

F. Unstable String Sort

time limit per test: 2 seconds
 memory limit per test: 256 megabytes
 input: standard input
 output: standard output

Authors have come up with the string s consisting of n lowercase Latin letters.

You are given two permutations of its indices (not necessary equal) p and q (both of length n). Recall that the permutation is the array of length n which contains each integer from 1 to n exactly once.

For all i from 1 to $n - 1$ the following properties hold: $s[p_i] \leq s[p_{i+1}]$ and $s[q_i] \leq s[q_{i+1}]$. It means that if you will write down all characters of s in order of permutation indices, the resulting string will be sorted in the non-decreasing order.

Your task is to restore **any** such string s of length n consisting of **at least k distinct lowercase Latin letters** which suits the given permutations.

If there are multiple answers, you can print any of them.

Input

The first line of the input contains two integers n and k ($1 \leq n \leq 2 \cdot 10^5$, $1 \leq k \leq 26$) — the length of the string and the number of distinct characters required.

The second line of the input contains n integers p_1, p_2, \dots, p_n ($1 \leq p_i \leq n$, all p_i are distinct integers from 1 to n) — the permutation p .

The third line of the input contains n integers q_1, q_2, \dots, q_n ($1 \leq q_i \leq n$, all q_i are distinct integers from 1 to n) — the permutation q .

Output

If it is impossible to find the suitable string, print "NO" on the first line.

Otherwise print "YES" on the first line and string s on the second line. It should consist of n lowercase Latin letters, contain at least k distinct characters and suit the given permutations.

If there are multiple answers, you can print any of them.

Example

input	Copy
3 2 1 2 3 1 3 2	
output	Copy
YES abb	

Codeforces Round #582 (Div. 3)

[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 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.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

[Clone Contest](#)

→ Submit?

Language: GNU G++11 5.1.0





Choose file: [选择文件](#) 未选择任何文件

[Submit](#)

→ Problem tags

data structures dfs and similar dsu graphs
 greedy implementation strings *2400
 No tag edit access

→ Contest materials

- Announcement #1 (ru) 
- Announcement #2 (en) 
- Tutorial #1 (en) 
- Tutorial #2 (ru) 

[Codeforces](#) (c) Copyright 2010-2019 Mike Mirzayanov
The only programming contests Web 2.0 platform
Server time: Sep/12/2019 10:15:32^{UTC+8} (e1).
Desktop version, switch to [mobile version](#).
[Privacy Policy](#)

Supported by



ITMO UNIVERSITY