

Data Structures

Tree – Binary Search Tree

Team Emertxe





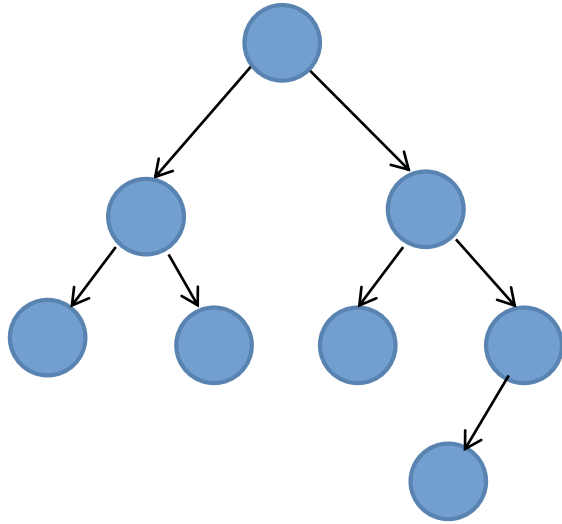
Tree – Binary Search Tree

Data Structure – Binary Search Tree

Introduction



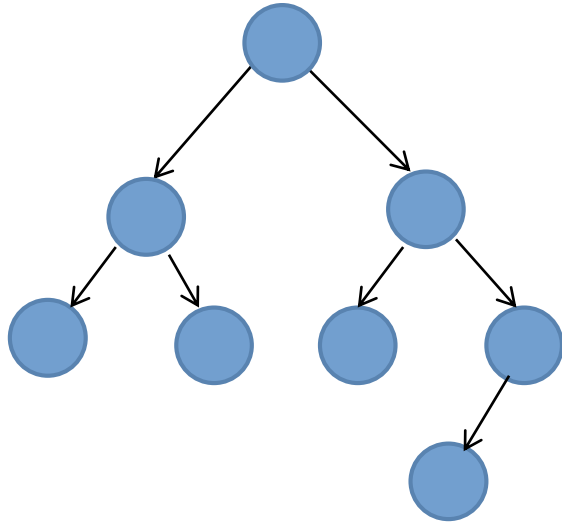
Introduction



Introduction



Binary Search Tree has the following properties



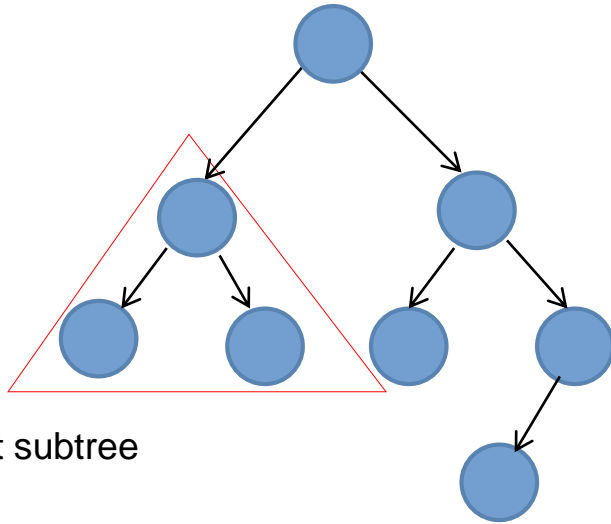
Introduction



Binary Search Tree has the following properties

- All nodes of left subtree are less than the root node

-



Left subtree

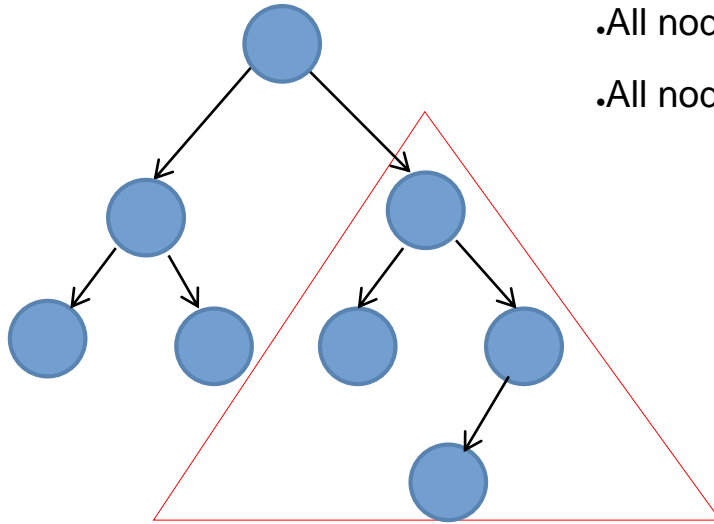
Data Structure – Binary Search Tree

Introduction



Binary Search Tree has the following properties

- All nodes of left subtree are less than the root node
- All nodes of right subtree are more than the root node



