CSY2006 Week 21

Lab Exercises:

1. Write your own version of a class template that will create a binary tree that can hold values of any data type. Demonstrate the class with a driver program.

2. Write a member function, for the Binary Tree template, that counts and returns the number of nodes in the tree. Demonstrate the function in a driver program.

3. Write a member function for the Binary Tree template that counts and returns the number of leaf nodes in the tree. Demonstrate the function in a driver program.

4. Write a member function that returns the height of the tree (number of levels the tree contains).

5. Write a member function that returns the width of the tree (largest number of nodes in the same level).

6. Write a function swapsubtrees that swaps all of the left and right subtrees of a binary tree. Add this function to the binary tree class and test this function.

7. Write a program to test all the operations of a binary tree (preorder, inorder, postorder).

8. Write the definitions of non-recursive inorder, preorder and postorder traversal algorithms for a binary tree and test them in a program.