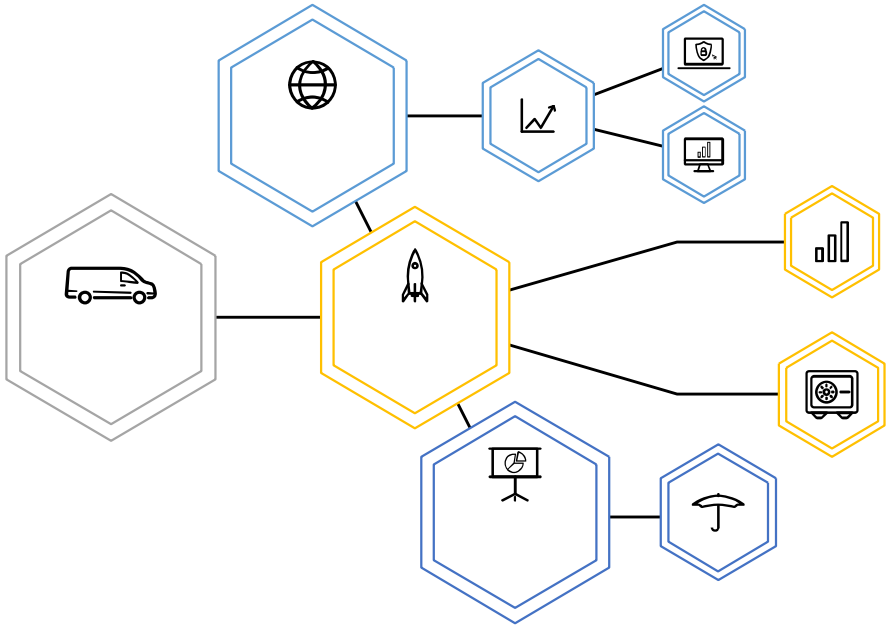


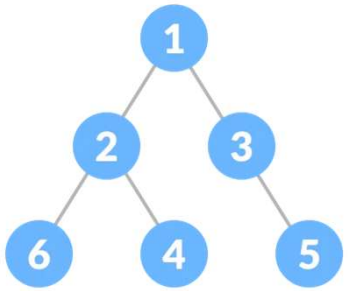
AV121: Data Structures and Algorithms

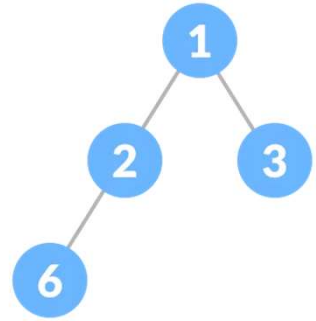
Tutorial-02

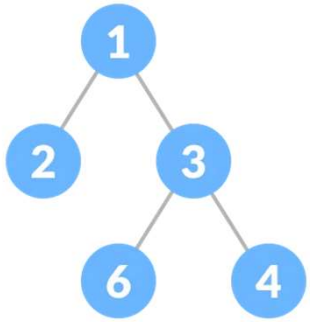
Tutorial 02 – Plan

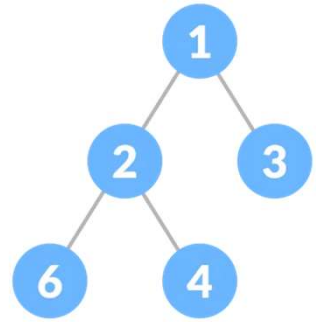
- Tree Types
  - → Complete, Full, Perfect
- Binary Search Tree
  - → Insertion, Deletion, Search

Identify the trees (Perfect, complete, both or none)









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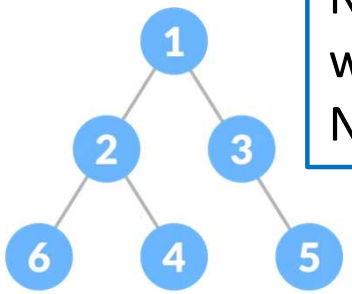
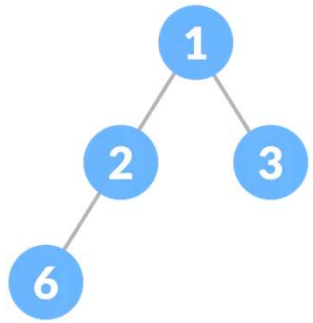


