

# Partition Linked List

input: 5

original list:

3 8 5 10 2 1

expected output

3 2 1 | 8 5 2 1

everything that is lower than the input goes to the start of the list.

we can create 2 LL and then join it.

input: 5

temp

small  
head

3

big head

8

5 10 2 1

8 5 10 2 1

8 5 10

to remove the 2 we have to point 10 to 1

1

do it with the "previous approach" where you always work on NEXT so you can do NEXT → NEXT on the temp

8 5 10

and point 3 to 2 and null

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GOAL:

$x = 5$  SMALL:  $\leftarrow x$

REMOVE  
ALL SMALL

BIG HEAD: is the first temp bigger than  $x$   
✓ Denotes the SMALL TAIL

3 8 5 10 2 1

3 **8** 5 10 2 1  
BIG HEAD

3 8 **5** 10 2 1

3 8 5 **10** 2 1

Next iteration  
don't change  
Temp

points to 1

which is the  
NEXT of NEXT

3 8 5 **10** 2 1

3 8 5 **10** 2 1

→ Points to NULL  
because there's no NEXT

3 8 5 **10** 2 1

No more NEXT  
so we stop

3 8 5 10 2 1

No Luck I gave up and watched an explanation.

my code and approach worked for like 90% of the cases but not all.

current  
just iterate normally  
do not modify it.  
point current to small  
or big prev next

X=5

create two dummy HEAD  
prev

SMALL <sup>prev</sup>  $\textcircled{O} \rightarrow 3 \xleftarrow{2} \xleftarrow{1}$  set SMALL prev NEXT to BIG DUMMY next  
BIG <sup>prev</sup>  $\textcircled{O} \rightarrow 8 \xleftarrow{5} \xleftarrow{10} \Delta$  to merge these new lists

{ at this moment 10 next points to 2. Set BIG prev to NULL to define it as our new TAIL

3 8 5 10 2 1

3 8 5 10 2 1

3 8 5 10 2 1

3 8 5 10 2 1

3 8 5 10 2 1

→ the function returns SMALL DUMMY next which skips the  $\textcircled{O}$

3 8 5 10 2 1