Merge Sort Linked List

```
class Solution(object):
  def mergeSort(self, head):
    """
    input: ListNode head
    return: ListNode
    """
    # write your solution here
    if not head or not head.next:
      return head
    one, two = self.SplitInHalf(head)
    one = self.mergeSort(one)
    two = self.mergeSort(two)
    return self.merge(one, two)

  def SplitInHalf(self, head):
    slow, fast = head, head.next
    while fast and fast.next:
      slow = slow.next
      fast = fast.next.next
    next = slow.next
    slow.next = None
    return head, next

  def merge(self, one, two):
    prev = ListNode(None)
    curr = prev
    while one and two:
      if one.val < two.val:
        curr.next = one
        one = one.next
      else:
        curr.next = two
        two = two.next
      curr = curr.next
    if one:
      curr.next = one
    if two:
      curr.next = two
    return prev.next
```