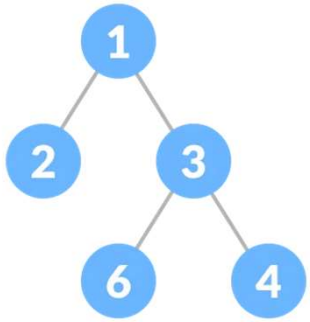
✗ Full Binary Tree
✗ Complete Binary Tree

Node 5 is inserted to right, when left is empty
Node 3 has only 1 child



✗ Full Binary Tree
✓ Complete Binary Tree

Node 2 has only 1 child



✓ Full Binary Tree
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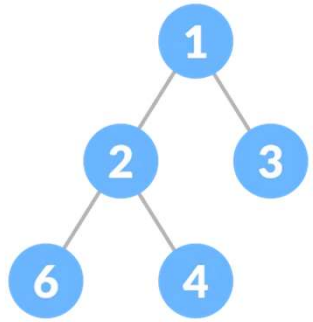
Node 6 and 4 inserted tree as child of 3, when left node is not filled



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- Suppose the numbers 40, 60, 50, 33, 55, 11 are inserted in order into an empty binary search tree. Show the 6 stages

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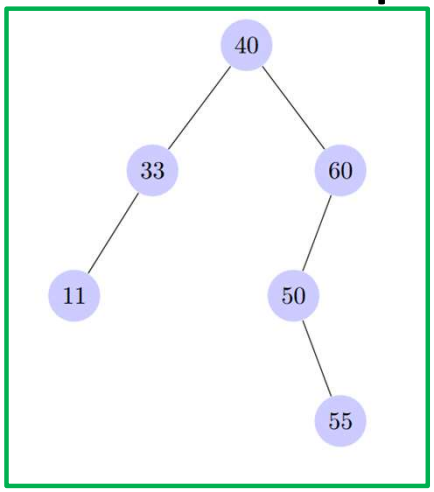

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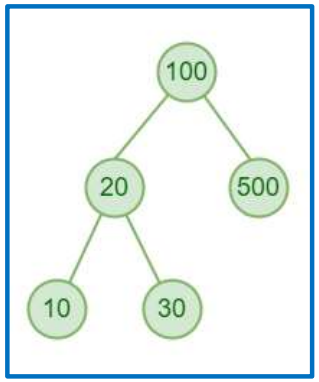
- Draw the binary search tree after inserting 40 to following tree



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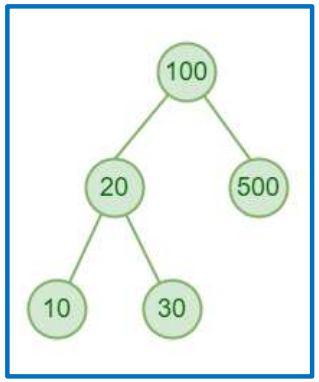

