

16.7 Exercises

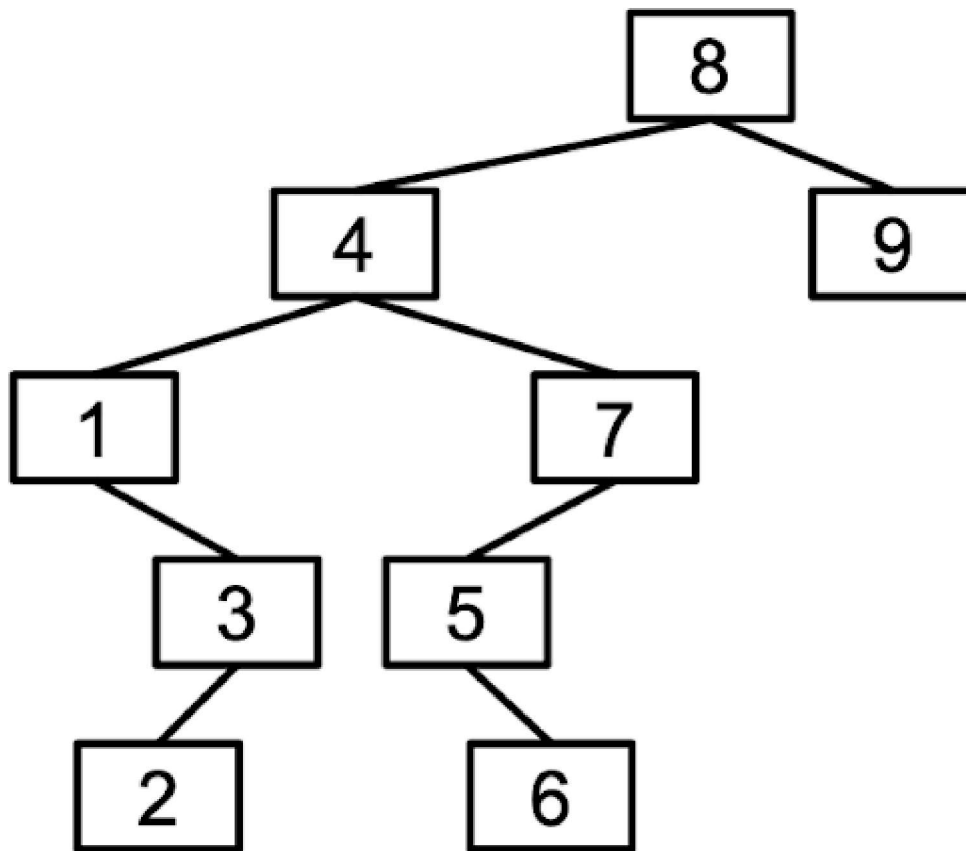
Factual

1. What is the best and worst-case height of a BST?

› Problem 1

Procedural

1. Suppose that a certain BST has keys that are integers between 1 and 10. During the search for 5, which of the following sequences of keys are possible?
 - ☐ 10, 9, 8, 7, 6, 5
 - ☐ 4, 10, 8, 7, 5, 3
 - ☐ 1, 10, 2, 9, 3, 8, 4, 7, 6, 5
 - ☐ 1, 2, 6, 8, 9, 5
2. Consider the below BST. What is the result after deleting 4 using Hibbard deletion, choosing the sucessor as the replacement?



3. Suppose we implement the Stack ADT using an array. What is the worst case runtime of a `push` operation with this underlying data structure?

> Problem 1

> Problem 2

> Problem 3

Metacognitive

1. If inserting our data into a BST in random order yields $\log N$ height with high probability, why don't we just shuffle our data before inserting into the BST?
2. When we do Hibbard deletion from a BST, we always choose the successor as a replacement. The successor is guaranteed to only have zero or one child--why?

> Problem 1

> Problem 2

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Last updated 1 year ago

