

Contest Duration: 2018-12-15(Sat) 20:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20181215T2100&p1=248>) ~ 2018-12-15(Sat) 22:20 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20181215T2320&p1=248>) (local time) (140 minutes)

[Back to Home \(/home\)](#)
[🏠 Top \(/contests/agc029\)](#)
[☰ Tasks \(/contests/agc029/tasks\)](#)
[❓ Clarifications \(/contests/agc029/clarifications\)](#)
[☰ Results ▾](#)
[🏆 Standings \(/contests/agc029/standings\)](#)
[🏆 Virtual Standings \(/contests/agc029/standings/virtual\)](#)
[📖 Editorial \(/contests/agc029/editorial\)](#)


## C - Lexicographic constraints

[Editorial \(/contests/agc029/tasks/agc029\\_c/editorial\)](#)


Time Limit: 2 sec / Memory Limit: 1024 MB

Score : 700 points

### Problem Statement

There are  $N$  strings arranged in a row. It is known that, for any two adjacent strings, the string to the left is lexicographically smaller than the string to the right. That is,

$S_1 < S_2 < \dots < S_N$  holds lexicographically, where  $S_i$  is the  $i$ -th string from the left.

At least how many different characters are contained in  $S_1, S_2, \dots, S_N$ , if the length of  $S_i$  is known to be  $A_i$ ?

### Constraints

- $1 \leq N \leq 2 \times 10^5$
- $1 \leq A_i \leq 10^9$
- $A_i$  is an integer.

### Note

The strings do not necessarily consist of English alphabet; there can be arbitrarily many different characters (and the lexicographic order is defined for those characters).

2020-09-11 (Fri)

08:44:36 +08:00

## Input

Input is given from Standard Input in the following format:

```
 $N$   
 $A_1$   $A_2$   $\dots$   $A_N$ 
```

## Output

Print the minimum possible number of different characters contained in the strings.

### Sample Input 1

[Copy](#)

```
3  
3 2 1
```

[Copy](#)

### Sample Output 1

[Copy](#)

```
2
```

[Copy](#)

The number of different characters contained in  $S_1, S_2, \dots, S_N$  would be 3 when, for example,  $S_1 = \text{'abc'}$ ,  $S_2 = \text{'bb'}$  and  $S_3 = \text{'c'}$ .

However, if we choose the strings properly, the number of different characters can be 2.

### Sample Input 2

[Copy](#)

```
5  
2 3 2 1 2
```

[Copy](#)

### Sample Output 2

[Copy](#)

```
2
```

[Copy](#)

#telegram)

url=https%3A%2F%2Fatcoder.jp%2Fcontests%2Fagc029%2Ftasks%2Fagc029\_c%3Flang%3Den&title=C%20-  
2020-09-11 (Fri)  
08:44:36 +08:00

[Rule \(/contests/agc029/rules\)](/contests/agc029/rules) [Glossary \(/contests/agc029/glossary\)](/contests/agc029/glossary)

[Terms of service \(/tos\)](/tos) [Privacy Policy \(/privacy\)](/privacy) [Information Protection Policy \(/personal\)](/personal) [Company \(/company\)](/company)  
[FAQ \(/faq\)](/faq) [Contact \(/contact\)](/contact)

Copyright Since 2012 ©AtCoder Inc. (<http://atcoder.co.jp>) All rights reserved.