

Report For Binary Search Tree

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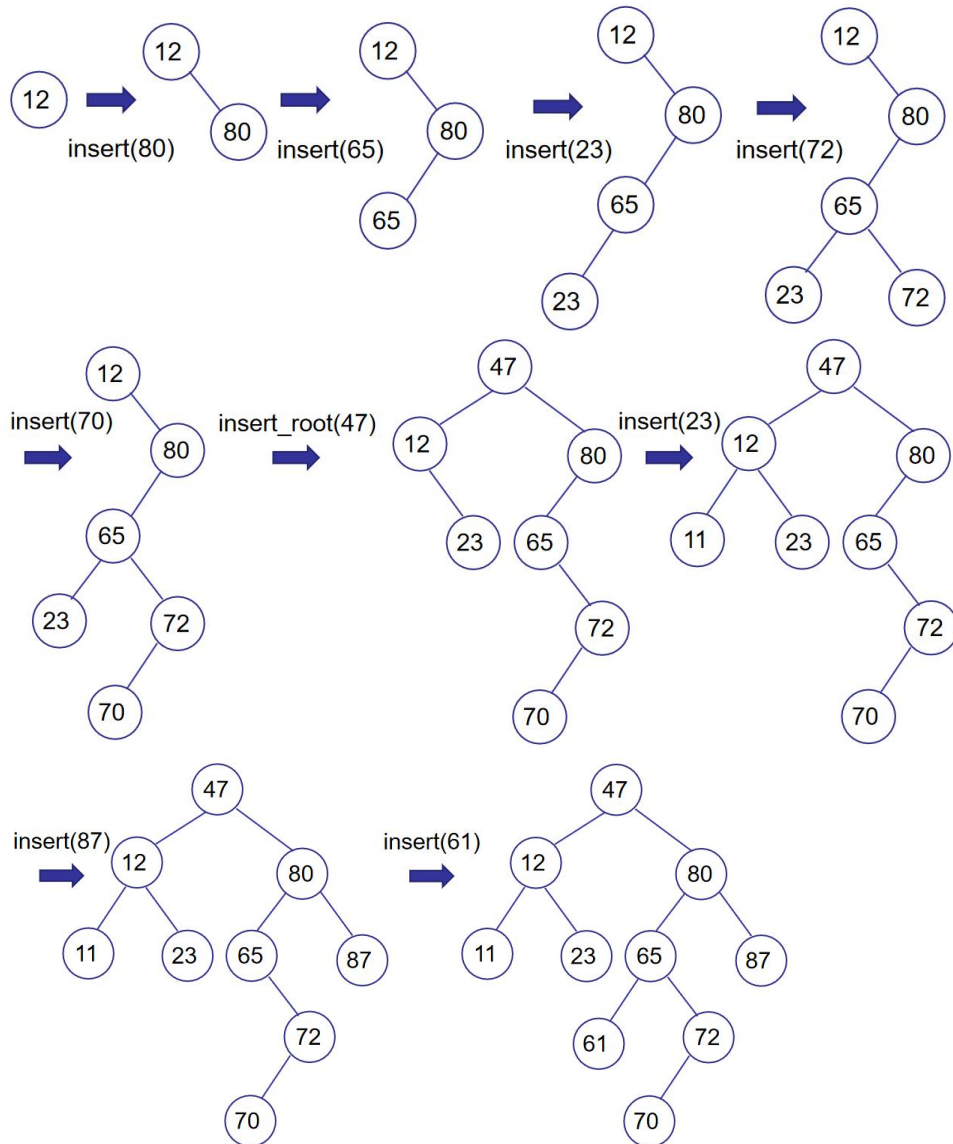
1. Problem description / demand analysis 问题描述