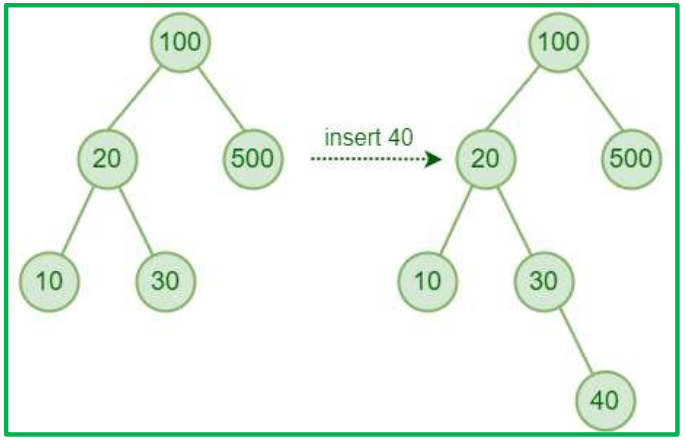

Deleting in Binary Search Tree

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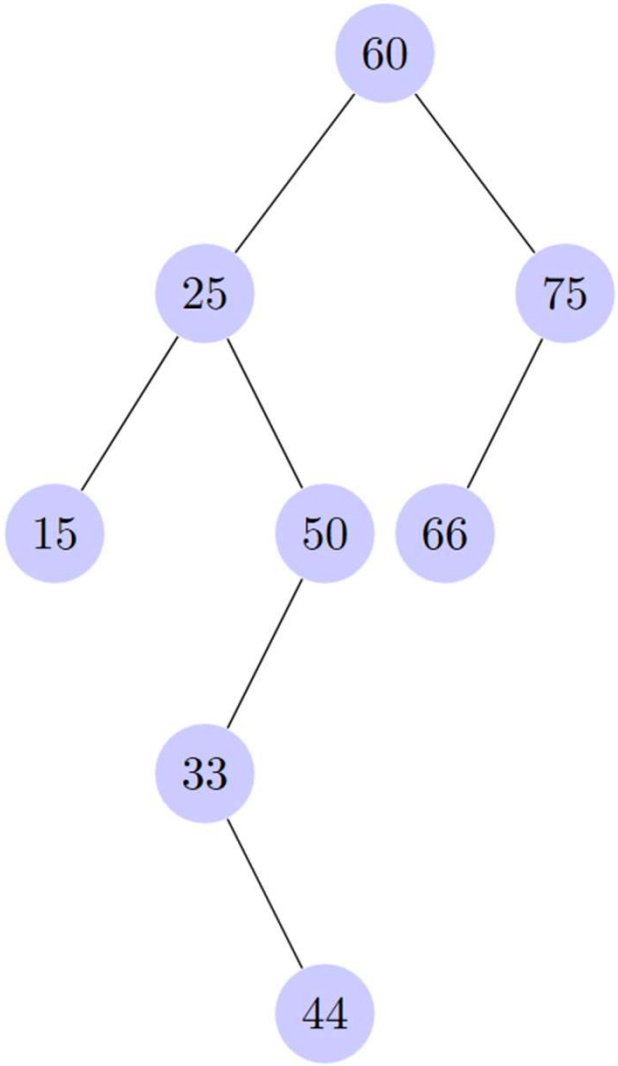

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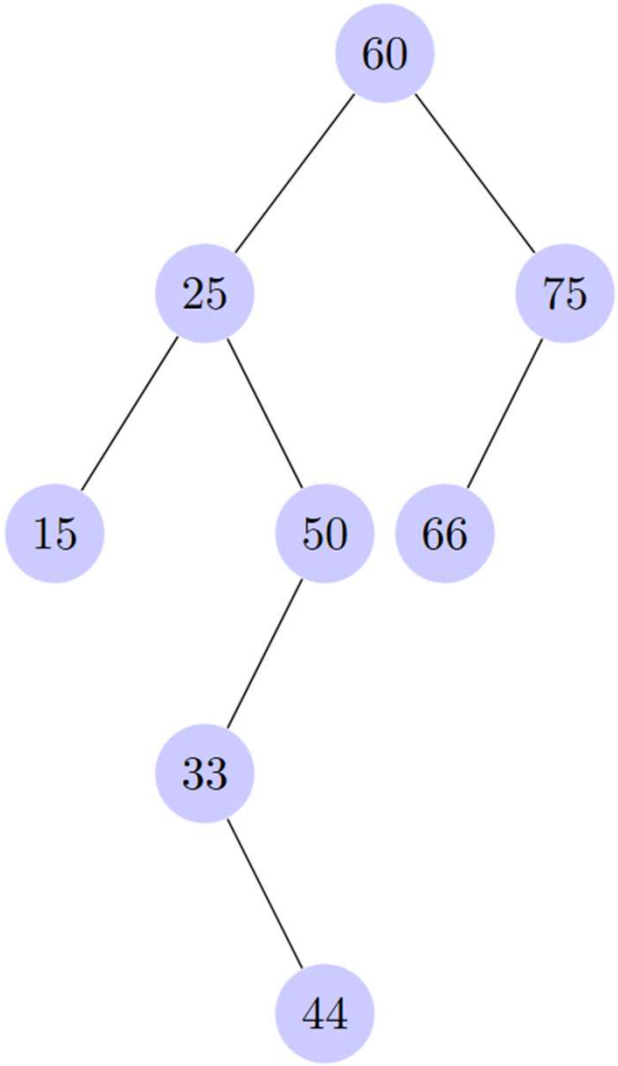

