Zig-Zag Cipher

Input file: standard input
Output file: standard output

Time limit: 1 second Memory limit: 256 megabytes

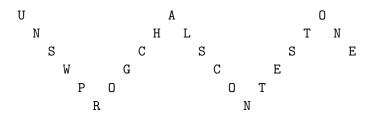
The latest development in cryptography is the zig-zag cipher.

To encrypt a message using the zig-zag cipher, the letters of the message are written on the page in a zig-zag pattern. This is illustrated below for the message CARTOGRAPHY.



The letters are then read one row at a time, from the top row down to the bottom. In the diagram above, the first row spells COP, the second spells ATGAH and the third spells RRY. Finally these are combined to obtain the final encrypted message, which is COPATGAHRRY.

The zig-zag cipher can be extended to use as many rows as you like. For instance, using a zig-zag cipher with six rows, the message UNSWPROGCHALSCONTESTONE is encrypted to become UAONHLTNSCSSEWGCEPOOTRN as seen in the following diagram.



Your task is to write a program that can <u>decrypt</u> messages written in the zig-zag cipher. Your program must read the number of rows used in the <u>cipher</u> as well as an encrypted message, and must output the original (decrypted) message.

Input

The first line of input will consist of a single integer r, the number of rows used in the zig-zag cipher $(2 \le r \le 100)$.

Following this will be the encrypted message. The encrypted message will consist entirely of upper-case letters, with no spaces or punctuation. The message will have at least 1 letter and at most 10 000 letters.

Output

Your output should consist of a single line containing the entire decrypted message.

Examples

standard input	standard output
3 COPATGAHRRY	CARTOGRAPHY
6 UAONHLTNSCSSEWGCEPOOTRN	UNSWPROGCHALSCONTESTONE