Task 2: `Party`

James has n friends and wants to host a party. He wants to invite zero or more friends and he knows that they will come if they get invited. Each friend gets $a[i]$ happiness from attending the party. Note that some friends may not want to go and have negative $a[i]$.

He needs to seat the friends he invites but due to social distancing measures, no two friends can sit beside each other. He only has n seats, help him figure out who he should invite to maximize the total happiness they get!

Input format

Your program must read from standard input.

The first line contains a single integer n

The second line contains n integers $a[i]$ representing the happiness each friend can get.

Output format

Your program must print to standard output.

The output should contain one integer, the maximum total happiness of friends who get invited. Do not print any additional text such as 'Enter a number' or 'The answer is'.

Subtasks

For all testcases, the input will satisfy the following bounds:

- $1 \le n \le 200\,000$

- $-10^9 \le a[i] \le 10^9$

Your program will be tested on input instances that satisfy the following restrictions:

Subtask	Marks	Additional Constraints
0	0	Sample Testcases
1	49	$n \leq 3$
2	38	$n \leq 1000$
3	13	No additional constraints

Sample Testcase 1

This testcase is valid for subtasks 2 and 3.

Input	Output
5 3 2 -1 4 5	12

Sample Testcase 1 Explanation

James has 5 seats. He can invite friends 1, 4 and 5 and seat them as such, leaving an empty seat between them.

1		4		5

This brings his friends a total happiness of $a_1 + a_4 + a_5 = 3 + 4 + 5 = 12$.

Sample Testcase 2

This testcase is valid for all subtasks.

Input	Output
1 10	10

Sample Testcase 2 Explanation

James can invite the one friend and seat them in the one seat gaining a total happiness of 10.

Sample Testcase 3

This testcase is valid for subtasks 2 and 3.

Input	Output
6 1 -3 2 10 -4 9	21

Sample Testcase 3 Explanation

James can invite friends 3, 4, and 6 and sit them as such, leaving an empty seat between them.

3		6		4	

This brings his friends a total happiness of $a_3 + a_4 + a_6 = 2 + 10 + 9 = 21$.