Hasim and his friends walk in the forest at the night. They have a magic stone that can fly people who touch it. However, the magic stone can fly at most two people at the same time. Everyone has different flight speeds. If two people touch the magic stone at the same time, both of them will fly according to the slower person. There is a great cliff that Hasim and his friends have to cross. Given an sorted array of positive different integers (maximum 10^9) denoting the flight time of "n" people (maximum 10^4). Find the minimum total time in which all people can cross.

Input Format

The first line contains the integer n, the number of elements which is sorted. The next line contains n integers that sorted flight times.

Output Format

minimum total time in which all people can cross.

Constraints

$1 \le n \le 10^4$ $1 \le$ maximum flight time $\le 10^9$

Sample Input 1

Sample Output 1

Explanation 1

Firstly '1' and '4' cross the cliff together with total time 4 minutes (maximum of 1, 4) Then the person '1' will come back in 1 minute. Lastly '1' and '5' cross the cliff with total time 5 minutes. At the end the total time will be 4+1+5 = 10