Interstellar Transmissions (`seti`)

After reading about the ambitious *SETI* program, William decided to join the project and build an array of N radios for interstellar transmissions in his garage. However, the array has not received any extraterrestrial message yet, fact that William blamed to the phenomenon of *interference*.

In particular, William noticed that whenever the i-th radio is turned on, V_i of the radios on its left (that is, radios $j = i - V_i \ldots i - 1$) receive disturbed signals and are not usable. Fortunately, no interfering signals are received by radios on the right[1] (that is, with $j > i$). In order to plan his next experiment avoiding interferences, William now needs to select a subset of his radios avoiding interferences, that is, such that if radio i is turned on then all radios between $i - V_i$ and $i - 1$ are turned off.

Figure 1: An array of radio telescopes, pretty much alike the one in William's garage.

Help William plan his next experiment, by counting the number of subsets of radios avoiding interferences *modulo*[2] 1 000 000 007.

> ☞ Among the attachments of this task you may find a template file `seti.*` with a sample incomplete implementation.

Input

The first line contains the only integer N. The second line contains N integers V_i.

Output

You need to write a single line with an integer: the number of valid subsets of radios modulo 1 000 000 007.

[1] This phenomenon is due to the peculiar disposition and frequency arrangement chosen by William. There is a truly marvelous description of this arrangement, which this margin is too narrow to contain.

[2] The modulo operator is `%` in C/C++ and `mod` in Pascal.

Constraints

- $1 \leq N \leq 1\,000\,000$.
- $0 \leq V_i \leq i$ for each $i = 0 \ldots N-1$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

- **Subtask 1** [**5 points**]: Examples.
- **Subtask 2** [**20 points**]: $V_i = 1$ for each $i = 0 \ldots N-1$.
- **Subtask 3** [**30 points**]: $N \leq 10$.
- **Subtask 4** [**25 points**]: $N \leq 1000$.
- **Subtask 5** [**20 points**]: No additional limitations.

Examples

input.txt	output.txt
3 0 0 0	8
6 0 1 2 3 2 1	13

Explanation

In the **first sample case**, there is no interference thus all 8 subsets of the three radios are valid.

In the **second sample case**, the 13 valid subsets are the following: