# Assignment 3

( Lecturer : L. El Aimani)

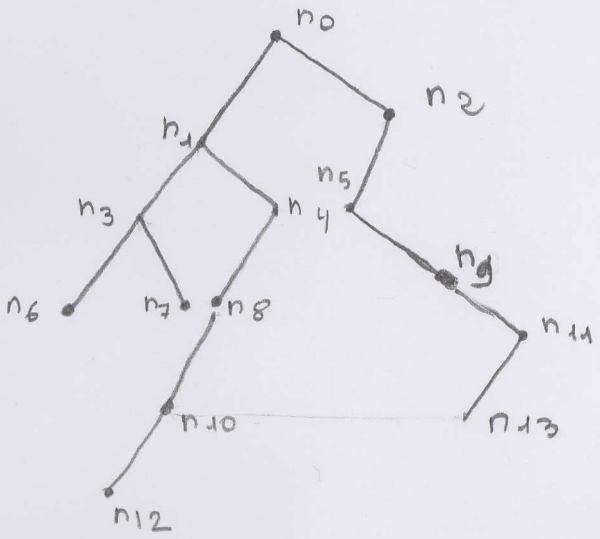
## 1 - Mathematical properties of binary trees :

prove that the internal path length of a binary tree with N internal nodes is at least $N \log \frac{N}{4}$ and at most $\frac{N(N-1)}{2}$ .

hint: Use the fact that the external path of a binary tree whith N internal nodes is $2N$ greater than its internal path length.

## 2 - Tree Traversal :

Perform the preorder, inorder and post order travelsals of the following tree :




## 3 - Implementation

Implement the post order traversal of a binary tree .