

Problem 2 – Magic Words

We are given a sequence of n magic words. The words are magic because they are capable to perform two "magic" operations: "reorder" and "print".

Reorder: The reordering operation over n words is performed by sequentially moving the words at positions $0, 1, \dots, n-1$ to positions corresponding to their lengths. More precisely, first the word w_0 from position 0 is moved to position $\text{len}(w_0) \% (n+1)$, then the word w_1 from position 1 is moved to position $\text{len}(w_1) \% (n+1)$, and so on. Finally the word w_{n-1} from position $n-1$ is moved to position $\text{len}(w_{n-1}) \% (n+1)$. Note that positions are numbered from 0 to n and position 0 is just before the leftmost word and position n is just after the rightmost word.

For example, if we have $n = 3$ words {"hi", "academy", "exam"}, they will be reordered 3 times this way:

Position	0	1	2
Word	hi	academy	exam

$0 \rightarrow 2$

Position	0	1	2
Word	academy	hi	exam

$1 \rightarrow 2$

Position	0	1	2
Word	academy	hi	exam

$2 \rightarrow 0$

Position	0	1	2
Word	exam	academy	hi

Print: The printing process is simple. It just first prints the first letter of all words, then the second letter of all words (when it exists), then the third letter of all words (when exists), etc. As a result the printing obtains a sequence of letters from the input words.

Your task is to write a program that reads n words, performs the magic operations "reorder" and "print" over them and outputs the obtained sequence of letters.

Input: The input data should be read from the console. The first line holds a single integer number n . At each of the next n lines there is a single word.

Output: The output data consists of a single text line holding the obtained result.

Constraints

- The number of words n will be in the range $[1...1000]$.
- Each word will have between 0 and 1000 English letters, each in the range $[a...z]$.
- Allowed working time for your program: 0.06 seconds.
- Allowed memory: 32 MB.

Examples

Input	Output	Input	Output	Input	Output	Input	Output
3 hi academy exam	eahxciaamdemy	2 you win	wyionu	1 hi	hi	4 nakov wrote this problem	wnptrarhokoitobsevlem