# 520 Append

Consider the following encoding scheme used in one famous compresion algorithm. Suppose we will code only sequences of lower case letters. Each such sequence of characters can be encoded to a sequence of pairs $(p_i, r_i)$, where $p_i \geq 0$ is an integer and $r_i$ is either a character (if $p_i = 0$) or an integer greater than zero and less or equal than $p_i$ (if $p_i > 0$).

We describe now the decoding procedure for our encoding scheme. Let $(p_1, r_1)$, $(p_2, r_2)$, ... be a code of a sequence. We get the sequence as follows: we take successively individual pairs of the code. If $p_i = 0$ then $r_i$ is a character and we simply add $r_i$ to the end of already decoded sequence. If $p_i > 0$ then $r_i$ is an integer, $0 < r_i \leq p_i$, and we add to already decoded sequence $r_i$ letters from this sequence starting at the position $p_i$ places before the end.

For example, consider the sequence of pairs $(0a)$, $(1, 1)$, $(0, b)$, $(3, 3)$, $(3, 3)$, $(3, 2)$, $(0, c)$. Decoding $(0, a)$ we get $a$. Decoding $(1, 1)$ we get $aa$. $(0, b)$ adds $b$ getting $aab$. $(3, 3)$ will add $aab$, so now we have $aabaab$. Next pair $(3, 3)$ will again add $aab$ so we have $aabaabaab$. $(3, 2)$ will add $aa$, so our sequence is $aabaabaabaa$ and $(0, c)$ adds $c$. So the decoded sequence is $aabaabaabaac$. Note that in general for a given $w$ it can exist more such sequences of pairs.

Let $u$, $v$ be some sequences. By $uv$ we will understand the sequence created by appending of the sequence $v$ to the end of sequence $u$. Let $C_w$ be a sequence of pairs which encodes a sequence of lowercase letters $w$. Suppose we have given a sequence of pairs $C_w$. The question is how many possibilities does exist for expressing the sequence $C_w$ in the form $C_u C_v$ where $u$, $v$ are sequences satisfying the equation $w = uv$ and neither $u$ nor $v$ is empty. Write a program that will answer this question.

## Input

The input file consists of blocks of lines. Each block describes one sequence of pairs $C_w$ to some $w$ in such a way that the $i$-th line of the block contains either two integers $p_i$, $r_i$, $(r_i \leq p_i < 1000)$ separated by one space or 0 followed by one space and one character. Each block ends with one empty line.

## Output

The output file contains the lines corresponding to the blocks in the input file. Each line contains the number of possibilities of representation of the sequence $C_w$ in the form $C_u C_v$ where $u$, $v$ are sequences satisfying the equation $w = uv$ and neither $u$ nor $v$ is empty.

## Sample Input

```
0 a
1 1
0 b
3 3
3 3
3 2
0 c

```

## Sample Output

```
1
```