

Delete Node in a BST

difficulty: Medium

<https://leetcode.com/problems/delete-node-in-a-bst/>

Given a root node reference of a BST and a key, delete the node with the given key in the BST. Return the root node reference (possibly updated) of the BST.

Basically, the deletion can be divided into two stages:

1. Search for a node to remove.
2. If the node is found, delete the node.

Note: Time complexity should be $O(\text{height of tree})$.

Example:

root = [5, 3, 6, 2, 4, null, 7]

key = 3

```
  5
 / \
3   6
/ \   \
2  4   7
```

Given key to delete is 3. So we find the node with value 3 and delete it.

One valid answer is [5, 4, 6, 2, null, null, 7], shown in the following BST.

```
  5
 / \
4   6
/   \
2     7
```

Another valid answer is [5, 2, 6, null, 4, null, 7].

```
  5
 / \
2   6
 \   \
  4   7
```