Lab 06

Binary Tree

Revised by Tran Thanh Tung

1. **Objectives**
    a. Know how, in reality, binary Tree works.
    b. Implementing additional methods to deal with binary tree in Java programming.
2. **Problem statement**
    a. Add a method that counts the elements in a binary tree into the *Tree Class*. Specifically, the method takes no parameters, and returns an integer equal to the number of elements in the tree.
    b. Add a method that computes the height of a binary tree into the *Tree Class*. Specifically, this method has no parameters, and returns an integer equal to the height of the tree.
    c. Add a method that counts a binary tree's leaves tree into the *Tree Class*. Specifically, this method has no parameters, and returns an integer equal to the number of leaves in the tree.
    d. Add a method that determines whether or not a binary tree is fully balanced. This method takes no parameters, and returns a boolean value: true if the tree is fully balanced, and false if it is not.
    e. Define two binary trees to be identical if either both are empty, or their roots are equal, their left subtrees are identical, and their right subtrees are identical. Design a method that determines whether two binary trees are identical *(this method takes a second binary tree as its only parameter, and returns a boolean value: true if the tree receiving the message is identical to the parameter, and false otherwise).*