



HOME TOP CATALOG CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

# E. Changing the String

time limit per test: 2 seconds memory limit per test: 512 megabytes

Given a string s that consists only of the first three letters of the Latin alphabet, meaning each character of the string is either a, b, or c.

Also given are q operations that need to be performed on the string. In each operation, two letters x and y from the set of the first three letters of the Latin alphabet are provided, and for each operation, one of the following two actions must be taken:

- change any (one) occurrence of the letter x in the string s to the letter y (if at least one
  occurrence of the letter x exists);
- do nothing.

The goal is to perform all operations in the given order in such a way that the string s becomes lexicographically minimal.

Recall that a string a is lexicographically less than a string b if and only if one of the following conditions holds:

- a is a prefix of b, but  $a \neq b$ ;
- at the first position where a and b differ, the string a has a letter that comes earlier in the
  alphabet than the corresponding letter in b.

## Input

Each test consists of several test cases. The first line contains a single integer t (  $1 \le t \le 10^3$ ) — the number of test cases. The description of the test cases follows.

In the first line of each test case, there are two integers n and q ( $1 \le n, q \le 2 \cdot 10^5$ ) — the length of the string s and the number of operations.

In the second line of each test case, the string s is given — a string of exactly n characters, each of which is a, b, or c.

The next q lines of each test case contain the description of the operations. Each line contains two characters x and y, each of which is a, b, or c.

Additional constraints on the input:

- the sum of n across all test cases does not exceed  $2\cdot 10^5$ ;
- the sum of q across all test cases does not exceed  $2\cdot 10^5$ .

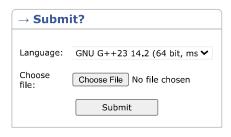
### Output

For each test case, output the lexicographically minimal string that can be obtained from s using the given operations.

### Example







→ Last submissions		
Submission	Time	Verdict
322697946	Jun/03/2025 18:07	Accepted
322696017	Jun/03/2025 18:05	Wrong answer on test 2

```
са
30 20
abcaababcbbcabcbbcabcbabbbbabc
b c
b c
са
b c
b c
b a
b c
b c
b a
b a
b a
са
b c
са
b c
са
са
b c
c b
output
                                                                                  Сору
ab
aaaaabbbbb
aaaaaaaaaaaabbbabcbabbbbabc
```

#### Note

In the first test case, both operations need to be applied to the first letter:

- 1. after the first operation, s="bb"
- 2. after the second operation,  $s=\mbox{\tt "ab"}$

In the second test case, the string could change as follows:

- 1. "bbbbabbbb" (changed the 5-th letter)
- 2. "cbbbabbbb" (changed the 1-st letter)
- 3. "cbbbabbbbb" (did nothing)
- 4. "cbbaabbbb" (changed the 4-th letter)
- 5. "abbaabbbb" (changed the 1-st letter)
- 6. "abcaabbbbb" (changed the 3-rd letter)
- 7. "abcaabbbbb" (did nothing)
- 8. "aacaabbbbb" (changed the 2-nd letter)
- 9. "aacaabbbbb" (did nothing)
- 10. "aaaaabbbbb" (changed the 3-rd letter)

Codeforces (c) Copyright 2010-2025 Mike Mirzayanov
The only programming contests Web 2.0 platform
Server time: Jun/03/2025 22:09:18<sup>UTC+7</sup> (k1).
Desktop version, switch to mobile version.
Privacy Policy | Terms and Conditions

Supported by

