

Problem Challenge 2

We'll cover the following ^

- Minimum Height Trees (hard)
- Try it yourself

Minimum Height Trees (hard)

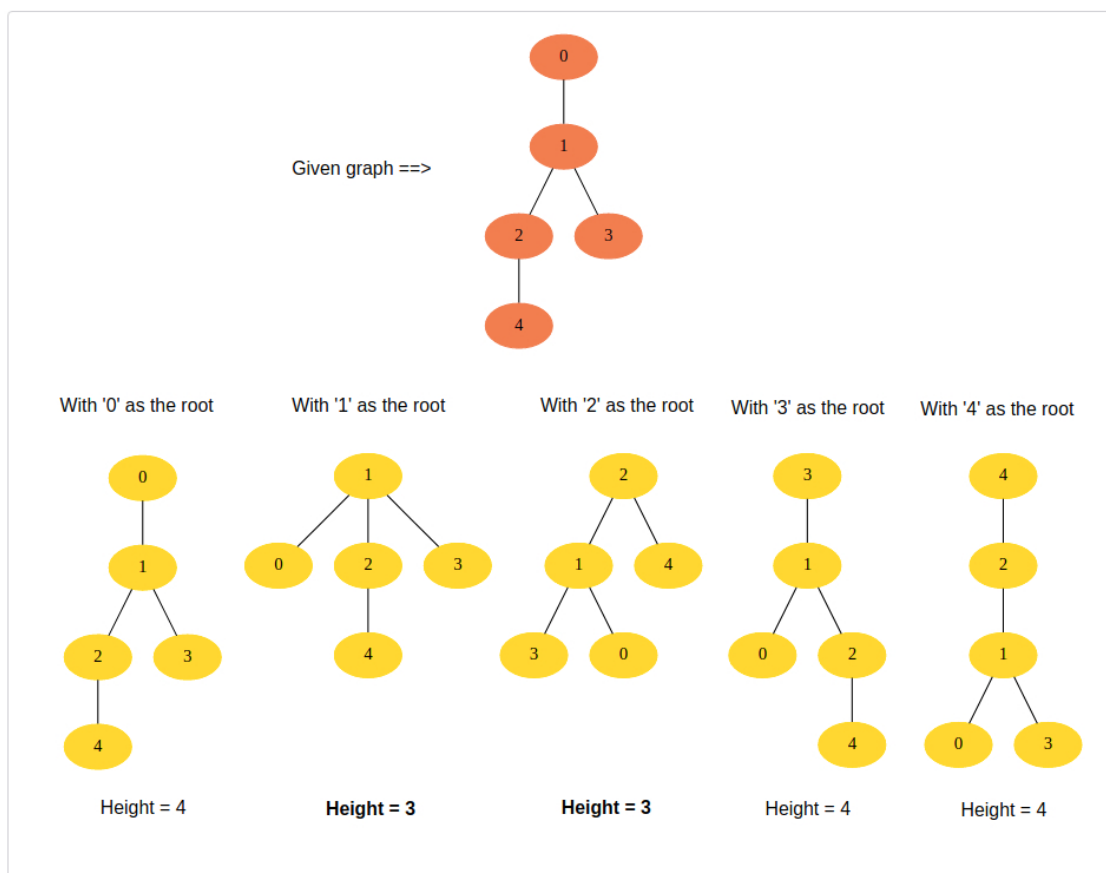
We are given an undirected graph that has characteristics of a **k-ary tree**. In such a graph, we can choose any node as the root to make a k-ary tree. The root (or the tree) with the minimum height will be called **Minimum Height Tree (MHT)**. There can be multiple MHTs for a graph. In this problem, we need to find all those roots which give us MHTs. Write a method to find all MHTs of the given graph and return a list of their roots.