Right subtree

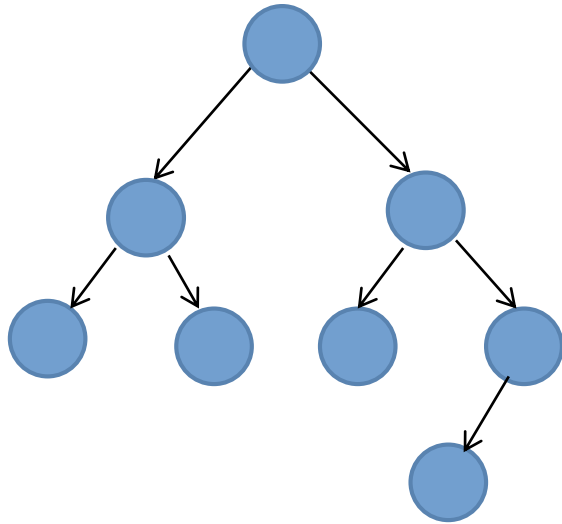
Introduction



Binary Search Tree has the following properties

- All nodes of left subtree are less than the root node
- All nodes of right subtree are more than the root node

30 , 20 , 50 , 10 , 55, 25, 52, 40

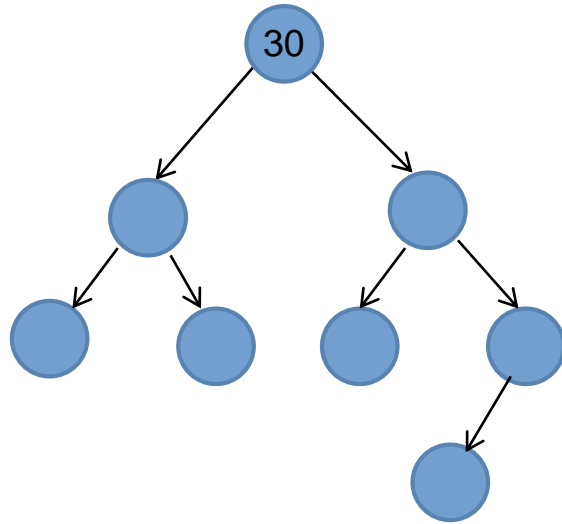


Introduction



Binary Search Tree has the following properties

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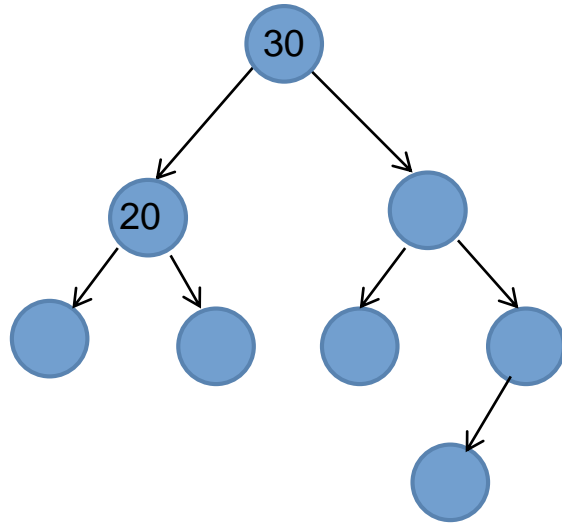
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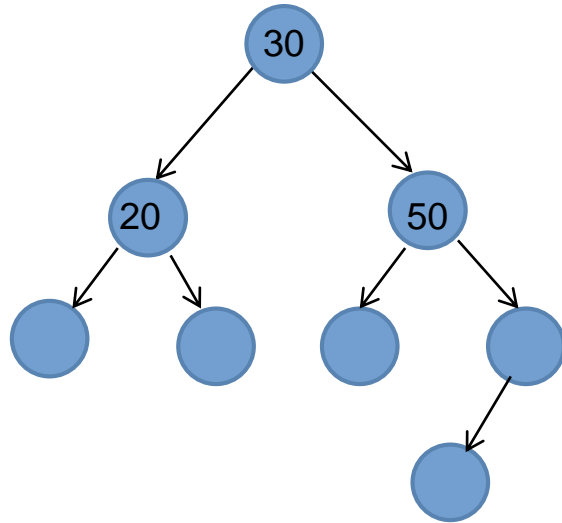
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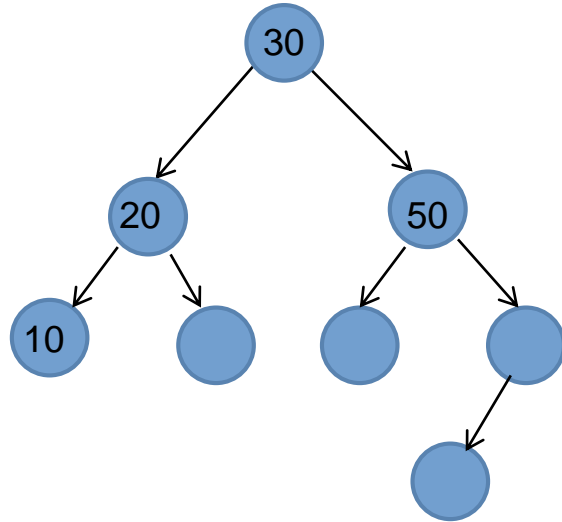
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Introduction



