1008 Keyboard Warrior

Time Limit: 4000/2000 MS (Java/Others)

Memory Limit: 524288/524288 K (Java/Others)

Problem Description

Some contestants said on the Internet that they love Multi-University Training, did the rest of them have no keyboards?

You must be the one whose keyboard is badly broken. When you press a key, it triggers a random number of times.

Given a character ch and an integer k, it means you press an alphanumeric key ch only once, but it triggers k times, and k character ch will be added to the end of the buffer.

Given a character - and an integer k, it means you press the backspace key, it triggers k times, delete k characters from the end (If the number of characters is less than k, the buffer will be cleared).

Given the operations in chronological order, could you input your target text? Which means whether there is a time, your target text is a substring of your buffer characters? Answer 'yes' or 'no'. (In formal language theory and computer science, a substring is a contiguous sequence of characters within a string.)

Input

First line has one integer T, indicating there are T test cases. In each case:

First line has two integers n, m, n indicates the length of your target text, m indicates the number of times you press the key.

Second line has a string of length n, which contains only lowercase letters.

For next m lines, each line has a character ch and an integer k, their meanings are described above.

$1 \leq n, m \leq 2 \times 10^5, 0 \leq k \leq 10^9, \sum n + m \leq 10^6$

Output

In each case, print 'yes' or 'no', without quote.

Sample Input

```
3
6 6
iloveu
i 1
l 1
o 1
v 1
e 1
u 0
6 10
imfive
u 10
- 20
i 1
m 1
f 1
i 1
v 5
- 4
e 2
- 2
4 4
abab
a 2
b 2
- 3
b 1
```

Sample Output

```
no
yes
no
```