

COMP 2270 Project Three

Assigned: March 26, 2020

Due: April 9, 2020*

Write a menu-driven program that will demonstrate the use of Binary Search Trees. The key field in each node is to be a two-character string.

Your program should start with an empty BST. The user should be given the following options:

1) Build a tree from a data file. The data file is to contain key values, one per line, in the order in which they are to be inserted into the tree. Note that this does NOT necessarily mean that they are in order by key values.

NOTE: you must show the tree at each stage of its "growth". The user should press a key each time he/she wants to move to the next step.

2) Insert a specified key into the tree.

3) Delete a specified key from the tree.

4) "Access" (search for) a specified key.

5) "Clear" the tree. That is, reset to an empty tree.

You must **display** the tree after each step. Have the user press a key to return to the menu. Your program must be able to properly display trees of heights up to 4 (5 levels). Note that this display can be in a simple text-based form, but it must reflect the visual structure of the tree. That is, something similar to what you have been seeing in the online notes will be sufficient.

You must use a dynamic (pointer-based) tree structure in this project.

Please submit your source code file(s) via Blackboard course messages.

Due to my current resources, if you are sending multiple source files, please send them one at a time (that is, please do not send a compressed file).

Further requirements or specifications may be given later.

* Even though the due date is April 9, there may be questions related to this project on Test 2 (April 2). Nothing concerning the display portion of the project will be on the exam. I do not consider this to be unfair, since everything you need has been discussed already. I hope you understand and agree.