Memory Limit: 1024 MB
Time Limit: 5 s

Uncle MoneyBags (300 points)

Introduction

There are **bags of coins** in a line on a table. Each bag has a number written on it indicating the number of coins inside. All coins are **equal** in value.

Alice and Bob take turns picking bags. The rule is that they can only pick a bag from either the front or the back of the line. They cannot pick a bag from the middle. Alice picks first. Bob is greedy and always picks the bag with more coins in it.

Assuming that each bag has a unique number of coins, what's the **maximum number of coins** Alice can get ?

Example: Say the bags on the table have numbers 1, 2, 3, and 4. When Alice starts, she can only pick 1 or 4. If she picks 1, then Bob can only pick 2 or 4. Since he's greedy, he'll pick 4. Then Alice is left with 2 or 3. If she picks 3, then the total number of coins she gets is 1 + 3 = 4. However, if Alice initially picks 4, then Bob will pick 3, and then Alice can pick 2. She will then have a total of 4 + 2 = 6. Thus, the most coins that Alice can get is 6, which is the solution.

Input Specifications

Your program will take

- An integer **N** representing the number of bags on the table **(1 <= N <= 10)**
- This will be followed by **N lines** with one integer each, representing the bags.
  Each integer k_i will be a positive value such that **1 <=** k_i **<= 1,000,000**.

Output Specifications

Based on the input, print out a **positive integer** indicating the maximum number of coins Alice can get. You are guaranteed that this value will be between 1 and 1,000,000,000.

Sample Input/Output

Input

```
1
1
```

Output

```
1
```

Explanation

Alice gets the only coin.

Input

```
4
1
2
3
4
```

Output

```
6
```

Explanation

This is the problem explained in the question.