Hard Graph Problem Wells Fargo 2023

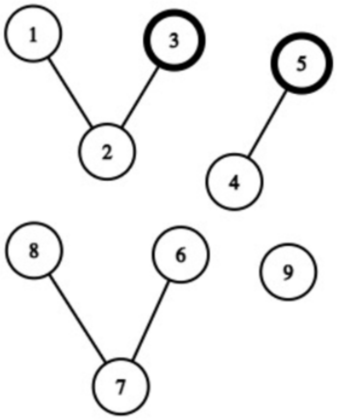
Given a graph with `n` node and `e` bidirectional edges. Some of the nodes are infected with malware. They are listed in the array malware, where if `malware[i] = 1` node `i` is infected, and if `malware[i] = 0`, node `i` is not infected.

Any infected node infects other non-infected nodes, which are directly connected. This process goes on until no new infected nodes are possible. **Exactly 1 node can be removed** from the network. Return the index of the node to remove such that the total infected nodes in the remaining network are minimized. If multiple nodes lead to the same minimum result, then return the one with the lowest index.

▼ Example 1

```
nodes = 9
edges = [{1, 2}, {2, 3}, {4, 5},
{6, 7}, {7, 8}]
malware = [0, 0, 1, 0, 1, 0, 0, 0, 0]
// consider 1 based index
```

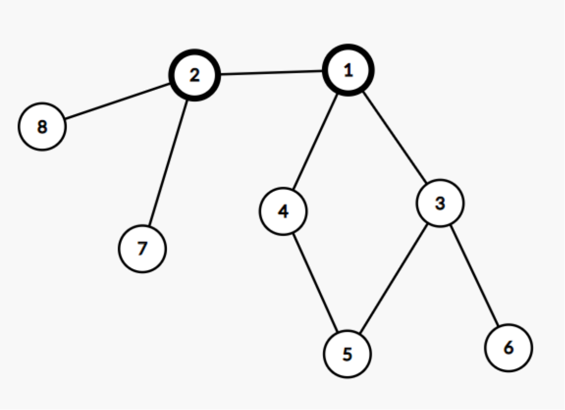
Initially, nodes [3, 5] are infected. At the end, nodes [1, 2, 3, 4, 5] will be infected. If node 3 is removed, only nodes 4 and 5 are infected, which is the minimum possible. Return 3, the node to remove.



▼ Example 2

```
nodes = 8
edges = [{1, 2}, {2, 7}, {2, 8},
{1, 4}, {1, 3}, {4, 5}, {3, 5},
{3, 6}]
malware = [1, 1, 0, 0, 0, 0, 0, 0]
// consider 1 based index
```

Initially, nodes [1, 2] are infected. At the end, all nodes will be infected. If node 1 is removed, only nodes 2, 7 and 8 are infected, which is the minimum possible. Return 1, the node to remove.



▼ Example 3

Initially, nodes [1, 2, 3] are infected. At the end, all nodes will be infected. If node 4 is removed, only nodes 1, 2 and 3 are infected, which is the minimum possible. Return 4, the node to remove.