

Contest Duration: 2025-10-18(Sat) 23:30 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20251018T2130&p1=248>) - 2025-10-19(Sun) 01:10 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20251018T2310&p1=248>) (local time) (100 minutes)

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C - Brackets Stack Query

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Time Limit: 3 sec / Memory Limit: 1024 MiB

Score : 300 points

Problem Statement

A string T is called a good bracket sequence if and only if it satisfies the following condition:

- T can be made into an empty string by repeating the following operation zero or more times:
 - Choose $($ contained in T as a (contiguous) substring and remove it.

For example, $()$, $((())()$, and the empty string are good bracket sequences, but $)()()$ and $))()$ are not good bracket sequences.

There is a string S . Initially, S is an empty string.

Process Q queries in the order they are given. After each query, determine whether S is a good bracket sequence.

There are two types of queries:

- 1 c : A character c is given. c is either $($ or $)$. Append c to the end of S .
- 2: Remove the last character of S . It is guaranteed that S is not an empty string at this time.

Constraints

- $1 \leq Q \leq 8 \times 10^5$
- c in queries of the first type is $($ or $)$.

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- It is guaranteed that S is not empty when a query of the second type is given.
 - Q is an integer.
-

Input

The input is given from Standard Input in the following format, where query_i denotes the i -th query.

```
Q
query1
query2
:
queryQ
```

Each query is given in one of the following two formats:

```
1 c
```

```
2
```

Output

Output Q lines. The i -th line should contain Yes if the string S immediately after processing the i -th query is a good bracket sequence, and No otherwise.

Sample Input 1

Copy

```
8
1 (
2
1 (
1 )
2
1 (
1 )
1 )
```

Copy

Sample Output 1

Copy

No
Yes
No
Yes
No
No
No
Yes

S immediately after processing the 1st query is (, which is not a good bracket sequence.

S immediately after processing the 2nd query is an empty string, which is a good bracket sequence.

S immediately after processing the 3rd query is (, which is not a good bracket sequence.

S immediately after processing the 4th query is (), which is a good bracket sequence.

S immediately after processing the 5th query is (, which is not a good bracket sequence.

S immediately after processing the 6th query is ((, which is not a good bracket sequence.

S immediately after processing the 7th query is ((), which is not a good bracket sequence.

S immediately after processing the 8th query is ((()), which is a good bracket sequence.

'#telegram)

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