DATA STRUCTURE 1
Code ST0245

Laboratory No. 3
Linked list and ArrayList

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3)

3.1

ArrayList   LinkedList

O(n^2)   O(n)

This is because the insertion in ArrayList has a O(n) complexity, but it needs a cycle to put all the elements; meanwhile, the insertion in LinkedList has a O(1) complexity.

3.2

2.1-The implementation of exercise works with a recursive method, that compares the actual situation of the text with some base cases. In each iteration, it makes little changes to the text, and adding to the linkedlist the elements that must be in the required order.

2.2-It works with some classes, and array of the attributes of those classes. With the processing of each command, it modify the attributes of objects that must be modified.

3.3

2.1-Bassically, like the algorithm calls itself only one time per iteration, the complexity is O(n+m).

2.2-Since we have maximum two "for each", the complexity is O(n^2).

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3.4

2.1-"n" means the quantity of "[" characters, and "m" means the quantity of "]" characters.

2.2- "n" means the number of elements that are in the list.

4) Simulation of Partial

    4.1 B, A
    4.2 C
    4.3 B
    4.4 C
    4.5 A
    4.6 A

    4.7 D
      4.8.1 B
      4.8.2 C
      4.8.3 C
    4.8 Not in approach
      4.9.1 C
      4.9.2 D
      4.9.3 B
  4.10 Not in approach
      4.10.1 C
      4.10 .1 B
  4.12.1 D
  4.12.2 B
  4.13.1 C
  4.13.2 C
  4.14 D

5) Recommended reading

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