TLE '15 P3 - Poetry

Time limit: 2.0s **Memory limit:** 128M

d's English teacher is giving him a tough time! He can handle all of the essays and the projects given to him, but he can't do poetry. Unfortunately, his teacher assigned him a massive poetry assignment – and it's worth 10% of his English mark!

d's English teacher wants him to write a *cyclic poem*. Cyclic poems have special properties:

- Cyclic poems are constructed using only space separated *words*.
- They do not have to rhyme.
- They do not have to make sense.
- They do not need to contain English words.
- Words can only consist of uppercase and lowercase characters of the English alphabet.
- Each line of the poem has a *character limit*. The number of characters in a line, including spaces, cannot exceed its limit.
- The character limits of lines are cyclic. For example, if the cycle is $\{10, 20, 30\}$:
  - The 1st line's limit is 10 characters
  - The 2nd line's limit is 20
  - The 3rd line's limit is 30
  - The 4th line's limit is 10
  - The 5th line's limit is 20
  - The 6th line's limit is 30, and so on.
- If a word cannot fit in a line and it does not start at the beginning of that line, it must be moved to the next line.
- If a word cannot fit in a line and it starts at the beginning of that line, it must be split into two words and the second word must be moved to the next line.

d has found some poems on the Internet, but they are not formatted correctly! His teacher is very strict and requires that his cyclic poem has a cycle with a length of N with limits $\{C_1, C_2, \ldots, C_N\}$. Can you help **d** keep his English mark above 90%?

Input Specification

The first line will contain N $(1 \leq N \leq 1\,000)$, the length of the cycle.

N lines of input follow. The i^{th} line will contain C_i $(1 \leq C_i \leq 100\,000)$.

The last line will consist of space-separated words that are to be used in the cyclic poem. The total number of characters, not including spaces, will not exceed 10^6.

Output Specification

The correctly formatted cyclic poem.

Sample Input

```
3
7
2
6
To be or not to be that is the question
```

Sample Output

```
To be
or
not to
be that
is
the
questio
n
```