Example 1:

```
Input: vertices: 5, Edges: [[0, 1], [1, 2], [1, 3], [2, 4]]
```

```
Output:[1, 2]
```

```
Explanation: Choosing '1' or '2' as roots give us MHTs. In the below diagram, we can see that the height of the trees with roots '1' or '2' is three which is minimum.
```



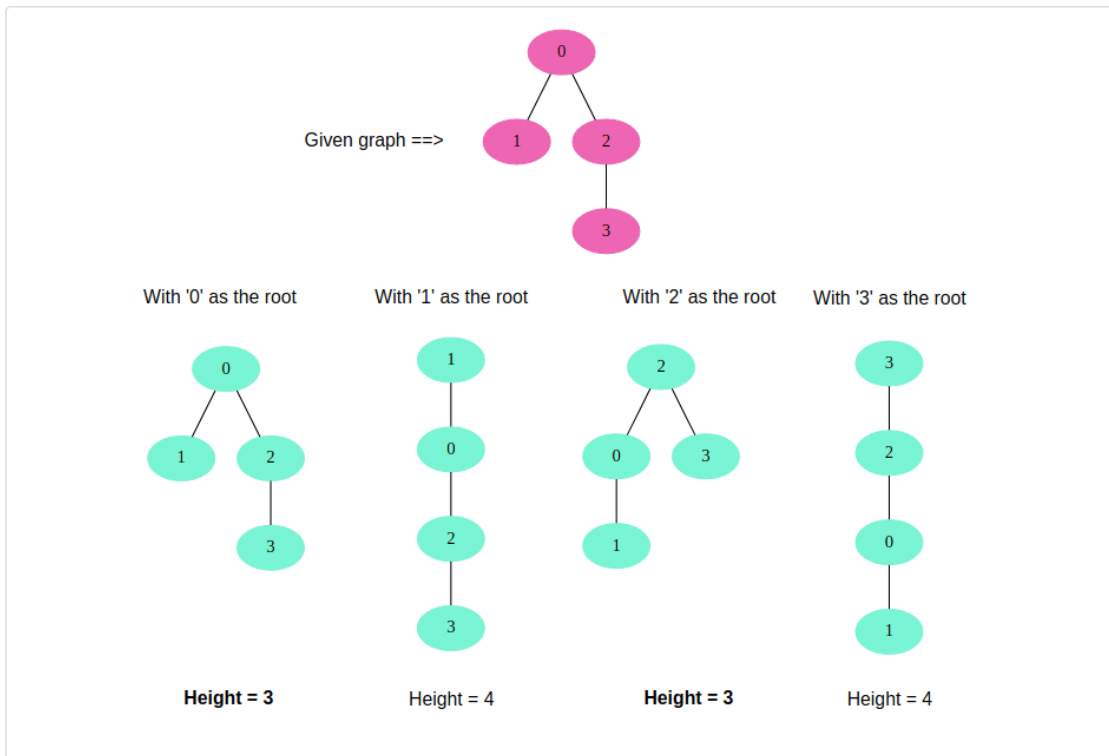
Example 2:

```
Input: vertices: 4, Edges: [[0, 1], [0, 2], [2, 3]]
```

```
Output:[0, 2]
```

```
Explanation: Choosing '0' or '2' as roots give us MHTs. In the below diagram, we can see that the
```

height of the trees with roots '0' or '2' is three which is minimum.



Example 3:

Input: vertices: 4, Edges: [[0, 1], [1, 2], [1, 3]]
Output:[1]

Try it yourself #

Try solving this question here:

Java Python3 JS C++

```
1 def find_trees(nodes, edges):
2     # TODO: Write your code here
3     return []
4
5
6 def main():
7     print("Roots of MHTs: " +
8         str(find_trees(5, [[0, 1], [1, 2], [1, 3], [2, 4]])))
9     print("Roots of MHTs: " +
10         str(find_trees(4, [[0, 1], [0, 2], [2, 3]])))
11     print("Roots of MHTs: " +
12         str(find_trees(4, [[0, 1], [1, 2], [1, 3]])))
13
14
15 main()
16
```

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Solution Review: Problem Challenge 1

Solution Review: Problem Challenge 2

✓ Completed

