BCSE II – Data Structure and Algorithms Lab

Assignment – 5

(Sent by Prof. JKS)

1. Write a C program to build a complete binary tree using linked list. Take the elements from a file, which is to be given as the command line argument.

2. Write C programs for printing **(i)** inorder, **(ii)** postorder, and **(iii)** preorder traversals of the tree generated in problem no. 1.

3. Write a C program to reconstruct the tree from its inorder and preorder traversals.

4. Write a C program to build a max heap. Take the elements from a file, which is to be given as the command line argument.

5. Write a C program to build a min heap. Take the elements from a file, which is to be given as the command line argument.

6. Write insertion and deletion functions in C for a max heap represented as a linked binary tree. Assume that each node has a parent field as well as the usual left child, right child, and data fields.

7. Write a C program to build a binary search tree (BST) using linked list. Take the elements from a file, which is to be given as the command line argument.

8. Write a C program to print nodes of a BST in descending order.

9. Write a C program to build an AVL tree using linked list. Take the elements from a file, which is to be given as the command line argument.

10. Write a C program to delete a node in an AVL tree, as generated in problem no. 9.