
Counting suffixes

P88868_en

Vintè Concurs de Programació de la UPC - Semifinal (2022-06-15)

Please implement a data structure D to efficiently support four operations:

- **I** s : Inserts the string s into D . No changes are made if s is already in D .
- **E** s : Erases the string s from D . No changes are made if s is not in D .
- **C** s : Counts the number of strings in D that end with the suffix s .
- **R**: Resets D , that is, removes all strings from D .

Input

Input consists of several operations over an initially empty D . Assume that each s is made up of between 1 and 100 lowercase letters. At no moment the sum of the sizes of the strings stored in D will be larger than 10^6 .

Output

Print the result of each **C** s operation, and three dashes for each **R** operation.

Sample input

```
E a
I abba
C a
I cba
C cba
C abba
C a
C ba
I abba
C ba
E cba
C cba
C a
E ba
C ba
R
C ba
I eggs
I zzeqgs
C eggs
E eggs
C eggs
```

Sample output

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

Problem information

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