

A. Sereja and Dima

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Sereja and Dima play a game. The rules of the game are very simple. The players have n cards in a row. Each card contains a number, all numbers on the cards are distinct. The players take turns, Sereja moves first. During his turn a player can take one card: either the leftmost card in a row, or the rightmost one. The game ends when there is no more cards. The player who has the maximum sum of numbers on his cards by the end of the game, wins.

Sereja and Dima are being greedy. Each of them chooses the card with the larger number during his move.

Inna is a friend of Sereja and Dima. She knows which strategy the guys are using, so she wants to determine the final score, given the initial state of the game. Help her.

Input

The first line contains integer n ($1 \leq n \leq 1000$) — the number of cards on the table. The second line contains space-separated numbers on the cards from left to right. The numbers on the cards are distinct integers from 1 to 1000.

Output

On a single line, print two integers. The first number is the number of Sereja's points at the end of the game, the second number is the number of Dima's points at the end of the game.

Examples

input	Copy
4 4 1 2 10	
output	Copy
12 5	
input	Copy
7 1 2 3 4 5 6 7	
output	Copy
16 12	

Note

In the first sample Sereja will take cards with numbers 10 and 2, so Sereja's sum is 12. Dima will take cards with numbers 4 and 1, so Dima's sum is 5.

Codeforces Round 223 (Div. 2)

Finished

Practice



Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

Submit?

Language: GNU G++17 7.3.0

Choose file: Choose File No file chosen

Submit

Problem tags

greedy implementation two pointers

*800

No tag edit access

Contest materials

- Codeforces Round #223
- Tutorial

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