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B. Above the Clouds

time limit per test: 2 seconds memory limit per test: 256 megabytes

You are given a string s of length n, consisting of lowercase letters of the Latin alphabet. Determine whether there exist three **non-empty** strings a, b, and c such that:

- a+b+c=s, meaning the concatenation* of strings a,b, and c equals s.
- The string b is a substring \dagger of the string a+c, which is the concatenation of strings a and c.

Input

Each test consists of multiple test cases. The first line contains a single integer t ($1 < t < 10^4$) — the number of test cases. The description of the test cases follows.

The first line of each test case contains a single integer n ($3 \le n \le 10^5$) — the length of the string s.

The second line of each test case contains the string s of length n, consisting of lowercase letters of the Latin alphabet.

It is guaranteed that the sum of n across all test cases does not exceed $2 \cdot 10^5$.

Output

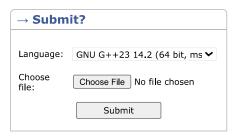
For each test case, output "Yes" if there exist three non-empty strings a,b, and c that satisfy the conditions, and "No" otherwise.

You may output the answer in any case (upper or lower). For example, the strings "yEs", "yes", "Yes", and "YES" will be recognized as positive answers.

Example

input	Сору
12	
3	
aaa	
3	
aba	
3	
aab	
4	
abca	
4	
abba	
4	
aabb	
5	
abaca 5	
abcda	
5	
abcba	
6	
abcbbf	
6	
abcdaa	





→ Last submissions		
Submission	Time	Verdict
324801135	Jun/17/2025 17:44	Accepted

^{*}Concatenation of strings a and b is defined as the string $a+b=a_1a_2\dots a_pb_1b_2\dots b_q$, where p and q are the lengths of strings a and b, respectively. For example, the concatenation of the strings "code" and "forces" is "codeforces".

 $^{^{\}dagger}$ A string a is a substring of a string b if a can be obtained from b by the deletion of several (possibly, zero or all) characters from the beginning and several (possibly, zero or all) characters from the end.

3 abb	
output	Сору
Yes	
No	
Yes	
No	
Yes	
Yes	
Yes	
No	
Yes	
Yes	
Yes	
Yes	

Note

In the second test case, there exist unique non-empty strings a,b, and c such that a+b+c=s. These are the strings a= "a", b= "b", and c= "a". The concatenation of strings a and c= equals a+c= "aa". The string b is a substring of this string.

In the sixth test case, one can choose a= "a", b= "ab", and c= "b". The concatenation of strings a and c= equals a+c= "ab". The string b is a substring of this string.

In the seventh test case, one can choose a= "ab", b= "a", and c= "ca". The concatenation of strings a and c= "quals a+c= "abca". The string b is a substring of this string.

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