Practical Assignment

Data Structures and Algorithms Lab (CS 253)

October 26, 2022

Lab Assignment IX

Write a C++ program to:

- Find the largest AVL in a given binary tree
- Let T be a tree with n nodes. Define the lowest common ancestor (LCA) between two nodes v and w as the lowest node in T that has both v and w as descendents (where we allow a node to be a descendent of itself). Given two nodes v and w, write an efficient C++ program for finding the LCA of v and w.

Lab Assignment IX

Write a C++ program to:

- Let T be a tree with n nodes, and, for any node v in T, let dv denote the depth of v in T. The distance between two nodes v and w in T is dv +dw −2du, where u is the LCA u of v and w (as defined in the previous exercise). The diameter of T is the maximum distance between two nodes in T. Write an efficient C++ program for finding the diameter of T.
- To merge two given Binary Search Trees given by the user by accessing their roots.