Assignment 2: Binary Search Tree

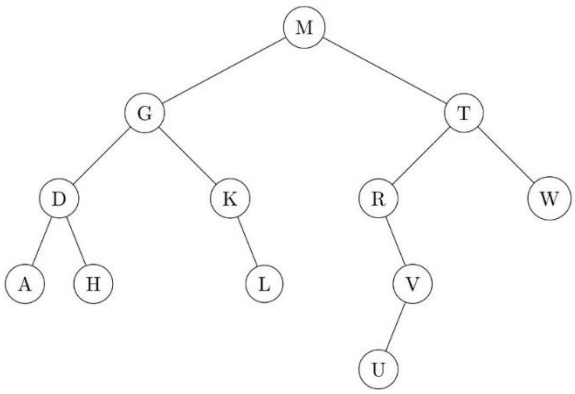
Due: 3:00 pm, Mon., 11/21/2022

Note – Cheating and Plagiarism: Cheating and plagiarism are not permitted in any form and cause certain penalties. The instructor reserves the right to fail culprits.

Deliverable: All your responses to the assignment questions should be included in a single compressed file to be uploaded in the Gannon University (GU) – Blackboard Learn environment.

Question 1 (30 pts.). Use the following binary search tree to answer the questions below.

(1.a) What is the pre-order traversal of this tree?
(1.b) What is the in-order traversal of this tree?
(1.c) What is the post-order traversal of this tree?



Question 2 (20 pts.). Execute the following computations and show them in figure format:

(2.a) Create a binary search tree and insert the following items into it:
{5, 48, 17, 1, 33, 20, 25, 12, 39}.
(2.b) Delete the following items from it: {17, 39}.

Question 3 (50 pts.). Write an executable program in C++ programming language to:

(3.a) Find the Smallest Node in a BST.
(3.b) Determine the Height of a BST.
(3.c) Determine the Number of Nodes.
(3.d) Create the Mirror Image of a BST.
(3.e) Delete a BST.