Challenge NPC III

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

Prof. Chen is an expert in solving graph coloring problems. Now, he presents you with a directed graph with colors and claims that each *simple path*[†] of length $\leq k$ in the graph contains distinct colors.

Please check whether Prof. Chen's proclamation is correct.

†: A *simple path* is a sequence of distinct vertices $u_1, u_2, \ldots, u_L$ such that there exists an edge from u_i to u_{i+1} for each $i \in [1, L-1]$. The length of this simple path is L.

Input

There are multiple test cases. The first line contains an integer T $(1 \leq T \leq 10^5)$, denoting the number of test cases. For each test case:

The first line contains two integers n, m, k $(1 \leq n, k \leq 10^5, 0 \leq m \leq 10^5)$, denoting the number of vertices, the number of edges in the graph, and Prof. Chen's parameter k.

The second line contains n integers c_i $(1 \leq c_i \leq 50)$, denoting the color of each vertex.

Each of the following m lines contains two integers u_j, v_j $(1 \leq u_j, v_j \leq n)$, denoting a directional edge in the graph.

It is guaranteed that neither the sum of n nor the sum of m exceeds 10^5.

Output

For each test case, if Prof. Chen's proclamation is correct, output "`YES`" in a line; otherwise, output "`NO`" in a line.

Example

standard input	standard output
3 3 2 2 1 2 1 1 2 2 3 3 3 2 1 2 1 1 2 2 3 1 3 3 3 50 1 1 2 1 2 2 3 1 3	YES NO NO