

13692 - Aftermath's Ideology

Description

Given a string s that consists of only lowercase Latin characters, there are Q operations to apply on this string.

There are 3 types of operations, with the following 3 forms:

- 1 $A\ B$
- 2 $id\ C$
- 3 $id_a\ id_b$

For operation of type 1, you have to turn every A in the given string to B .

For operation of type 2, you have to set the id th character to C .

For operation of type 3, you have to swap the id_a th character and the id_b th character.

After the Q operations, you should print the resulting string in one line(remember to print a new line character).

Input

The first line contains a string s , which consists of only lowercase Latin characters.

The second line contains an integer Q .

The next Q lines, each contains an operation

Constraints

- $1 \leq |s| \leq 10^6$
- $1 \leq Q \leq 10^5$
- $0 \leq id, id_a, id_b \leq |s| - 1$
- $A, B, C \in \{a \dots z\}$

Output

Print your answer in one line and end with a newline character.

Sample Input

Download (data:text/plain;charset=utf-8,%23%20Sample%20Input%201%0D%0A%0D%0Acewodaxnjv%0D%0A10%0D%0A3%201%208%0D%0A3%204%205%0D%

```
# Sample Input 1
cewodaxnjv
10
3 1 8
3 4 5
2 1 i
1 c t
1 b o
1 y x
1 d w
2 7 f
2 7 o
1 o d

# Sample Input 2
mrxsjdtkwivtwemvtwwk
5
3 5 13
1 r o
1 d o
3 16 15
2 13 f

# Sample Input 3
upqyosptnpbbezwxaufzms
5
1 j d
3 14 3
1 t o
2 9 m
2 16 k

# Sample Input 4
klerprafhnravjgzhrqlqe
10
3 15 19
1 h v
1 r c
3 7 13
2 11 u
2 14 y
2 21 q
2 21 p
1 x e
1 q i
```

Sample Output

[Download](#) (data:text/plain;charset=utf-8,%23%20Sample%20Output%201%0D%0A%0D%0Atiwdawxdev%0D%0A%0D%0A%23%20Sample%20Output%202%0D%0A)

```
# Sample Output 1

tiwdawxdev

# Sample Output 2

moxsjetkwivtwfmtvwwk

# Sample Output 3

upqwosponmbbezzykufzms

# Sample Output 4

klepcajvncuvfylvcgzi
```

Discuss