

# CS 2500: Project 5–

## Working With Trees: Extending the Binary Search Tree Class

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#### PRELIMINARIES:

Before starting this assignment you need to be familiar with queues and binary search trees. You also need to be familiar with the directions and examples here:

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#### THE ASSIGNMENT:

- Write a driver for certain operations of a *keyed list*. Sample input:
  - emptyTest
  - insert every
  - insert boy
  - count
  - height
  - insert good
  - insert eats
  - count
  - height
  - insert breakfast
  - count
  - height
  - treePrint
  - levelPrint
  - emptyTest
  - delete every
  - delete fine
  - delete boy
  - treePrint
  - levelPrint

- stop

- **Sample output:**

```

• #####
• emptyTest
• The tree is empty.
• #####
• insert every
• "every" has been placed in the tree.
• #####
• insert boy
• "boy" has been placed in the tree.
• #####
• count
• The tree contains 2 elements.
• #####
• height
• The height of the tree is: 2.
• #####
• insert good
• "good" has been placed in the tree.
• #####
• insert eats
• "eats" has been placed in the tree.
• #####
• count
• The tree contains 4 elements.
• #####
• height
• The height of the tree is: 3.
• #####
• insert breakfast
• "breakfast" has been placed in the tree.
• #####
• count
• The tree contains 5 elements.
• #####
• height
• The height of the tree is: 4.
• #####
• treePrint
• The tree looks like this:
•

```

```

•      good
•  every
•           eats
•           breakfast
•      boy
•
• #####
• levelPrint
• The levels of the tree look like this:
•
•  every
•  boy  good
•  eats
•  breakfast
•
• #####
• emptyTest
• The tree is not empty.
• #####
• delete every
• "every" has been removed from the tree.
• #####
• delete fine
• "fine" does not exist in the tree!
• #####
• delete boy
• "boy" has been removed from the tree.
• #####
• treePrint
• The tree looks like this:
•
•  good
•      eats
•          breakfast
•
• #####
• levelPrint
• The levels of the tree look like this:
•
•  good
•  eats
•  breakfast
•
• #####
• stop
• All done.  Good bye.
• #####

```

- Implement the emptyTest, insert, The bstClass is implemented by the files in modules the BST Zip file.
- Implement the count, height, treePrint, and levelPrint commands. Also implement the following functions: TreeCount, TreeHeight, RevOrderPrint, and LevOrderPrint.