Laboratory practice No. 3: Linked Lists and Array Lists

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3) Practice for final project defense presentation

3.1

Exercise	LinkedLists	ArrayLists
1.1 (Search #1)	O(n*m)	O(n*m)
1.3	O(n*m) [this exercise must be made using both methods].	

3.2 The writing machine exercise (2.1), works by receiving a string parameter “text”, in order to start running the program the parameter text must have at least one character, then program read the linked list created with the name “list” and three variables, the first two variables were called “start” and “end”, the objective of their assignment was to simulate the keys start and end of the raised problem, and also another variables was created but this one with other kind of work, it was a counter, besides do not forget that variables “start” and “end” are string type and variable “count” is int type and is initialized in zero; so after we created the variables and the linked list, we made two for nested loops with “i” and “j” variables to remove the problem of the keyboard when the user was typing the keys “start” and “end” and those were pressure by themselves, the other part of the implemented program consists on different options that could happen, for example if you look at the instructions for solving the problem, they said that “[” opening square bracket means that “start” key was pressured and “]” closing square bracket means that “end" key was pressured, so one of the cases could be that this instruction was reversed, in that case we had to change the order or change the assignment, that was the objective of one of the if/else if/else conditionals.
At the end of the program we made another for loop but in this case this loop had to print the final sentence or the final phrase without the “errors” or without the square braces that the problem explained, and that is our explanation for that exercise.

3.3 O(n^2) for exercise 2.1 and O(m) for 2.2.
3.4 Calculating the complexity for the exercise 2.1 “n” represents the length of the character string entered; meanwhile “m” represents the length of the block row in 2.2.

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4) Practice for midterms

4.1 *c. They both have the same complexity*
4.2 *c. O(n)*
4.3 ***a)*** *q.size() > 1*
b) >= 1
c) q.remove()
d) q.remove()
4.4 **a)** lista.size()
b) lista.add(auxiliar.pop);
4.5 **1)** auxiliar1.size()>0 , auxiliar2.size()>0
2) personas.offer(edad)
4.6 A. $O(n^3)$
4.7 O(n)
4.8 **4.8.1** a. O(k)
4.8.2 b. 9
4.8.3 c. O(1)
4.9 **4.9.1** d. O(n)
4.9.2 a. 6
4.10 **4.10.1** b. O(max(list)*n)
4.10.2 b. O(n)
4.11 **4.11.1** s1.size()>1
4.11.2 s1.pop()
4.11.3 s1.pop()
4.12 **4.12.1** iv. 0, 2, 4, 6, 8, 10
4.12.2 I. O(1)
4.13 **4.13.1** iii. $O(n^2)$
4.13.2 iii. $O(n^2)$
4.14 iv. 5, 4, 3, 2

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