

Week 15- Day 1 : Coding Challenge

(Maximum marks -15)

Q-1) 4Sum

<https://leetcode.com/problems/4sum/>

(7.5 marks)

(Medium)

Given an array `nums` of `n` integers, return *an array of all the unique quadruplets*

`[nums[a], nums[b], nums[c], nums[d]]` such that:

- `0 <= a, b, c, d < n`
- `a, b, c, and d` are distinct.
- `nums[a] + nums[b] + nums[c] + nums[d] == target`

You may return the answer in any order.

Example 1:

Input: `nums = [1,0,-1,0,-2,2]`, `target = 0`

Output: `[[-2,-1,1,2],[-2,0,0,2],[-1,0,0,1]]`

Q-2) Clone Graph

(7.5 marks)

<https://leetcode.com/problems/clone-graph/>

(Medium)

Given a reference of a node in a `connected` undirected graph.

Return a `deep copy` (clone) of the graph.

Each node in the graph contains a value (int) and a list (List[Node]) of its neighbors.

```
class Node {  
  
    public int val;  
  
    public List<Node> neighbors;  
  
}
```

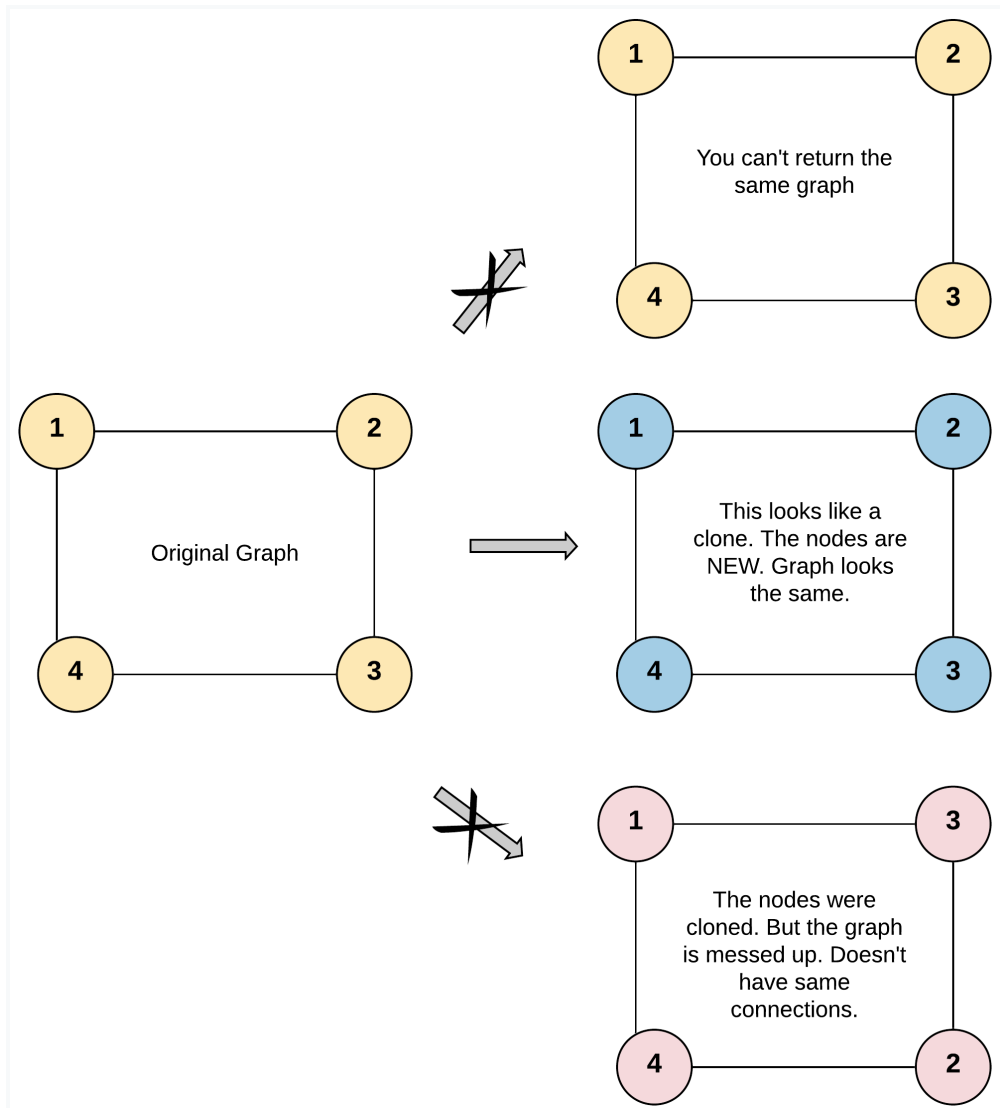
Test case format:

For simplicity, each node's value is the same as the node's index (1-indexed). For example, the first node with `val == 1`, the second node with `val == 2`, and so on. The graph is represented in the test case using an adjacency list.

An adjacency list is a collection of unordered lists used to represent a finite graph. Each list describes the set of neighbors of a node in the graph.

The given node will always be the first node with `val = 1`. You must return the copy of the given node as a reference to the cloned graph.

Example 1:



Input: `adjList = [[2,4],[1,3],[2,4],[1,3]]`

Output: `[[2,4],[1,3],[2,4],[1,3]]`

Explanation: There are 4 nodes in the graph.

1st node (val = 1)'s neighbors are 2nd node (val = 2) and 4th node (val = 4).

2nd node (val = 2)'s neighbors are 1st node (val = 1) and 3rd node (val = 3).

3rd node (val = 3)'s neighbors are 2nd node (val = 2) and 4th node (val = 4).

4th node (val = 4)'s neighbors are 1st node (val = 1) and 3rd node (val = 3).

Marks distribution:

Question 1,2 carry 7.5 marks each.