Coding Area

Round Vaults in Bank

Problem Description

In the strong room of ABC bank there are N vaults arranged in a circle. The amount of money inside each vault displayed on the door. You can empty any number of vaults as long as you do not empty more than 2 out of any 5 adjacent vaults. If you attempt to break more than 2 of any 5 adjacent vaults, an alarm sounds and the sentry a sharp shooter will kill you instantly with his laser gun! Note that as the vaults are arranged in a circle, the last vault is adjacent to the first one.

The output is the maximum amount of money that can be emptied without sounding the alarm

Constraints

N<=50, Amount in each vault <=50000

Input Format

The first line contains an integer N which is the number of vaults. The next line has a sequence of positive integers of length N, giving the amount of cash in its vaults in order

Output

The maximum amount of money that can be looted without sounding the alarm.

Explanation

Example 1

Input

9

1000, 2000, 1000, 5000, 9000, 5000, 3000, 4000, 1000

Output

15000

Explanation

The vaults 1, 5, 6 are looted, giving a total loot of (1000+5000+9000)=15000

Example 2

Input

10

1000,2000,3000,5000,9000,7000,6000,4000,7000,5000

Output

26000

Explanation

There are 10 vaults arranged in a circle. The amounts in the vaults are 1000, 2000, … 5000.

One way of getting the maximum is to loot vaults 4, 5, 9 and 10 giving a total of 26000. Hence the output is 26000. Note that no 5 adjacent vaults have more than 2 looted.

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