space-separated integers $a_1, a_2, ..., a_n$ ($|a_i| \le 1000$).

Output

Print the required sequence $x_1, x_2, ..., x_n$. Sequence x should be the lexicographically smallest permutation of a that corresponds to an arrangement of the largest possible value.

Sample 1

Input	Output
5 100 -100 50 0 -50	100 -50 0 50 -100

Note

In the sample test case, the value of the output arrangement is $(100 - (-50)) + ((-50) - 0) + (0 - 50) + (50 - (-100)) = 200$. No other arrangement has a larger value, and among all arrangements with the value of 200, the output arrangement is the lexicographically smallest one.

Sequence $x_1, x_2, ..., x_p$ is *lexicographically smaller* than sequence $y_1, y_2, ..., y_p$ if there exists an integer r ($0 \le r < p$) such that $x_1 = y_1, x_2 = y_2, ..., x_r = y_r$ and $x_{r+1} < y_{r+1}$.