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Question 10

For question 10, I had to create a linked list and insert random numbers into it with a given size of k. For this question, I had to separate the linked list into all odd numbers first, then the even numbers. After that I had to sort both, odd numbers and even numbers, while keeping them separated. To achieve this, I had to implement bubble sort, where I had to swap an element with the next provided the given conditions. Firstly, I began by creating a function, oddFirst(), where I used a bubble sort to bring all the odd numbers to the front of the linked list. I simply gave the condition: If the current element is even, and the next element is odd, continue. After the odd numbers were separated, I proceeded to sort the odd numbers first using the function sortOdd(). However, I had to be careful not to include the even numbers when I sort so I included a condition for this function as well, where I had to test whether the next node is odd to continue the swap. Then I had to sort the even numbers in sortEven(), given the odd numbers should be left as they are since they are already sorted. For this function I had to include the condition: If the current node and the next node is even, continue. This condition did not change the odd numbers, therefore successfully sorting both sections of the linked list.