$10 < 30$

$10 < 20$



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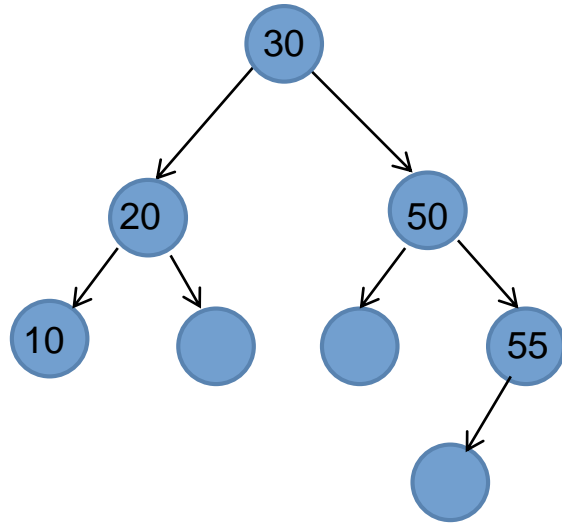
30 , 20 , 50 , 10 , 55, 25, 52, 40

Introduction



$55 > 30$

$55 > 50$



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30 , 20 , 50 , 10 , 55, 25, 52, 40

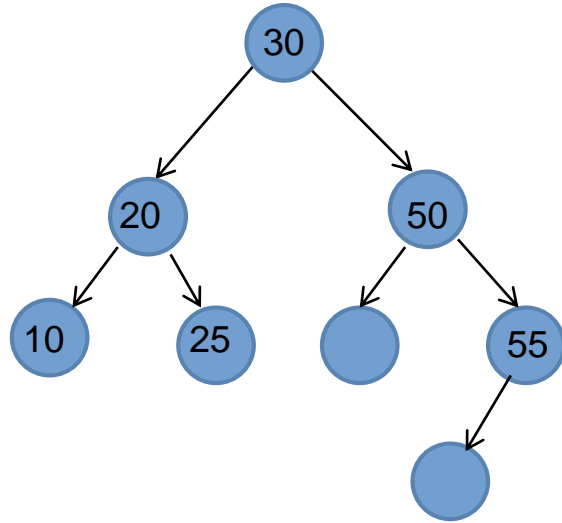
Data Structure – Binary Search Tree

Introduction



$25 < 30$

$25 > 20$



Binary Search Tree has the following properties

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30 , 20 , 50 , 10 , 55, 25, 52, 40