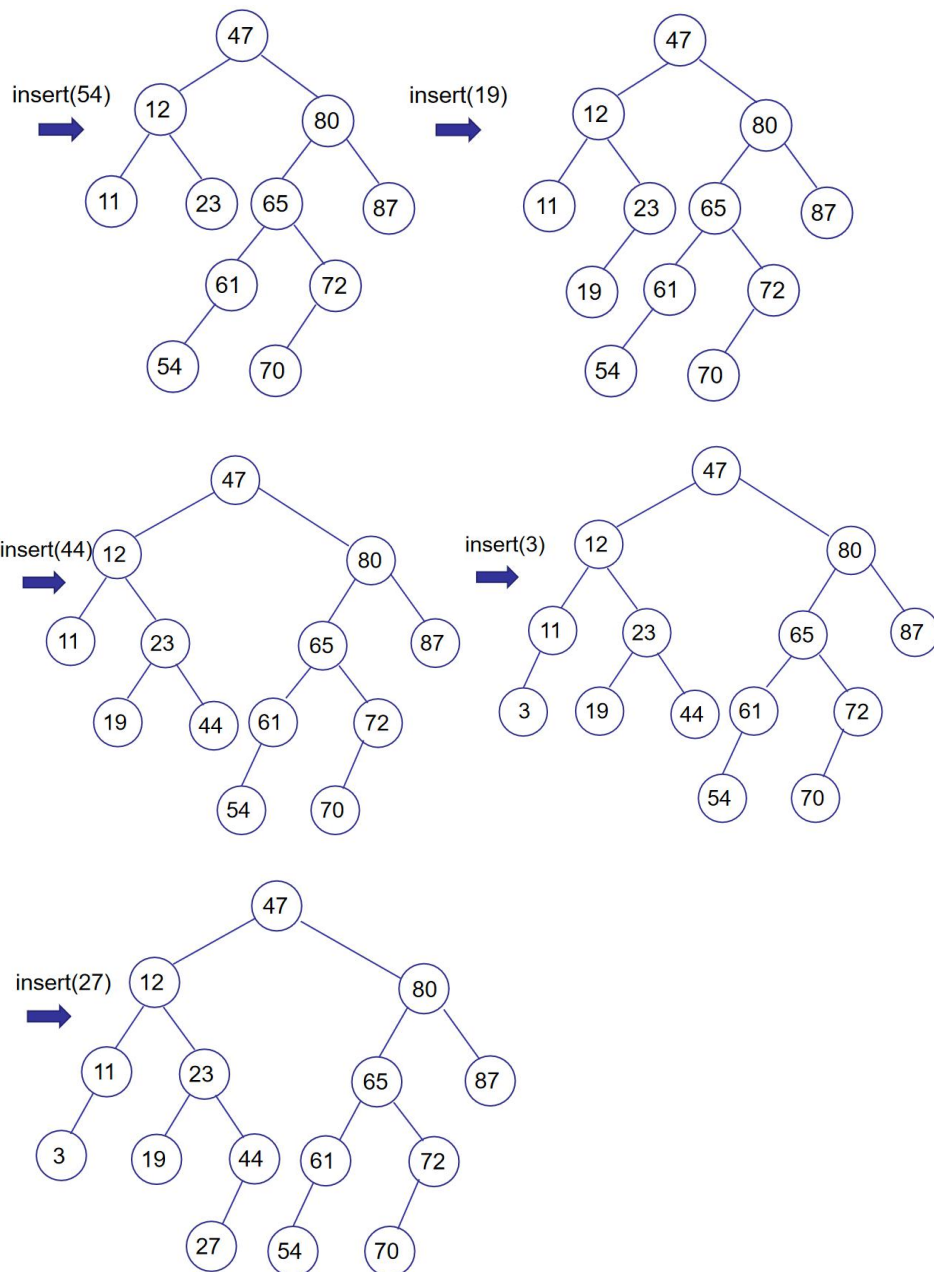
- 1) Insert the following elements in a Binary Search Tree in the given order and draw the tree
12, 80, 65, 23, 72, 70, insert_root(47), 11, 87, 61, 54, 19, 44, 3, 27
- 2) What is the height of the constructed tree?
- 3) What is the average time (average path from the root) for accessing each element of the tree?

2. Results and analysis 结果和分析

解:

1)





- 2) The height of the constructed tree is: 5
- 3) The average time (average path from the root) for accessing each element of the tree is:

$$\frac{0 * 1 + 1 * 2 + 2 * 4 + 3 * 5 + 4 * 3}{15} = \frac{37}{15} \approx 2.467$$