Problem D - Apple Juicing Device

Lucca realized that the machine he used didn't juice the apples, it just crushed them. Lucca's spirits were also crushed, until David lent him his apple juicing device.

David's apple juicing device was a little finicky. You gave it a single instruction with some esoteric symbols, but the device wouldn't even start up unless the parentheses in the instruction was balanced.

Lucca is making some changes to the the instructions to David's device, and wants your help to know whether the parentheses are balanced after each change he makes.

Input

The first line contains a single integer T denoting the number of test cases.

In each test case, begins with a single integer n ($1 \leq n \leq 100,000$) denoting the number of changes Lucca has made.

The next line contains a single string S ($1 \leq |S| \leq 100,000$) denoting the original instruction that was on the the device. The instruction consists solely of the characters `()*<>+-&`.

After this n lines each containing a single integer k ($1 \leq k \leq |S|$) followed by one of the valid characters c ($c \in \{$ `(`, `)`, `*`, `<`, `+`, `-`, `&` $\}$) indicating that Lucca has changed the kth letter in the string to c. Positions in the string are 1 indexed.

Output

Output after each change, on a single line, `Yes` if the parentheses are balanced, and `No` if they are not.

A string is considered to contain balanced parentheses if ever `(` can be matched with a `)` such that no `)` is unmatched and the substring between any `(` and its matching `)` is balanced. In particular, the string with no parentheses is considered balanced.

Sample Input

```
1
5
(((*>+)()())+
1 )
1 (
1 *
7 (
8 )
```

Sample Output

```
No
No
Yes
No
Yes
```