

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  $2 \times 10^5$ , inclusive.
- $T_i \in \{1, 2\}$
- Each  $S_i$  is a string of length between 1 and  $5 \times 10^5$ , 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:

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

## 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

[Copy](#)[Copy](#)

```
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
```

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[/#telegram](#))

[url=https%3A%2F%2Fatcoder.jp%2Fcontests%2Fab403%2Ftasks%2Fab403\\_e%3Flang%3Den&title=E%20-](https://atcoder.jp/contests/abc403/tasks/abc403_e%3Flang%3Den&title=E%20-)

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