

# Online - 3.3

## Binary Search Tree

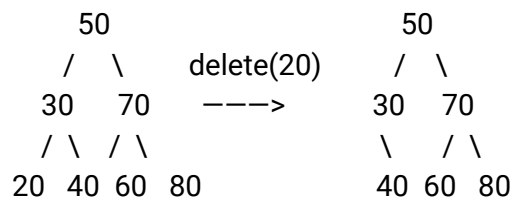
Duration: 30 mins

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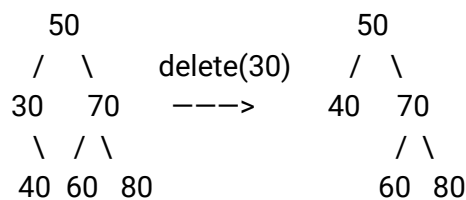
In your offline, to make it easy for you, we told you to assume that deletion operations can only be done on **leaf nodes**. But the actual deletion operation in a BST does not have this constraint. For this online we will modify the deletion operation to handle the other cases as well.

When we delete a node, **three possibilities** can arise:

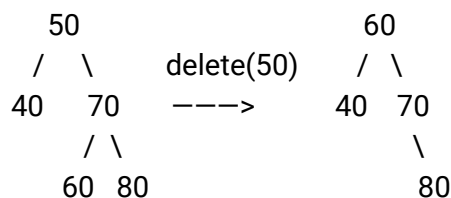
1. **Node to be deleted is the leaf:** Simply remove it from the tree. You have already implemented this case.



2. **Node to be deleted only has one child:** Copy the child to the node and delete the child.



3. **Node to be deleted has two children:** Find the inorder successor of the node. Copy contents of the inorder successor to the node and delete the inorder successor.



**Extend your offline and modify the deletion operation** to be able to handle all the 3 cases above.