### **Question 1 [15 Points]**

In this problem, you are given a singly linked list of integers. Your task is to design a function **is\_sorted( head )** that checks whether the first half or the last half of the linked list is sorted in ascending order. You are given the head of a singly linked list. Each node in the list contains an integer value. Possible three cases are given below, don’t need to implement any other condition. Assume that the size of the given linked list is always odd and minimum size is 5. If first half is sorted the return First, last half sorted the return last, otherwise return None. Ignore the middle value.

**[Hint. You can create separate helper function(s), Do not need to write the driver code, or Node class]**

| **Sample Input:** | **Sample Output:** | **Explanation:** |
| --- | --- | --- |
| **1 -> 2 -> 5 -> 9 -> 3** | **First** | **Middle value is 5, the first half values are 1,2. Sorted in ascending order, hence First.** |
| **8-> 2-> 7-> 9-> 5-> 6-> 7** | **Last** | **Middle value 4. Last nodes are 5->6->7 . Sorted in ascending, hence Last.** |
| **10 -> 1 -> 5 -> 6 -> 2** | **None** | **Middle value 5. Not the first half, nor the 2nd half is sorted. Hence, None.** |