

## Candies Distribution

Pulkit and Pandya won a lottery in which they were given N packets of candies. The packets are placed in linear fashion and they have different number of candies. Now they want to distribute the candies among themselves (they cannot tear apart any packet). So they decide to play a game. They will move turn by turn, in each turn one can pick 1 packet from any one of the sides of the line (i.e. either from the left end or the right end - they cannot pick from somewhere in between the line). Pandya starts first, and as he is greedy he wants you to help him so that he can earn as many candies as possible (ah he might be in loss by starting first ;)). Both of them are smart enough to play optimally! You have to find out the final counts of candies with Pandya and Pulkit (Pulkit will also try to get as many candies as possible).

### Input

First line - n

Second line - n space separated positive integers telling number of candies in ith packet

### Output

One line - Two space separated integers telling number of candies with Pandya and number of candies with Pulkit.

### Example

Input :

3

2 4 5

Output:

7 4

(Pandya picks up 5, pulkit picks up 4 and then pandya picks up 2 again.)

### Constraints

$1 \leq n \leq 1000$

$1 \leq a[i] \leq 10^9$

**Time Limit:** 1 sec

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