

Problem A

Variable Names

Nikolaj has been programming for many years, but never really understood the point of writing readable code. Nikolaj's variable names are always c_1, c_2, c_3 , etc. Sometimes Nikolaj wants to declare a new variable called c_i , but the name c_i may already be taken. When that happens he tries the names c_{2i}, c_{3i} , etc., until he finds a name that is not already taken.

Write a program that given a list of N variable names Nikolaj wants to use, determines the names he ends up choosing using the above strategy.

Input

The first line contains an integer N , the number of variables, where $1 \leq N \leq 2 \cdot 10^5$. Each of the following N lines contains an integer x with $1 \leq x \leq 10^4$. This means that Nikolaj wants to declare a new variable called c_x . Nikolaj declares the variables in input order.

Output

For each of the N integers x , print y such that Nikolaj created the variable c_y .

Explanation of Sample Input

In Sample Input 1, the following will happen:

1. Variable c_1 is declared.
2. Variable c_3 is declared.
3. Nikolaj would like to declare c_1 , but that's taken, so he declares c_2 .
4. Nikolaj would like to declare c_2 , but that's taken, so he declares c_4 .
5. Nikolaj would like to declare c_1 , but that's taken, so he declares c_5 .
6. Nikolaj would like to declare c_5 , but that's taken, so he declares c_{10} .
7. Nikolaj would like to declare c_5 , but that's taken, so he declares c_{15} .

Sample Input 1

```
7
1
3
1
2
1
5
5
```

Sample Output 1

```
1
3
2
4
5
10
15
```

