



Your Name: _____
ID#: _____

TA's Name: _____
Section #: _____

SOLUTION: Take Home: Quiz 6 (15 pts) - Binary Search Trees

Using Canvas <https://canvas.wsu.edu/>, please submit your solution to the correct quiz folder. Your solution should be a .pdf file with the name <your last name>_quiz6.pdf and uploaded. To upload your solution, please navigate to your correct Canvas *lab* course space. Select the “Assignments” link in the main left menu bar. Navigate to the correct quiz submission folder. Click the “Start Assignment” button. Click the “Upload File” button. Choose the appropriate .pdf file with your solution. Finally, click the “Submit Assignment” button.

1. (8 pts) What is a binary search tree (BST)? Describe the properties of a BST in your answer.

A BST is a nonlinear data structure with the following properties:

All elements stored in the left subtree of a node whose value is K have values less than K . All elements stored in the right subtree of a node whose value is K have values greater than (or equal) to K . That is, a node's left child must have a key less than its parent, and a node's right child must have a key greater than (or equal to) its parent.

A real-world example includes representing customer orders where the customer ID may be used to search and recall orders for a particular customer.



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2. (7 pts - 1 pt/number) Given the following sequence of numbers: 50, 15, 12, -50, 7, 80, 20. If the numbers are inserted into a BST in the sequence provided, then what would the tree look like? Draw a diagram for the BST. Be sure to show both branches of a given node.

