E - Forbidden Prefix

Editorial (/contests/abc403/tasks/abc403_e/editorial)

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Time Limit: 2 sec / Memory Limit: 1024 MB

Score : 500 points

Problem Statement

There are two multisets of strings, X and Y, both initially empty.

You are given Q queries to process in order. In the i-th query, you receive an integer T_i and a string S_i. If $T_i = 1$, insert S_i into X; if $T_i = 2$, insert S_i into Y.

After processing each query, print this value:

- the number of strings in Y that have no element of X as a prefix.

Constraints

- Q is an integer between 1 and 2×10^5, inclusive.
- $T_i \in \{1, 2\}$
- Each S_i is a string of length between 1 and 5×10^5, inclusive, consisting of lowercase English letters.
- $\displaystyle\sum_{i=1}^{Q} |S_i| \leq 5 \times 10^5$

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Input

The input is given from Standard Input in the following format:

$$
\begin{aligned}
&Q \\
&T_1 \ \ S_1 \\
&T_2 \ \ S_2 \\
&\vdots \\
&T_Q \ \ S_Q
\end{aligned}
$$

Output

Print Q lines. The i-th line $(1 \leq i \leq Q)$ should contain the count after processing the i-th query.

Sample Input 1 Copy

```
4
1 at
2 watcoder
2 atcoder
1 wa
```

Sample Output 1 Copy

```
0
1
1
0
```

The counts after processing the queries for $i = 1, 2, 3, 4$ are as follows.

- $i = 1$: Y is empty, so the count is 0.
- $i = 2$: `watcoder` has no element of X as a prefix, so the count is 1.
- $i = 3$: `watcoder` has no element of X as a prefix, while `atcoder` has `at` as a prefix, so the count is 1.
- $i = 4$: `watcoder` has `wa` as a prefix, and `atcoder` has `at` as a prefix, so the count is 0.

Sample Input 2 Copy

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```
10
1 w
1 avko
2 atcoder
1 bzginn
2 beginner
1 atco
2 contest
1 ntxcdg
1 atc
1 contest
```

Sample Output 2 Copy

Copy

```
0
0
1
1
2
1
2
2
2
1
```

Language

Python (CPython 3.11.4)

Source Code

Open File | Customize | Toggle Editor | Auto Height

```
1
```

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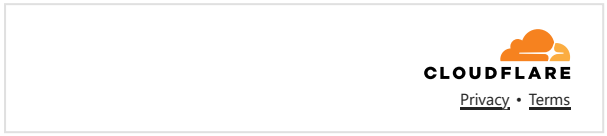
* at most 512 KiB

* Your source code will be saved as Main.*extension*.



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'#telegram)

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