IOI '01 P3 - Twofive

The secret messages between Santa Claus and his little helpers are usually encoded in the 25-language. The 25-alphabet is the same as the Latin alphabet with one exception

- the letter `Z` is absent, i.e. the 25-alphabet contains 25 Latin letters from `A` through `Y` in the same order as the Latin alphabet. Each word in the 25-language consists of exactly 25 different letters. A word can be written in a 5×5 table filling the rows first; for example, the word `ADJPTBEKQUCGLRVFINSWHMOXY` will be written as follows:

A	D	J	P	T
B	E	K	Q	U
C	G	L	R	V
F	I	N	S	W
H	M	O	X	Y

A valid word in the 25-language has its letters in each row as well as in each column written in ascending order. Thus, the word `ADJPTBEKQUCGLRVFINSWHMOXY` is a valid word, in contrast to the word `ADJPTBEGQUCKLRVFINSWHMOXY` (the ascending order is violated in the second column, and in the third column, too).

Santa Claus has a lexicon. His lexicon is the list of all valid 25-language words in ascending order (lexicographically) along with their ordinal numbers starting from 1. For example, in the lexicon `ABCDEFGHIJKLMNOPQRSTUVWXY` is the word number 1 and `ABCDEFGHIJKLMNOPQRSUTVWXY` is the word number 2. In word number 2, `U` and `T` are interchanged from their order in word number 1.

Unfortunately, this lexicon is huge. Write a program that determines the ordinal number of an arbitrary given word, and also the word corresponding to a given ordinal number. There are no more than 2^{31} words in the lexicon.

Input Specification

The input consists of two lines. The first line contains a string with one character: a `W` or an `N`. If the first line contains a `W`, then the second line contains a valid 25-language word, that is, a string with 25 characters. If the first line contains an `N`, then the second line contains the ordinal number of an existing 25-language word.

Output Specification

The output consists of one line. If the second line of the input file contains a 25-language word, then the

line of the output file contains the ordinal number of that word. If the second line of the input file contains a number, then the line of the output file contains the 25-language word with that ordinal number.

Sample Input 1

```
W
ABCDEFGHIJKLMNOPQRSUTVWXY
```

Sample Output 1

```
2
```

Sample Input 2

```
N
2
```

Sample Output 2

```
ABCDEFGHIJKLMNOPQRSUTVWXY
```