M5: Hands-On: AVL Trees

Due Apr 2 at 11:59pm **Points** 2 **Questions** 2 **Time Limit** None
Allowed Attempts Unlimited

Instructions

8. Repeat this process for each element in the `values` array.
9. Make sure you understand how to build an AVL tree from a given sequence of values.

Adding values

1. Open `AvlTreeClient.java` in jGRASP and compile it.
2. Run this program, observe the output, and make sure you understand what it is doing.
3. Set a breakpoint on the statement `avl.add(value)` in the `main` method.
4. Start the debugger and wait until execution is paused at the breakpoint.
5. Open a new Canvas window.
6. Add viewers for `values`, `value`, and `avl` to the canvas window.
7. Step in to the call to `add`.
8. Using step-over and step-in as needed, explore the execution of the `add` and `put` methods, observing their effect in the canvas window.
9. Repeat this process for each element in the `values` array.
10. Make sure you understand how the `add` and `put` methods work, especially the rebalancing operations that happen.

Submission

The submission page for this activity asks you to apply your understanding of AVL trees to a problem and then submit it for a grade.

Take the Quiz Again

Attempt History

	Attempt	Time	Score
KEPT	Attempt 2	less than 1 minute	2 out of 2
LATEST	Attempt 2	less than 1 minute	2 out of 2
	Attempt 1	6 minutes	0 out of 2

Score for this attempt: **2** out of 2

Submitted Mar 29 at 8:33pm

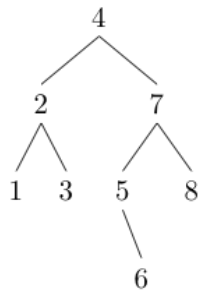
This attempt took less than 1 minute.

Question 1

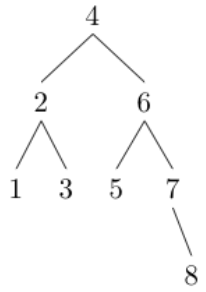
1 / 1 pts

Which tree would result from inserting the following values in the sequence in which they are written into an initially empty AVL tree? 1, 8, 4, 2, 3, 5, 6, 7

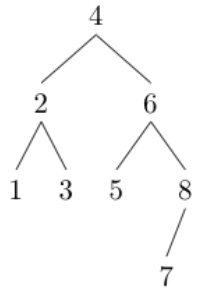
A.



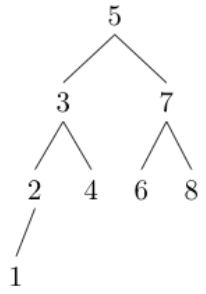
B.



C.



D.



A

B

Correct!

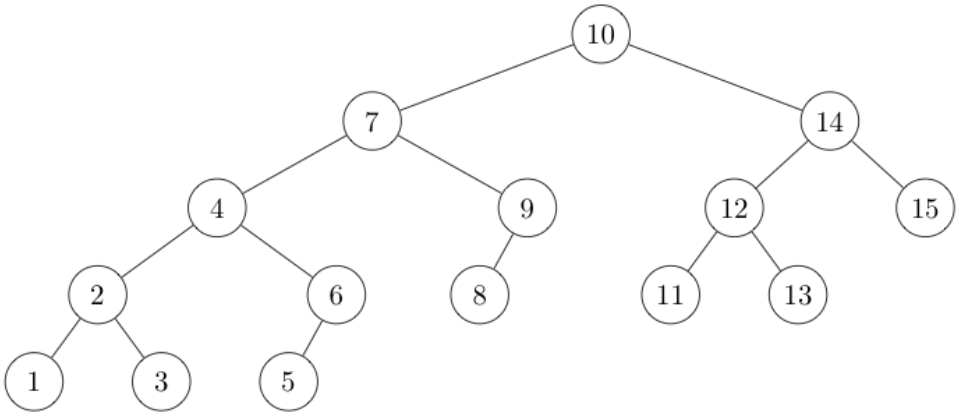
C

D

Question 2

1 / 1 pts

What is the balance factor of the root of the AVL tree below?



A. -1

B. 0

C. 1

D. -2

Correct!

A

B

C

D

Quiz Score: **2** out of 2