



## **Linked List Assignment**

### **Batch: Crux**

1. Implement code to swap two elements of a Linked List.
2. Eliminate duplicates from a sorted linked list
3. Merge two sorted linked lists into one.
4. Find midpoint of a Linked List
5. Implement Bubble Sort, Selection Sort, Insertion Sort and Merge Sort using recursion.
6. Implement Bubble Sort, Selection Sort, Insertion Sort without using recursion.
7. Check if a linked list is a palindrome
8. Reverse Linked List
  - a. Using recursion
  - b. Without using recursion
9. Arrange elements in a Linked List such that all even numbers are placed after odd numbers.
10. Print a given linked list in reverse order. Tail first. You can't change any pointer in the linked list.
11. Append the last n elements of a linked list to the front.  
e.g. for  $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 6 \rightarrow \text{null}$  and  $n = 2$  return  $5 \rightarrow 6 \rightarrow 1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow \text{null}$
12. Implement  $k\text{Reverse}(\text{int } k)$  i.e. you reverse first K elements then reverse next K elements and join the linked list and so on.  
 $3 \rightarrow 4 \rightarrow 5 \rightarrow 2 \rightarrow 6 \rightarrow 1 \rightarrow 9$  for  $k\text{reverse}(3)$  becomes  $5 \rightarrow 4 \rightarrow 3 \rightarrow 1 \rightarrow 6 \rightarrow 2 \rightarrow 9$