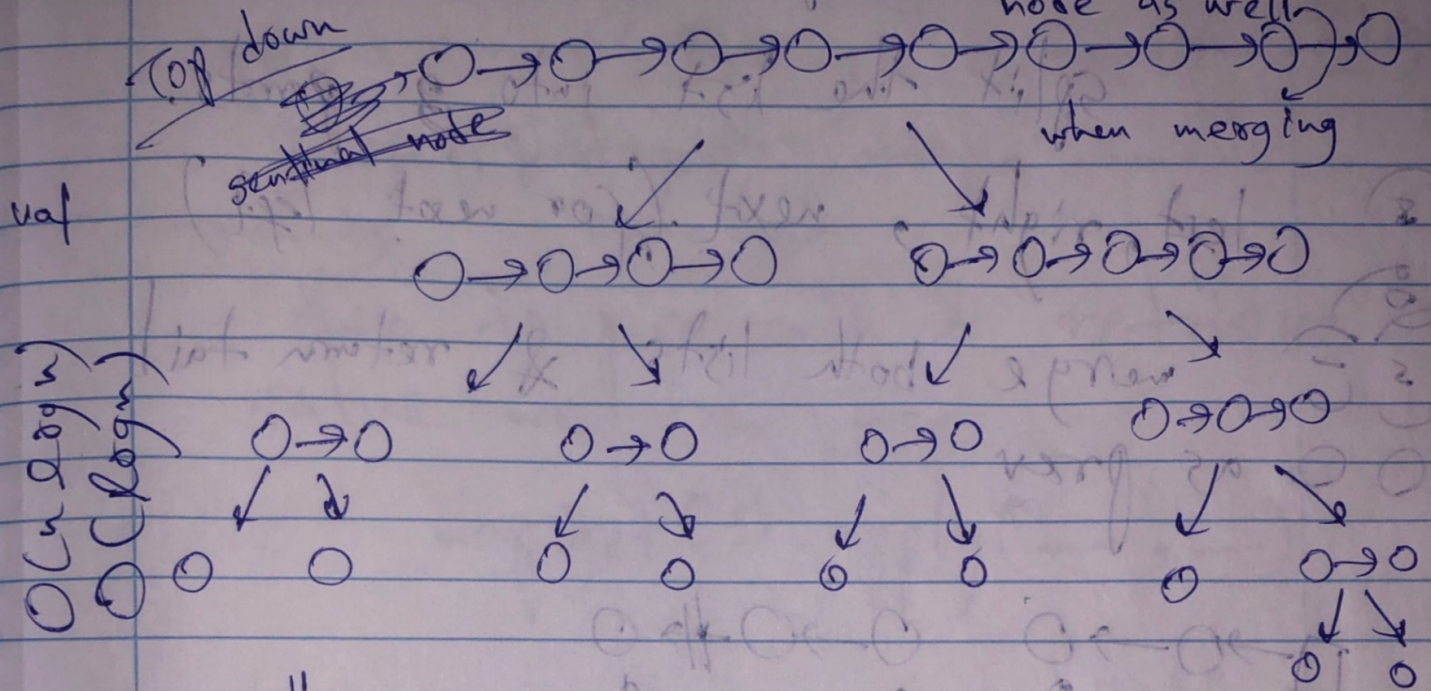


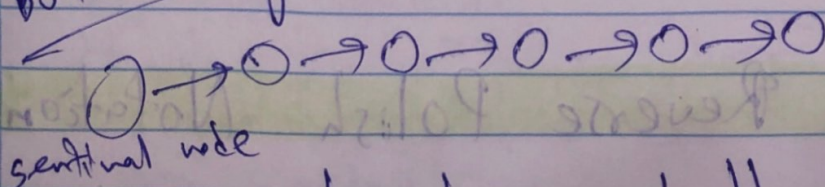
## \* Sort List

to achieve  $O(n \log n)$  we can use merge sort. To divide to 2 lists, we can use 2 pointers as usual. In addition we can use a sentinel node as well.



then we can merge each list by comparing each list Node. As this is a recursive method, requires  $O(\log n)$  space for call stack.

Bottom up



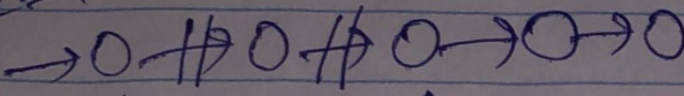
each time double the node count we are using till it exceeds the # of Nodes.



No: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

size = 1



sentinal node

curr

right

prev

left

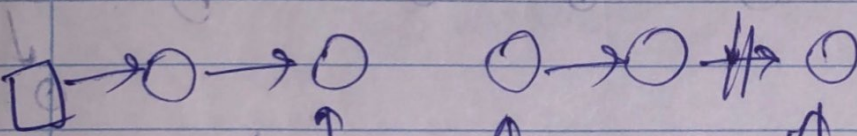
next curr  
next prev

split the list into 2 parts:

left, right, next. (for next left)

merge both lists & return tail

as prev



prev

left

right

each node count, iterate from left to right.