CODEFORCES β
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PROBLEMS   SUBMIT CODE   MY SUBMISSIONS   STATUS   HACKS   ROOM   STANDINGS   CUSTOM INVOCATION

C. No to Palindromes!

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Paul *hates* palindromes. He assumes that string s is *tolerable* if each its character is one of the first p letters of the English alphabet and s doesn't contain any palindrome contiguous substring of length 2 or more.

Paul has found a tolerable string s of length n. Help him find the lexicographically next tolerable string of the same length or else state that such string does not exist.

Input

The first line contains two space-separated integers: n and p ($1 \le n \le 1000$; $1 \le p \le 26$). The second line contains string s, consisting of n small English letters. It is guaranteed that the string is tolerable (according to the above definition).

Output

If the lexicographically next tolerable string of the same length exists, print it. Otherwise, print "NO" (without the quotes).

Examples

input
3 3 cba

output
NO

input
3 4 cba

output
cbd

input
4 4 abcd

output
abda

Note

String s is *lexicographically larger* (or simply *larger*) than string t with the same length, if there is number i, such that $s_1 = t_1, ..., s_i = t_i, s_{i+1} > t_{i+1}$.

The lexicographically next tolerable string is the lexicographically minimum tolerable string which is larger than the given one.

A palindrome is a string that reads the same forward or reversed.

Codeforces Round #265 (Div. 2)

Finished

Practice

⭐

→ **Virtual participation**

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest]

→ **Practice**

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ **Submit?**

Language: GNU G++11 5.1.0   ▼

Choose file: [Choose File] No file chosen

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

[Submit]

→ **Problem tags**

brute force

No tag edit access

→ **Contest materials**

- Announcement   ✕
- Tutorial   ✕