Programming Assignment 7-3

In this exercise you will write a recursive method `merge(list1, list2)` for merging two sorted linked lists of Integers.

You are given as input two sorted linked lists, list1 and list2. Output for your method is another linked list that contains all the elements in list1 and list2, now in sorted order, obtained from merging the two lists.

Example:

list1 = [2, 5, 8, 11] list2 = [1,3,6] output: [1,2,3,5,6, 8, 11]

Use the following recursive strategy:

1. Instantiate an output linked list – call it list3.
2. Obtain the zeroth element of list1 and call it first1; obtain the zeroth element of list2 and call it first2.
3. If first1 < first2, remove first1 from list1, add it to list3, and recursively merge list1, list2. If first2 < first1, remove first2 from list2, add it to list3, and recursively merge list1, list2. Add the recursively merged lists to list3.