L. Spicy Restaurant

time limit per test: 2.0 s
memory limit per test: 256 megabytes
input: standard input
output: standard output

There are n hotpot restaurants numbered from 1 to n in Chengdu and the i-th restaurant serves hotpots of a certain spicy value w_i. A higher spicy value indicates a hotter taste, while a lower spicy value is more gentle (still need to be very careful, though).

We can consider these n restaurants as nodes on an undirected graph with m edges. Now we have q tourists who want to give the hotpots a try. Given the current positions of the tourists and the maximum spicy value they can bear, your task is to calculate the shortest distance between a tourist and the closest restaurant he can accept.

In this problem we define the distance of a path as the number of  n the path.

Input

There is only one test case in each test file.

The first line contains three integers n, m and q ($1 \leq n, m \leq 10^5, 1 \leq q \leq 5 \times 10^5$) indicating the number of restaurants, the number of edges and the number of tourists.

The second line contains n integers $w_1, w_2, \cdots, w_n$ ($1 \leq w_i \leq 100$) where w_i indicates the spicy value of the i-th restaurant.

For the following m lines, the i-th line contains two integers u_i and v_i ($1 \leq u_i, v_i \leq n$, $u_i \neq v_i$) indicating an edge connecting restaurant u_i and v_i.

For the following q lines, the i-th line contains two integers p_i and a_i ($1 \leq p_i \leq n$, $1 \leq a_i \leq 100$) indicating that the i-th tourist is currently at restaurant p_i and that the maximum spicy value he can accept is a_i.

Output

Output q lines where the i-th line contains one integer indicating the shortest distance between the i-th tourist and the closest restaurant he can accept. If there is no such restaurant, output '-1' instead.

Example

input Copy

```
4 4 5
5 4 2 3
1 2
2 3
3 4
4 1
1 1
1 2
1 3
1 4
1 5
```

output Copy

```
-1
2
1
1
0
```

The 2021 Sichuan Provincial Collegiate Programming Contest
Finished
Practice

→ About Contest

This contest is prepared by SUA Problem Setter Team (https://sua.ac/). The competition is hosted and authorized by Southwest Minzu University.

→ 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

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++11 5.1.0

Choose file: 浏览... 未选择文件。

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