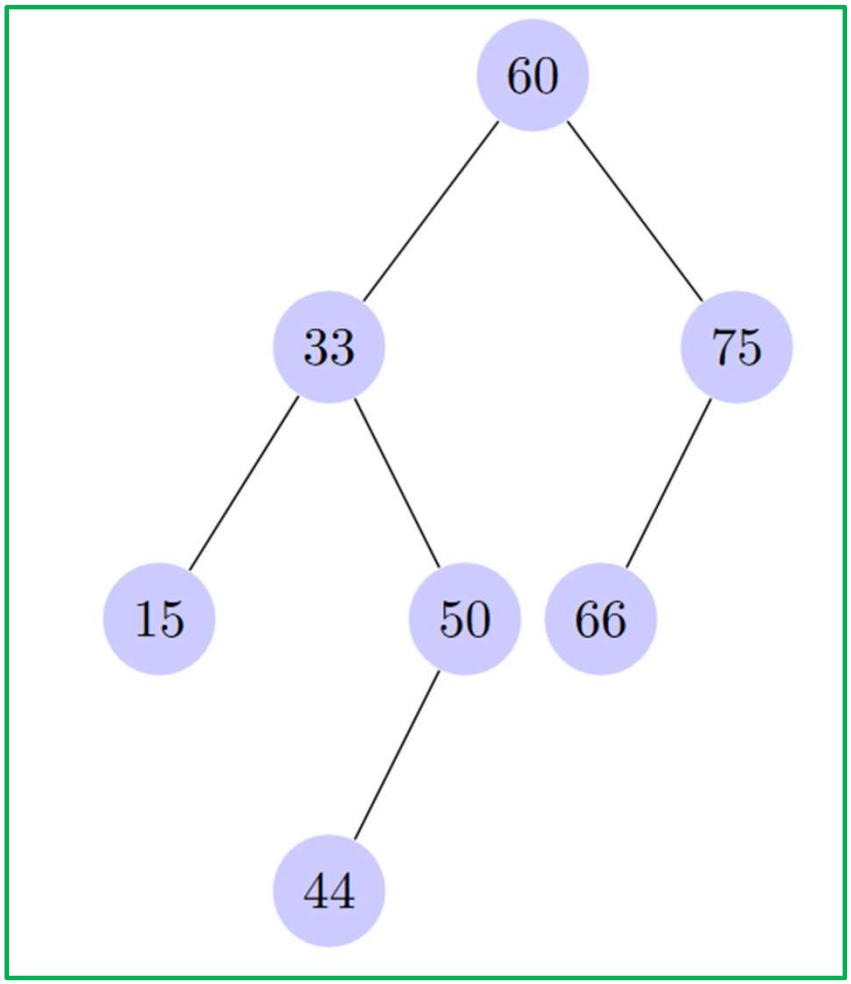

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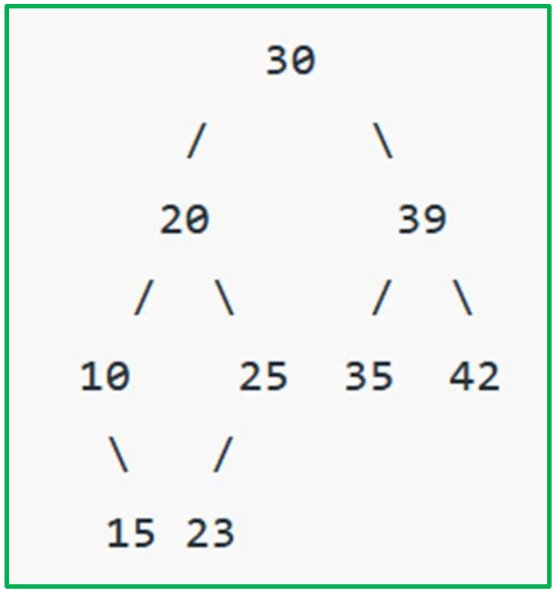

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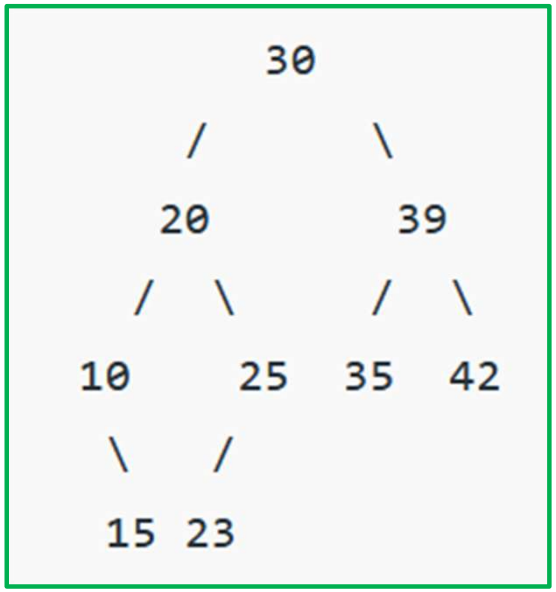

Postorder is 15, 10, 23, 25, 20, 35, 42, 39, 30