Problem L
The Bag of Forgotten Coins

Time limit: 2 seconds
Memory limit: 1024 megabytes

Problem Description

In a small, forgotten village nestled deep within the mountains, there was an ancient legend of a hidden treasure. This treasure was said to be guarded by a peculiar, enchanted bag of coins. Many adventurers had tried to claim the treasure, but none had succeeded, for the bag was protected by a powerful magic.

One day, a young but clever villager named Liora decided to seek out the treasure. She had heard the tales of those who failed and knew she would need to rely not just on strength but on her wits to succeed.

After days of searching, Liora found the entrance to a secret cave where the bag was hidden. As she stepped inside, she saw the bag of coins glowing with a mystical light. It seemed ordinary enough, but she knew that there was more to it. A warning carved into the cave wall read:

"The coins within hold great value, yet greed will bring you nothing. Take only what you can without inviting the curse of the consecutive."

Liora pondered the meaning of this cryptic message as she opened the bag. Inside, she found a collection of n coins inscribed with distinct numbers $1, 2, \ldots, n$, each one gleaming with a different hue. However, the warning made her pause. The curse of the consecutive, she realized, meant that she could not take two coins inscribed with consecutive numbers, lest she lose everything she had taken. Here, two numbers are consecutive if their difference is one.

She began to examine the coins. Some had high values, others were more modest, but she couldn't simply take the highest ones if they were next to each other. She had to think strategically. How could she maximize the value of the coins she took without triggering the curse?

As she carefully selected the coins, she found that by skipping some coins and choosing others, she could indeed maximize the total value. The process was delicate, requiring her to constantly assess and reassess her choices.

After what felt like hours, Liora had made her selections. She held her breath and looked at the glowing pile of coins in her hands. The cave remained silent, the curse untriggered. The value of the coins was high—higher than she could have imagined. She had succeeded.

The enchanted bag disappeared as soon as she stepped out of the cave, and with it, the treasure chest appeared before her. Inside was not just gold, but the riches of wisdom and strategy, proving that the greatest treasures are not just won by strength or sheer luck, but by careful thought and patience.

Liora returned to her village a hero, her story becoming a new legend that would be passed down for generations. She had outsmarted the curse of the consecutive, showing that sometimes, to achieve the

greatest reward, you must be willing to leave something behind.

And so, the tale of the Bag of Forgotten Coins became a lesson for all who heard it: in the game of life, not all that glitters should be taken, for it is often the wise and measured choice that brings the greatest value.

Liora just told you that the value of the coin inscribed with k is v_k. Please write a program to compute the maximum total value that can be achieved without triggering the curse.

Input Format

The first line contains a positive integer n indicating the number of coins. The second line contains n space-separated integers $v_1, \ldots, v_n$. For $1 \le k \le n$, the value of the coin inscribed with k is v_k.

Output Format

Print the maximum total value that can be achieved without triggering the curse.

Technical Specification

- $1 \le n \le 10^6$
- $v_k \in [-10^9, 10^9]$ for $1 \le k \le n$

Sample Input 1

```
1
1
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Sample Output 1

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1
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Sample Input 2

```
2
1 2
```

Sample Output 2

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2
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Sample Input 3

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3
4 5 3
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Sample Output 3

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7
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