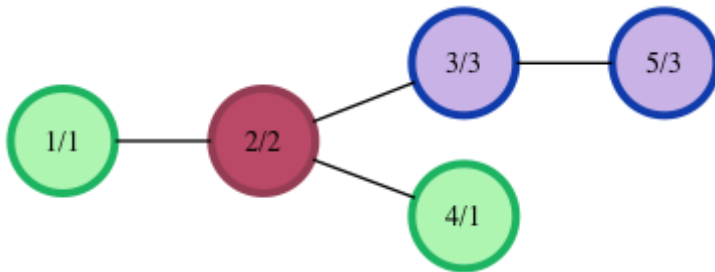


In this challenge, there is a connected undirected graph where each of the nodes is a color. Given a color, find the shortest path connecting any two nodes of that color. Each edge has a weight of **1**. If there is not a pair or if the color is not found, print **-1**.

For example, given *graph_nodes* = **5**, and **4** edges *g_from* = **[1, 2, 2, 3]** and *g_to* = **[2, 3, 4, 5]** and colors for each node are *arr* = **[1, 2, 3, 1, 3]** we can draw the following graph:



Each of the nodes is labeled [node]/[color] and is colored appropriately. If we want the shortest path between color **3**, blue, we see there is a direct path between nodes **3** and **5**. For green, color **1**, we see the path length **2** from **1** → **2** → **4**. There is no pair for node **4** having color **2**, red.

Function Description

Complete the `findShortest` function in the editor below. It should return an integer representing the length of the shortest path between two nodes of the same color, or **-1** if it is not possible.

`findShortest` has the following parameter(s):

- `g_nodes`: an integer, the number of nodes
- `g_from`: an array of integers, the start nodes for each edge
- `g_to`: an array of integers, the end nodes for each edge
- `ids`: an array of integers, the color id per node
- `val`: an integer, the id of the color to match

Input Format

The first line contains two space-separated integers *n* and *m*, the number of nodes and edges in the graph.

Each of the next *m* lines contains two space-separated integers *g_from*[*i*] and *g_to*[*i*], the nodes connected by an edge.

The next line contains *n* space-separated integers, *ids*[*i*], representing the color id of each node from **1** to *n*.

The last line contains the id of the color to analyze.

Note: The nodes are indexed from **1** to *n*.

Constraints

$$1 \leq n \leq 10^6$$

$$1 \leq m \leq 10^6$$

$$1 \leq ids[i] \leq 10^8$$

Print the single integer representing the smallest path length or -1 .

4 3
1 2
1 3
4 2
1 2 1 1
1

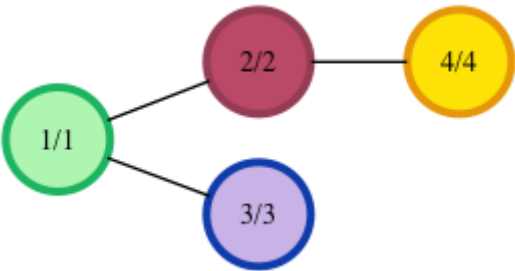
1

Sample Input 1

4 3
1 2
1 3
4 2
1 2 3 4
2

-1

https://www.hackerrank.com/challenges/find-the-nearest-clone/problem?isFullScreen=true&h_l=interview&playlist_slugs%5B%... 2/3



Sample Input 2

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

Sample Output 2

3

Explanation 2