Data Structure – Binary Search Tree

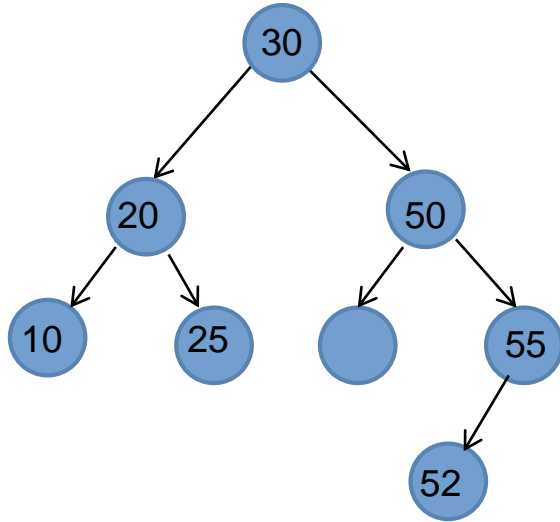
Introduction



$52 > 30$

$52 > 50$

$52 < 55$



Binary Search Tree has the following properties

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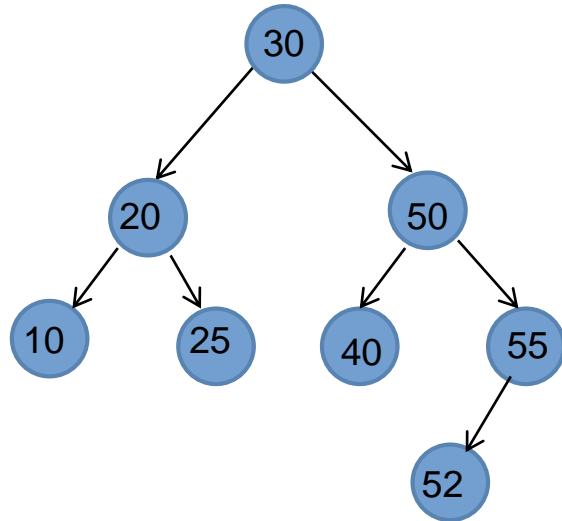
Introduction



$40 > 30$

$40 < 50$

$40 = 40$



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Data Structure – Binary Search Tree

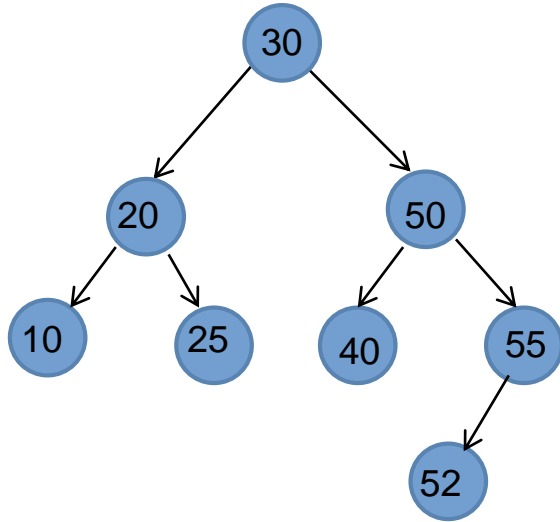
Introduction



$40 > 30$

$40 < 50$

$40 = 40$



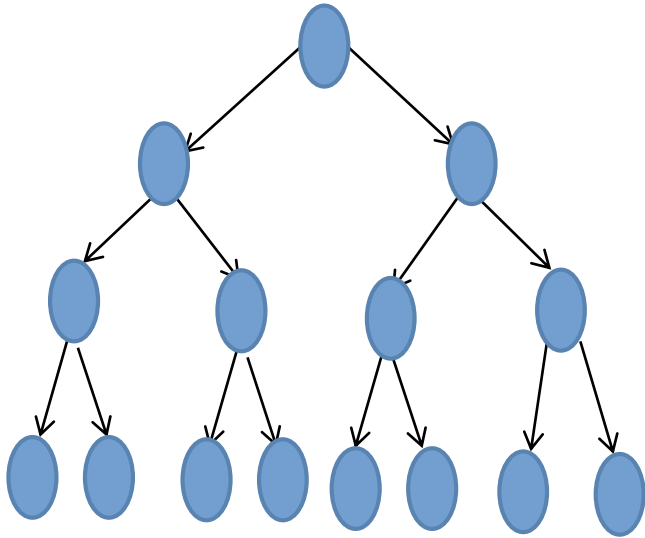
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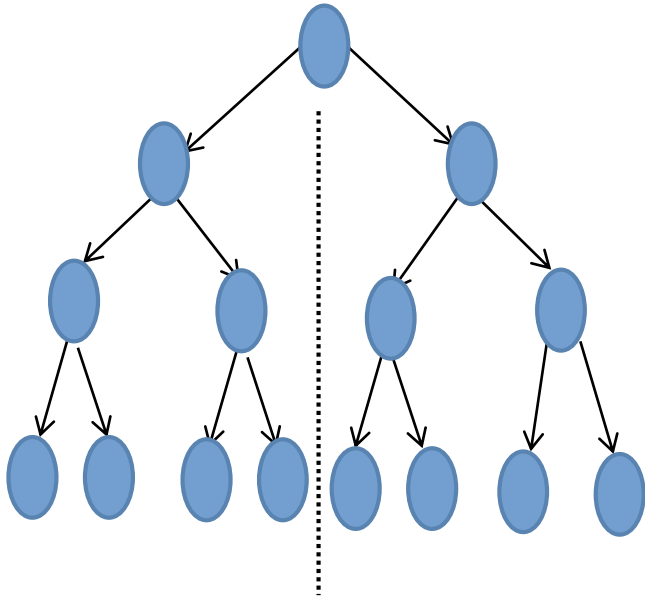
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Duplicacy is not allowed

