

Problem 700: Search in a Binary Search Tree

Problem Information

Difficulty: Easy

Acceptance Rate: 82.25%

Paid Only: No

Tags: Tree, Binary Search Tree, Binary Tree

Problem Description

You are given the `root` of a binary search tree (BST) and an integer `val`.

Find the node in the BST that the node's value equals `val` and return the subtree rooted with that node. If such a node does not exist, return `null`.

Example 1:

Input: root = [4,2,7,1,3], val = 2 **Output:** [2,1,3]

Example 2:

Input: root = [4,2,7,1,3], val = 5 **Output:** []

Constraints:

* The number of nodes in the tree is in the range `[1, 5000]`. * `1 <= Node.val <= 10^7` * `root` is a binary search tree. * `1 <= val <= 10^7`

Code Snippets

C++:

```
/**  
 * Definition for a binary tree node.  
 * struct TreeNode {  
 *     int val;  
 *     TreeNode *left;  
 *     TreeNode *right;  
 *     TreeNode() : val(0), left(nullptr), right(nullptr) {}  
 *     TreeNode(int x) : val(x), left(nullptr), right(nullptr) {}  
 *     TreeNode(int x, TreeNode *left, TreeNode *right) : val(x), left(left),  
 *         right(right) {}  
 * };  
 */  
class Solution {  
public:  
    TreeNode* searchBST(TreeNode* root, int val) {  
  
    }  
};
```

Java:

```
/**  
 * Definition for a binary tree node.  
 * public class TreeNode {  
 *     int val;  
 *     TreeNode left;  
 *     TreeNode right;  
 *     TreeNode() {}  
 *     TreeNode(int val) { this.val = val; }  
 *     TreeNode(int val, TreeNode left, TreeNode right) {  
 *         this.val = val;  
 *         this.left = left;  
 *         this.right = right;  
 *     }  
 * }  
 */  
class Solution {  
    public TreeNode searchBST(TreeNode root, int val) {  
  
    }  
}
```

Python3:

```
# Definition for a binary tree node.
# class TreeNode:
#     def __init__(self, val=0, left=None, right=None):
#         self.val = val
#         self.left = left
#         self.right = right
#
# class Solution:
#
#     def searchBST(self, root: Optional[TreeNode], val: int) ->
#         Optional[TreeNode]:
```