michelle's Chores

michelle is home for holidays,and his mother wants him to do some household work.But there are some constraints to his chores. (i.e Some tasks have to be completed before certain other tasks). Michelle’s mother has come up with a chore plan for michelle to complete his chores. Your task is to check whether the chore plan propsed by Michelle’s mom is executable (i.e if the plan satisfies all the contraints).

Input Format

The first line of the input are two space-separated integers [K , L]. K is the number of chores and L is the number of constraints pertaining to the chores.

The following L lines will contain two space-separated positive integers [M , N] each. The constraint is that chore M must be completed before chore N.

The final line contains a sequence of K space-separated integers. It represents the order of chores proposed by Michelle’s mom.

Constraints

1<=K<=1000

0<=L<=1000000

1<=M<=K

1<=N<=K

Output Format

Your program should output to the standard output stream a single line containing the word: YES(if the proposed chore plan satisfies ALL the provided constraints), or the word: NO(if the proposed chore plan violates even a single constraint)

Note: There is a newline character at the end of the last line of the input.

Sample Input 0

520 8

111 115

111 110

210 111

210 110

210 223

223 203

223 450

450 520

111 115 110 210 223 203 450 520

Sample Output 0

NO