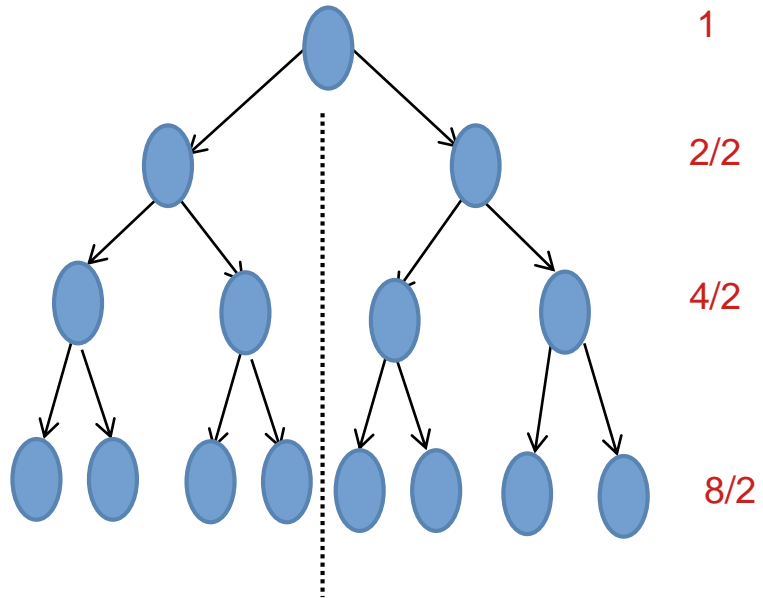
Introduction



Introduction

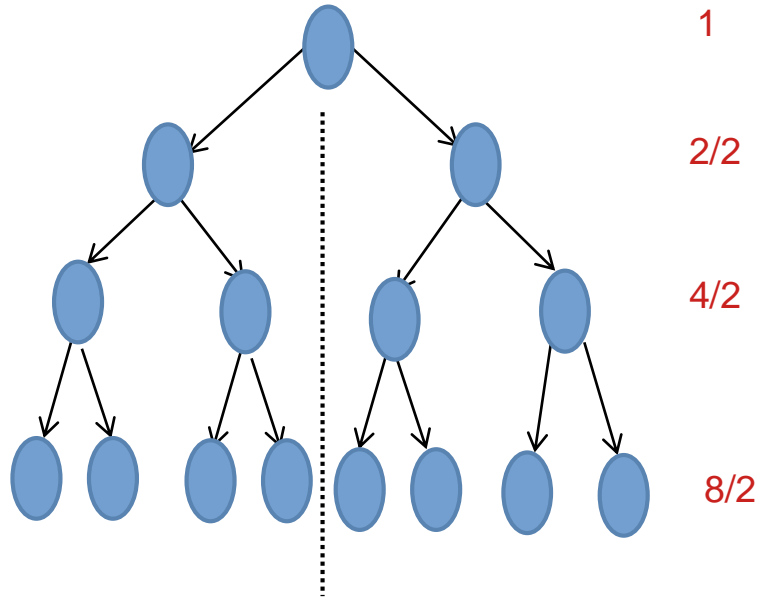


Introduction



Data Structure – Binary Search Tree

Introduction



Time Complexity

\propto No. of Comparison

Height of Tree

$= \log(n)$

$= O(\log(n))$

Binary Search Tree - Insert

