Laboratory practice No. 4: Trees

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3) Practice for final project defense presentation

3.1 For representing the directories we used an n-ary tree, which uses Linked Lists for representing the sons of every node.

The searching function has a complexity of O(n) where n represents the number of files we have on the directory.

3.2

3.3 The implementation of exercise 2.1 consists in a recursive algorithm where given a preorder of a binary tree in an array, we compare each node (magnitude) in order to print the nodes in postorder.

3.4 $T(n) = 2*T(n-1) + C$

$T(n) = C*2*2^n$

$O(T(n)) = O(2^n)$

3.5 n: is the number of nodes of the tree (length of the array)

4) Practice for midterms

4.1) a. int izq = altura(raiz.izq) + 1;
b. int der = altura(raiz.der) + 1;

4.2) c

4.3) a. return false;
b. return suma == a.dato;
c. return sumaElCamino(a.izq, suma – a.dato);
d. || sumaElCamino(a.der, suma – a.dato);

4.4) 1. c
2. a
3. d
4. a

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4.5) a. if(toInsert==p.data)
b. if(toInsert > p.data)

4.6) 1. d
2. return 0;
3. if(raiz.hijos.size() == 0)
4.7) 1. a
2. b
4.8) b
4.9) a
4.10) b
4.11) 1. b
2. a
3. a
4.12) 1. i)
2. a
3. d
4.13) 1. suma[e.id] = suma[e.id] + suma[raíz.id];
2. a

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