Friendly Sequences

Time limit: *1000 ms*
Memory limit: *256 MB*

Semar and Petruk are best friends and they love playing with integer sequences. Semar has a sequence that contains N integers, represented by $\{B_1, B_2, \ldots, B_N\}$. Semar asks Petruk to count how many integer sequences $\{A_1, A_2, \ldots, A_N\}$ have the following properties:

- $0 \leq A_1 \leq \ldots \leq A_n$
- $A_1 \leq B_1$
- $A_1 + A_2 \leq B_2$
- $A_1 + A_2 + A_3 \leq B_3$
- $\ldots$
- $A_1 + \ldots + A_N \leq B_N$

Your task is to help Petruk find the answer.

Standard input

The first line of the input contains integer N.

The second line of the input contains N integers representing the $\{B_1, B_2, \ldots, B_N\}$ sequence, each integer is separated by one space.

Standard output

Print one integer representing the number of sequences with the given property.

As this number can be very large, output its value modulo $10^9 + 7$.

Constraints and notes

- $1 \leq N \leq 10^5$
- $0 \leq B_i \leq 2\,000$

Input	Output	Explanation
2 1 2	4	There are 4 possible sequences: {0, 0}, {0, 1}, {0, 2}, and {1, 1}.
4 13 51 30 73	39564	