C. New Year Ratings Change

One very well-known internet resource site (let's call it X) has come up with a New Year adventure. Specifically, they decided to give ratings to all visitors.

There are n users on the site, for each user we know the rating value he wants to get as a New Year Present. We know that user i wants to get at least a_i rating units as a present.

The X site is administered by very creative and thrifty people. On the one hand, they want to give distinct ratings and on the other hand, the total sum of the ratings in the present must be as small as possible.

Help site X cope with the challenging task of rating distribution. Find the optimal distribution.

Input

The first line contains integer n ($1 \leq n \leq 3 \cdot 10^5$) — the number of users on the site. The next line contains integer sequence $a_1, a_2, ..., a_n$ ($1 \leq a_i \leq 10^9$).

Output

Print a sequence of integers $b_1, b_2, ..., b_n$. Number b_i means that user i gets b_i of rating as a present. The printed sequence must meet the problem conditions.

If there are multiple optimal solutions, print any of them.

Examples

input

```
3
5 1 1
```

output

```
5 1 2
```

input

```
1
1000000000
```

output

```
1000000000
```