ESTRUCTURA DE DATOS 1
Código ST0245

Laboratory practice No.4: Trees

Cristian Alexis Giraldo Agudelo
Universidad Eafit
Medellín, Colombia
cagiraldoa@eafit.edu.co

Daniel Alejandro Cifuentes Londoño
Universidad Eafit
Medellín, Colombia
dacifuentl@eafit.edu.co

3) Practice for final project defense presentation

3.1

In this algorithm we use an ArrayList. Each position of the arraylist in turn is an arrayList of Strings that repress a line partitioned by its user, memory it consumes, file / directory name and hierarchy level it has. This hierarchy level tells us if this file or directory is inside another directory or no. The search operation in the worst case has a complexity of O (n2)

3.2

Yes, if we assign an integer to each node in the tree instead of going through the whole tree and comparing each String, we can get an O (Log n). Because every time we asked, reduce considerably the processes number.

3.3

What is done at this point is initially the creation of the class to create the tree and the method to add integers in the correct order.

For the Pre-Order printing, what we do is print the data of the node in which we are and invoke again the method for the left and right Node, all this while the Node is not null.

For Post-Order printing what we proceed to do is initially invoke the method for the left and right nodes and then print the data there.

PhD. Mauricio Toro Bermúdez
Professor | School of Engineering | Informatics and Systems
Email: mtorobe@eafit.edu.co | Office: Building 19 – 627
Phone: (+57) (4) 261 95 00 Ext. 9473

3.4 and 3.5

Method	Complexity
postOrden / preOrden	O log(n)

- In this algorithm n is the number of nodes that must be traversed.

4) Practice for midterms

4.1

A. altura(raiz.izq)+1
B. altura(raiz.der)+1

4.2

A. 3

4.3

A. false
B. suma - (a.dato)
C. a.izq , suma - a.dato
D. a.der, suma - a.dato

4.4

4.4.1 C
4.4.2 C
4.4.3 D
4.4.4 A

PhD. Mauricio Toro Bermúdez
Professor | School of Engineering | Informatics and Systems
Email: mtorobe@eafit.edu.co | Office: Building 19 – 627
Phone: (+57) (4) 261 95 00 Ext. 9473

4.5
b. toInsert>p.dato

4.6

4.6.1
C.3

4.6.2
return 0

4.6.3
!= 0

4.7

4.7.1
a. 0,2,1,7,5,10,13,11,9,4

4.7.2
b. 2

4.8
b. 2

4.9
a. 5,3,6,1,7,4,8,0,2

4.10
a. Si

4.11

4.11.1
b. 2,3,4,0,5,7,6

4.11.2
a. 5

PhD. Mauricio Toro Bermúdez
Professor | School of Engineering | Informatics and Systems
Email: mtorobe@eafit.edu.co | Office: Building 19 – 627
Phone: (+57) (4) 261 95 00 Ext. 9473

4.11.3
a. Si

4.12

4.12.1
i) A=1,B=2,C=3,D=4,E=5,F=6,G=7,H=8,I=9,J=10

4.12.2
b. A,B,C,D,E,F,G,H,I,J

4.12.3
a. O(n)

4.13
4.13.1

raiz.id

4.13.2
d. T(n) = nT(n-1)+c

PhD. Mauricio Toro Bermúdez
Professor | School of Engineering | Informatics and Systems
Email: mtorobe@eafit.edu.co | Office: Building 19 – 627
Phone: (+57) (4) 261 95 00 Ext. 9473

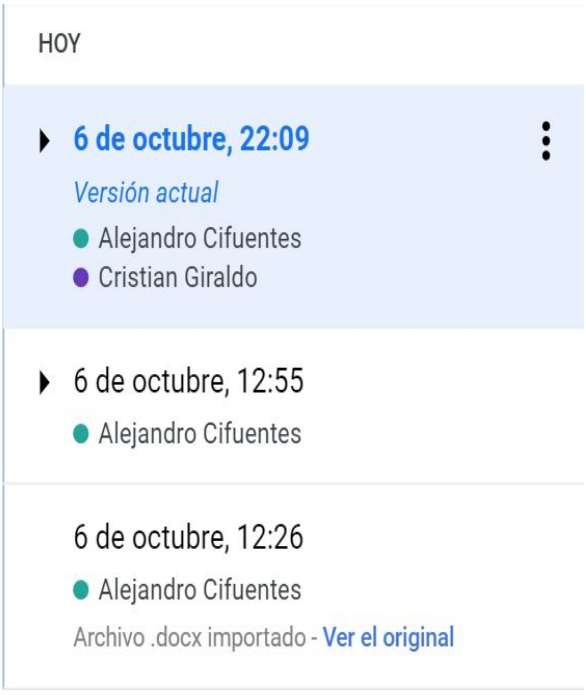
6) Team work and gradual progress (optional)

6.1 Meeting minutes

Member	Date	Work
Daniel Cifuentes	04/10/2019	Exercise 1.1 | 2.1 Incomplete
Cristian Giraldo	04/10/2019	Exercise 2.1 complete
Daniel Cifuentes	05/10/2019	Exercise 1.2 complete
Cristian Giraldo	05/10/2019	Exercise 1.3 complete
Daniel Cifuentes	06/10/2019	Exercise 3 complete
Cristian Giraldo	06/10/2019	Exercise 4 complete

PhD. Mauricio Toro Bermúdez
Professor | School of Engineering | Informatics and Systems
Email: mtorobe@eafit.edu.co | Office: Building 19 – 627
Phone: (+57) (4) 261 95 00 Ext. 9473

History of changes of the report



All parties were assembled on 06/06/2019.

PhD. Mauricio Toro Bermúdez
Professor | School of Engineering | Informatics and Systems
Email: mtorobe@eafit.edu.co | Office: Building 19 – 627
Phone: (+57) (4) 261 95 00 Ext. 9473