



ICPC International Collegiate Programming Contest
The Asia West Regional Onsite Competition
2026

Peradeniya, Sri Lanka

The Place That Sends You Mad

Difficulty: Medium

Problem Statement:

Sandy wanted to get a permit for his chicken farm and went to a government office. Unsurprisingly, he couldn't get the permit because of the queue. So, he wants to find the minimum time that the whole queue can be served.

These are Sandy's findings:

1. The queue **leads** to the officer contains people, and each person has a positive integer a_i , and that is the time that is needed to complete the permit.
2. The government official can serve two citizens simultaneously. However, if one takes a_x time and the other takes a_y time, the time needed to work both of them will be equal to $\max(a_x, a_y)$.
3. Getting a permit in this office is an **uninterruptible** process, and therefore if two citizens simultaneously come to the office, both will finish simultaneously.

The process is such that if the queue has more than one person waiting, two of the three people in front of the queue will be sent to the **officer** simultaneously. If the queue has only one person, that person can directly go to the **officer** alone.

Input Format

The first line contains a single number, n : the citizens in the queue. The second line contains the space-separated integers $a_1, a_2, a_3, \dots, a_n$ which are the serving times for each person in the queue.

Constraints

- $0 \leq n \leq 10^3$
- $0 \leq a_i \leq 10^6$

Output Format

Print a single number, the minimum time to serve all the citizens.



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Sample Input 0

2
26 10

Sample Output 0

26

Sample Input 1

4
2 4 6 8

Sample Output 1

12