

Contest Duration: 2025-04-27(Sun) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250427T2100&p1=248>) - 2025-04-27(Sun) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250427T2240&p1=248>) (local time) (100 minutes)

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E - Forbidden Prefix

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Time Limit: 2 sec / Memory Limit: 1024 MiB

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.
- $\sum_{i=1}^Q |S_i| \leq 5 \times 10^5$

Input

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

2026-01-02 (Fri)
05:23:00 +11:00

```
 $Q$ 
 $T_1 \ S_1$ 
 $T_2 \ S_2$ 
 $\vdots$ 
 $T_Q \ S_Q$ 
```

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
```

[Copy](#)

Sample Output 1

[Copy](#)

```
0
1
1
0
```

[Copy](#)

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

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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](#)

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

[Copy](#)

'#telegram)

?url=https%3A%2F%2Fatcoder.jp%2Fcontests%2Fabc403%2Ftasks%2Fabc403_e%3Flang%3Den&title=E%20-

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