CE BST CODE

MISSING 10 Possible Points

| 10/24/2022

Attempt 1

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Learning Objectives

- Create a BST by adding individual elements
- Implement and test pre-order, in-order, and post-order traversal for class BST.

Overview

This CE has two parts.
In Part A, you will create and draw binary search trees based on a sequence of elements.
In Part B, you will implement and test three methods that allow traversing a BST in pre-order, in-order, and post-order.

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Part A

In this first part, you will create binary search trees by adding specified elements in the order in which they are presented. Draw the trees as you add the individual elements. When you are done, compare your results.

Challenge 1:

Create and draw a binary search tree by adding the following elements:

50, 20, 80, 60, 10, 70, 30, 90, 40

When you are done, ***compare***

Challenge 2:

Create and draw two (2) binary search trees by adding the following elements:

tree 1: A, B, C, D, E
tree 2: Q, P, O, N, M

When you are done, ***compare***

Challenge 3:

Create and draw four (4) binary search trees by adding the elements listed below. All four trees add the numbers 1 to 7. However, the order in which they are added differs.

tree 1: 1, 7, 2, 6, 3, 5, 4
tree 2: 4, 3, 5, 6, 2, 1, 7
tree 3: 4, 6, 5, 2, 1, 3, 7
tree 4: 4, 2, 3, 6, 7, 5, 1

When you are done, ***compare***

Challenge 4:

Create and draw a binary search tree by adding the following elements:

H, P, E, K, L, C, U, S, D, Q, I, W, V, R, Y, F

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In this second part, you will implement three methods that traverse a BST in pre-order, in-order, and post-order.

- Create a package called **ceBinarySearchTree**.
  It should include the class **BSTdeluxe**
- Copy **class BST (https://algs4.cs.princeton.edu/32bst/BST.java.html)** as a starting point into BSTdeluxe and make the necessary changes so that it compiles.
  When you are done, BSTdeluxe includes a method called levelOrder. It traverses the binary search tree and returns the keys in level order.
- Add the following three methods:
  preOrder, **inOrder**, and **postOrder**.
  All three methods have an empty parameter list and a return type Iterable<Key>.
  Implement the methods using recursion and return the keys in the order specified by the traversal.
- Use the JUnit tests **BSTdeluxeTest.java (https://slcc.instructure.com/courses/817632/files/135713684/download?wrap=1)** **(https://slcc.instructure.com/courses/817632/files/135713684/download?download_frd=1)** to test the methods.

Submission

Create a screen recording following the **guidelines for lab recordings (https://slcc.instructure.com/courses/817632/pages/guidelines-for-ce-recordings)** .
Please ensure that the JUnit tests are part of the recording and that the results or the tests are clearly visible (how many tests were executed, passed, failed)

The video should be **25-50 seconds** long.
Post the video.

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Criteria	**Ratings**				**Pts**
preOrder works as expected view longer description	**3 pts** **Full Marks**	**2 pts** **Close** Most of the requirements are met but one of the JUnit tests is failing.	**1 pts** **Getting there** Either the method works but it doesn't use recursion in its implementation or the method works only partially and more than one JUnit test fails.	**0 pts** **Doesn't Work** Either the method is missing or its implementation differs significantly from the requirements.	/ 3 pts
inOrder works as expected view longer description	**3 pts** **Full Marks**	**2 pts** **Close** Most of the requirements are met but one of the JUnit tests is failing.	**1 pts** **Getting there** Either the method works but it doesn't use recursion in its implementation or the method works only partially and more than one JUnit	**0 pts** **Doesn't Work** Either the method is missing or its implementation differs significantly from the requirements.	/ 3 pts

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Criteria	Ratings				Pts
postOrder works as expected view longer description	**3 pts** **Full Marks**	**2 pts** **Close** Most of the requirements are met but one of the JUnit tests is failing.	**1 pts** **Getting there** Either the method works but it doesn't use recursion in its implementation or the method works only partially and more than one JUnit test fails.	**0 pts** **Doesn't Work** Either the method is missing or its implementation differs significantly from the requirements.	/ 3 pts
Style | Video view longer description	**1 pts** **Well done**		**0 pts** **Need Improvement** At least one of the requirements is missing		/ 1 pts
					Total Points: 0

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