भारतीय सूचना प्रौद्योगिकी संस्थान गुवाहाटी

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY GUWAHATI

Data Structure Lab, B.Tech 2nd Semester

Assignment 12, 13 and 14

Instructions

1. **No need to submit the assignments.**
2. **The students should practice the questions from the topics covered in class. Remaining questions can be practiced in the next lab.**

Questions

1. Write a program that creates an AVL tree by inserting values taken from the user and deleting values specified by the user. The program gives a menu to the user
   a. Insert an element
   b. Delete a value
   c. Search
   d. Display the tree
   e. Display balance factor of every node
   f. Exit

   Based on the user specified input, the program performs the specified task and returns the menu. The program exits when the user provides option Exit. In the display part, the root node and children of every node should be displayed. There is not need to graphically display the tree.

2. Write a program that takes and graph and then performs depth first traversal and breadth first traversal from the starting node specified by the user.
3. Write a program to find whether two graphs are isomorphic.
4. What a program that stores string values using hashing. The program also allows users to search whether a given string is already present. Use any collision handling method to handle hash collision.