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Software Development: Data Structures

(H16Y 35)

Preparing for Outcome 2, Part 1, Exercise 3

Insertion into a Binary Search Tree (BST)

Formative Exercise 2

Using the Binary Search Tree data set and algorithm below, show the steps involved to insert the following values into the tree:

80, 11, 17 and 56

**Binary Search Tree (root has value 44)**

**44**

**43**

**198**

**70**

**14**

**Algorithm**

To insert value v into BST - a recursive algorithm sent starting at the root of the BST

InsertBST( value )

if node is empty then

set node to value v

else

if value v < value stored in node then

if the left child exists then

call InsertBST (v) of left child

else

insert new node with value v as the left child

end if

else

if the right child of root exists then

call InsertBST (v) of right child

else

insert new node with value v as the right child

end if

end if

end if