

A. Difference Row

time limit per test

2 seconds

memory limit per test

256 megabytes

input

standard input

output

standard output

You want to arrange n integers a_1, a_2, \dots, 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, \dots, x_n , where sequence x is a permutation of sequence a . The value of such an arrangement is $(x_1 - x_2) + (x_2 - x_3) + \dots + (x_{n-1} - x_n)$.

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 ($2 \leq n \leq 100$). The second line contains n space-separated integers a_1, a_2, \dots, a_n ($|a_i| \leq 1000$).

Output

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

Examples

input

Copy

5

100 -100 50 0 -50

output

Copy

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