

## Laboratory practice No. 3: Linked lists and dynamic vectors.

(As for the arrangement that was made with Mauricio, this is only point 4, the midterm practice for September 22, the rest will eventually be added, and this note, deleted.)

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### 3) Practice for final project defense presentation

	ArrayList o Vectores	Linked List
<b>Ejercicio 1.1</b>	Main $T(n)=n$ $T(n)=O(n)$ $T(n)=O(n)$ EstructuraDatos $T(n)=n+n+n+c$ $T(n)=O(n+n+n+c)$ $T(n)=O(n)$ LectorDatos $T(n)=n^2+n^2$ $T(n)=O(n^2+n^2)$ $T(n)=O(n^2)$	Main $T(n)=n$ $T(n)=O(n)$ $T(n)=O(n)$ EstructuraDatos $T(n)=n^2+2n^2+n+c$ $T(n)=O(n^2+2n^2+n+c)$ $T(n)=O(n^2)$ LectorDatos $T(n)=n^2+n$ $T(n)=O(n^2+n)$ $T(n)=O(n^2)$
<b>Ejercicio 2.1</b>	Linked List: $T(n)=n$ $T(n)=O(n)$ $T(n)=O(n)$ ArrayList: $T(n)=n$ $T(n)=O(n)$ $T(n)=O(n)$	

### 4) Practice for midterms

**4.2 c)**  $O(n)$

**4.4** Line 21 should be: `output.append(stack.pop()).append(' ');`

This is because in the line pop will get rid of the number in the stack, put it in output and add a space after it.

The asymptotic complexity for the previous algorithm is  $O(n^2)$

**4.5a)** [7, 8, 3, 1, 2, 9] This is because the algorithm takes the repeated numbers and gets rid of them.

**4.6b)**  $O(n^2)$

**4.8c)**  $O(n)$  and  $O(1)$

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**ESTRUCTURA DE DATOS 1**  
**Código ST0245**

- 4.10.1** d)  $O(n)$
- 4.10.2** a) 6
- 4.10.3** b)  $O(n)$
- 4.11.1** a)  $O(n^2)$
- 4.11.2** b)  $O(n)$
- 4.12.1** while( $s1.size < 1$ );
- 4.12.2**  $s2.push(s1.pop());$
- 4.12.3** return  $s2$ ;
- 4.13.1**  $O(n^3)$
- 4.13.2**  $O(n^2)$

**5) Recommended reading (optional)**

Mapa conceptual

**6) Team work and gradual progress (optional)**

- 6.1**
- 6.2**
- 6.3**