Week 12- Day 1 : Coding Challenge

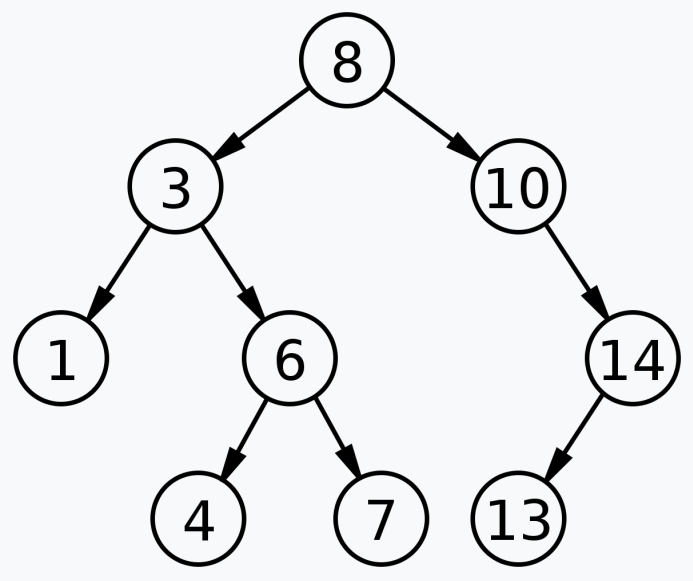
(Maximum marks -15)

Q-1) Write a program to print nodes in a BST having odd values:

(Easy)

(5 marks)

Input:



Sample output:

3
1
7
13

Q-2) Binary Search Tree to Greater Sum Tree **(5 marks)**

https://leetcode.com/problems/binary-search-tree-to-greater-sum-tree/

(Easy)

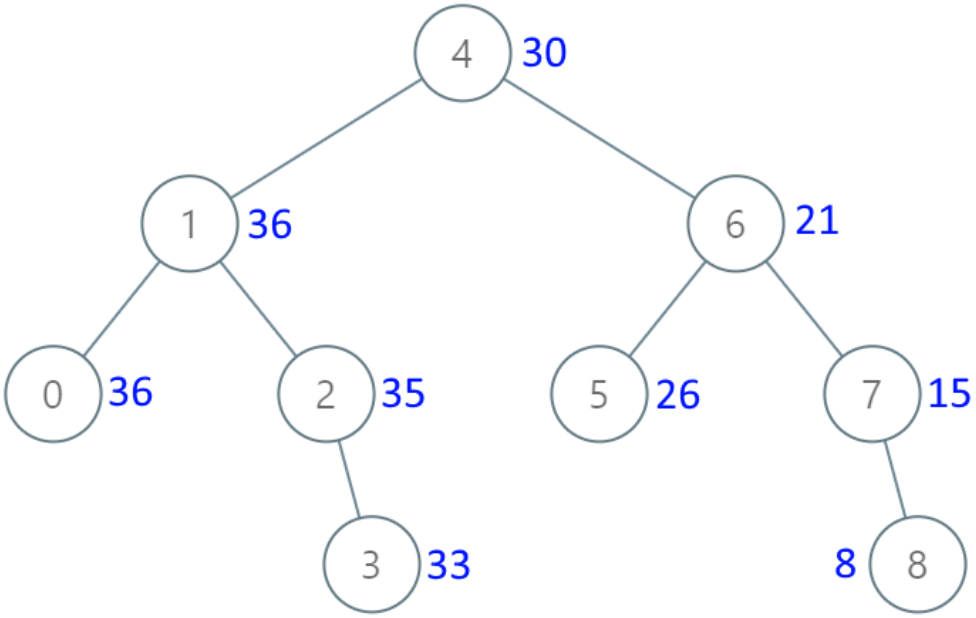
Given the root of a Binary Search Tree (BST), convert it to a Greater Tree such that every key of the original BST is changed to the original key plus sum of all keys greater than the original key in BST.

As a reminder, a *binary search tree* is a tree that satisfies these constraints:

- **The left subtree of a node contains only nodes with keys less than the node's key.**
- **The right subtree of a node contains only nodes with keys greater than the node's key.**
- **Both the left and right subtrees must also be binary search trees.**

Note: This question is the same as 538:
https://leetcode.com/problems/convert-bst-to-greater-tree/

Example 1:



Input: root = [4,1,6,0,2,5,7,null,null,null,3,null,null,null,8]
Output: [30,36,21,36,35,26,15,null,null,null,33,null,null,null,8]

Example 2:

Input: root = [0,null,1]
Output: [1,null,1]

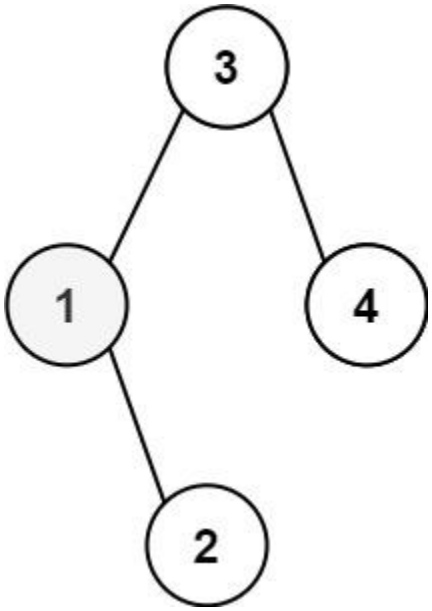
Q-3) Kth Smallest Element in a BST **(5 marks)**

https://leetcode.com/problems/kth-smallest-element-in-a-bst/

(Medium)

Given the `root` of a binary search tree, and an integer `k`, return *the* `kth` (1-indexed) *smallest element in the tree*.

Example 1:



`Input: root = [3,1,4,null,2], k = 1`
`Output: 1`

Marks distribution:

Question 1,2 and 3 carry 5 marks each.