Balance

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	1024 megabytes

Little Cyan Fish is honing his skills in balancing, under the guidance of Qingyu Xiao. Now, Qingyu Xiao prepared a connected undirected graph $G = (V, E)$ with n vertices, labeled from 1 to n, and m edges, denoted by (u_i, v_i) $(1 \leq i \leq m)$. Each vertex i was labeled by a number a_i. The graph **may contain multiple edges between the same pair of vertices**, but there will be no self-loops.

The task for Little Cyan Fish is to achieve a state of balance in the graph. Specifically, his goal is to make

$$\sum_{(u,v)\in E} |a_u - a_v| \leq \max_{1\leq i\leq n}\{a_i\} - \min_{1\leq i\leq n}\{a_i\}$$

. To do this, he can swap the labels between any pairs of vertices any number of times.

Your task is to help Little Cyan Fish determine if it is possible to meet the goal. Furthermore, if it is possible, you need to provide a possible solution.

Input

There are multiple test cases in a single test file. The first line of the input contains a single integer T $(1 \leq T \leq 10^5)$, indicating the number of test cases.

For each test case, the first line contains two integers n and m $(2 \leq n \leq 10^5,\ n - 1 \leq m \leq 2 \times 10^5)$.

Each of the next m lines contains two integers u and v $(1 \leq u, v \leq n, u \neq v)$ indicating an edge.

The next line contains n integers $a_1, \ldots, a_n$ $(1 \leq a_i \leq n)$ indicating the sequence a.

The graph **may contain multiple edges between the same pair of vertices**. It does not contain any self-loop.

It is guaranteed that the sum of n over all test cases is no more than 5×10^5 and that the sum of m over all test cases is no more than 10^6.

Output

For each test case, output "Yes" in the first line if there is a possible way to rearrange a in the first line, or "No" otherwise. If it is possible, output a possible solution $a_1, a_2, \ldots, a_n$ in the next line.

Example

standard input	standard output
5 5 4 1 2 2 3 3 4 4 5 1 2 3 4 5 5 4 1 2 1 3 1 4 1 5 1 2 3 4 5 5 4 1 2 1 3 1 4 1 5 1 2 2 2 3 5 6 1 2 1 2 2 3 3 4 4 5 3 5 1 2 1 2 1 2 2 1 2 1 2 1 2	Yes 5 4 3 2 1 No Yes 2 2 2 3 1 Yes 2 2 1 1 1 No