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Sequence full of colors ★

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You are given a sequence of N balls in 4 colors: red, green, yellow and blue. The sequence is full of colors if and only if all of the following conditions are true:

- There are as many red balls as green balls.
- There are as many yellow balls as blue balls.
- Difference between the number of red balls and green balls in every prefix of the sequence is at most 1.
- Difference between the number of yellow balls and blue balls in every prefix of the sequence is at most 1.

Your task is to write a program, which for a given sequence prints `True` if it is full of colors, otherwise it prints `False`.

Input

In the first line there is one number T denoting the number of tests cases.

T lines follow. In each of them there is a sequence of letters $\{R, G, Y, B\}$ denoting the input sequence (R - red, G - green, Y - yellow, B - blue).

Output

For each test case, print `True` if this is a sequence full of colors, otherwise print `False`.

Constraints

$1 \leq T \leq 10$

Sequence will only consists of letters $\{R, G, Y, B\}$.

Sum of length of all sequences will not exceed 10^6.

Notes

A prefix of a string $T = t_1 \ldots t_n$ is a string $\widehat{T} = t_1 \ldots t_m$, where $0 \leq m \leq n$.

Sample Input

```
4
RGGR
RYBG
RYRB
YGYGRBRB
```

Sample Output

```
True
True
False
False
```

Explanation

In the first two test cases, all four conditions are satisfied.

In the third test case, condition #1 fails as there are more red balls than green balls and condition #3 also fails for prefix "RYR" as the difference between the number of red and green balls is more than 1. In the fourth test, for a prefix "YGYG" condition 4th fails.

Tested by Abhiranjan

Author pkacprzak

Difficulty Easy

Max Score 10

Submitted By 1945

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