

Laboratory practice No. 3: LinkedList and Arrays

Juan David Echeverri Villada
Universidad Eafit
Medellín, Colombia
jdecheverv@eafit.edu.co

Octavio Vásquez Zapata
Universidad Eafit
Medellín, Colombia
ovasquezz@eafit.edu.co

3) Practice for final project defense presentation

3.1

	ArrayList o Vectores	LinkedList
ejercicio 1,1	$O(n^2)$	$O(n)$
ejercicio 1,2	$O(n^2)$	$O(n)$
ejercicio 1,3	$O(n^2)$	$O(n^2)$
ejercicio 1,4	$O(n^2)$	$O(n)$
ejercicio 1,5		
insert 1,5	$O(n)$	$O(1)$
delive 1,5	$O(n)$	$O(n)$
search 1,5	$O(n)$	$O(n)$
ejercicio 1,6	$O(n^2)$	$O(n)$

3.2

Unless we find a square bracket, we will store in an auxiliary variable all the existent data between the square bracket and in the moment, we find the square bracket the program decides in which position should append the data, either the beginning or the end. That is possible thanks to a variable that indicates the append's position (0 to beginning, 1 to end). At the end, we print the list.

3.3

The complexity of the broken keyboard is $O(n^3)$ due to the fact that we concatenate the data of each position of the string in an empty one over and over again in a loop that is executed n times. This increases the complexity significantly

3.4

N is the length of the inserted string

4) Practice for midterms

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



ESTRUCTURA DE DATOS 1
Código ST0245

4.1*b ----- b***4.2***c***4.3***pendiente***4.4**

```
output.append(stack.pop()).append(
') ----- b
```

4.5*a***4.6***a***4.7***faltaaaaaaaaaaaaaa***4.8***d***4.9**4.8.1 *a*4.8.2 *c*4.8.3 *c***4.10**4.9.1 *d*4.9.2 *a*4.8.3 *b***4.11**4.10.1 *b*4.10.2 *b***4.12**4.11.1 *while (! s1.isEmpty())*4.11.2 *s2.push(s1.pop())*4.11.3 *return s2.pop()***4.13**4.13.1 *IV*4.13.2 *I*

4.13

4.13.1 *III*4.13.2 *IV***4.14**4.14 *III***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