Stringonomics

locked

by abizerl123

Problem | Submissions | Leaderboard | Discussions | Editorial

You are given a string S consisting of lowercase English letters.

You are given another string P, that may or may not exist as a substring in S.

Given Q queries, where each query is of the form X and C, where X is a non-negative integer and C a character. For every query, you are supposed to change the index X (Assume 0 based indexing) of the string S to the character C.

You are supposed to find the minimum number of queries, when sequentially executed from the start, after which the string P no longer exists as a substring in S.

If the string P exists in S even after executing all the queries, print -1.

It is guaranteed that each index is only changed once, and once the string P ceases to exist in S, it would not reappear again later (If P never existed in S, it wouldn't reappear later on).

Input Format

First line contains T number of testcases. For each testcase:

- The first line contains the string S.
- Next line contains the string P.
- Next line contains number of queries Q.
- Following Q lines contains X and C, space seperated.

Constraints

- $1 \leq T \leq 50$
- $1 \leq |S| \leq 2 \cdot 10^5$
- $1 \leq |P| \leq |S|$
- $1 \leq Q \leq |S|$
- $0 \leq X < |S|$
- C is a lowercase English letter
- Sum of $|S|$ and $|P|$ over all T $\leq 7 \cdot 10^5$
- Sum of Q over all T $\leq 7 \cdot 10^5$

Output Format

For each testcase T, output a single integer denoting the minimum number of queries after which the string P ceases to exist in string S.

Sample Input 0

```
2
abcde
bc
3
0 p
1 q
2 w
abcde
cde
2
0 t
1 z
```

Sample Output 0

```
2
-1
```

Explanation 0

First test case

- Initial - *a[bc]de*
- First update - *p[bc]de*
- Second update - *pqcde*
  So after second update the string `P` is not in string `S`, so the answer is *2*.

Second test case

- Initial - *ab[cde]*
- First update - *tb[cde]*
- Second update - *tz[cde]*
  Even, after all the updates the string `P` is in the string `S`, so the answer is *-1*.

Submissions: 528
Max Score: 60
Difficulty: Hard

Rate This Challenge:

More

Current Buffer (saved locally, editable) Python 3

```
#!/bin/python3

import math
import os
import random
import re
import sys

```