

Problem CCU13b11–12

Treasure Hunting

Time Limit: *3 Seconds*

There are n cities numbered from 0 to $n - 1$. At each of the city v , there is a treasure with value $c(v)$. Also, there are some roads connecting some pairs of cities. If there is a road (u, v) , one can go from city u to city v . Note that the roads are one-way, which means that one cannot go from v to u unless there is also a road (v, u) .

Mike is a treasure hunter. The King tell Mike:

Mike, I will give you some choices of the starting city. According to your choice, you will be sent to the city and you can go wherever you can reach.

But you can take only one treasure.

Mike, here is the map and good luck.

Please help Mike to find the most valued treasure.

Technical Specification

For problem 11:

1. $n \leq 200$.
2. $m \leq 40000$.
3. All the values of treasures are 32-bits nonnegative integers.

For problem 12:

1. $n \leq 5000$.
2. The number of roads is at most 100000.
3. All the values of treasures are 32-bits nonnegative integers.

Input File Format

Each test case contains one map and several starting cities. For each test case, the first line contains the three integers n , m and t , in which t is the number of starting cities in this case. You may assume that $0 < t \leq 100$. The second contains t nonnegative integer, each for one starting city. The starting cities are not necessarily distinct. In the third line, there are n integers, which are the values of the treasures, $v(0), v(1), \dots, v(n-1)$. The next m lines consists of the information of roads. Each of them contains two cities u and v representing there is a road (u, v) . Note that there are possible more than one road connecting the same pair of cities and that the starting and the ending cities of a road are not necessarily distinct. The case $n = m = t = 0$ indicates the end of input.

Output Format

For each test case, output the maximum value Mike can obtain.

Input

```
5 4 2
0 4
1 2 3 5 2
0 1
1 0
3 4
4 4
0 0 0
```

Output for the Sample Input

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2
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