Singly generics linked lists

Create a folder called "Linked List".

In this folder, create a file named "list1.in", with the following structure:

list1.in

3.2 5.8

-9.10 3.33

18.12 13.55

19.22 15.18

18.22 15.24

19.18 18.19

-33.5 19.22

17.32 -15.22

19.22 -18.15

10.34 19.23

8.38 9.55

Remark. The structure of the list1.in file is an example of a list that could appear in this requirement, in other words, list1.in has restrictions that will be described below, and this is a concrete case for testing the algorithm. The same remark applies to the structure of the list2.in file in the example below.

Create a file "list2.in" with the following structure:

list2.in

3.2

6.7

18.3

8.22

7.19

2.22

15.18

1. Implement a C program in which you will store in a list the data from "list1.in", line by line, where the node of this list will contain 2 real numbers representing the coordinates on the Cartesian system, these coordinates being on a line of the respective file. Implement the method by which points that are less than 21 units away from the origin of the coordinate system will be deleted from the list, and the node with the maximum distance from the origin will be remembered. **(2 points)**

2. Create a second list in which you will store the data from "list2.in", line by line, where the node of this list will contain 1 real number. Implement the method by which, after each node greater than 10, a new node representing the double value of the current node will be inserted into this list, and in the end, the node with the smallest value will be remembered. **(2 points)**

3. Reverse these 2 lists using the function for reversing a singly linked list. **(2 points)**

4. Display the first list in the "list1.out" file and the second list in the "list2.out" file. **(2 points)**

5. In the console, display the arithmetic mean between the values of the node with the maximum value remembered in the first list and the node with the minimum value remembered in the second list. **(2 points)**

According to the given example, we will have:

list1.out

10.34 19.23

19.22 -18.15

17.32 -15.22

-33.5 19.22

19.18 18.19

18.22 15.24

19.22 15.18

18.12 13.55

list2.out

30.36

15.18

2.22

7.19

8.22

36.6

18.3

6.7

3.2

stdout

20.91