**Secret Code**

A simple message encryption can be accomplished by shifting each letter in a message k number of positions later in the alphabet where k is determined by a “one-time pad”. If a letter is shifted past ‘z’, it starts back again at ‘a’ and continues shifting. For example, shifting each letter by k = 2, the word car is transformed into “ect”. While the word “yaz” is shifted to “acb”. The key to ensuring the encryption is secure is to only use each number from the pad once.

**Input Format**

The input will begin with the size of a “one-time pad”, followed by a sequence of numbers for the pad. The remaining input consists of a series of words to be encrypted using the keyword. The input will be terminated by a line containing only -1.

You may assume that the maximum size of the pad is 100 numbers, all numbers in the pad are between 0 and 25, and that all input will be lower case letters.

**Output Format**

For each word encrypted, output a line containing the encrypted word:

**Example:**

**Input 1:**

40

1 5 2 21 3 8 4 25 11 9 6 7 8 9 11 12 3 0 11 14 21 9 0 1 3 12 7 2 11 5 9 20 12 1 19 4 9 8 24

humans make good batteries

gnlr esrf

-1

**Output 1:**

izovqa

qzvn

mvwm

mmwtpvwzb

good

luck