First Name Last Name Section #

CPSC 221-19a QUIZ Binary Search Trees (BST) and Expression Trees

Algorithm	Balanced BST	Unbalanced BST
Build BST		
Traversal		
Search Min/Max		
Search successor		
Search predecessor		
Insert		
Delete		
BST-based Sort		

1. Complete the table by providing running time in terms of Big-O asymptotic notation. Justify your answer for each algorithm.

2. Use the input 70, 20, 75, 80, 50, 90 to generate a balanced BST using

   (a) AVL algorithm
   (b) Red-Black algorithm
   (c) 2-4 algorithm

3. Create a Skip List data structure using the input from the previous question.

4. Create a binary tree to store the expression $z/(x + y) - d$.

(a) How can you get the postfix form of the expression from the tree?

(b) Write an algorithm to evaluate the expression stored in the tree for given values of z, x, y, d.