

Linked List Practice Questions

1. Write an instance method in the **Linked List** class which returns **true** if the list is sorted in ascending order and **false**, otherwise.
2. Write an instance method to reverse the nodes of a linked list by creating a new list. The method returns the newly-created list.
3. Write a method to sort a linked list of integers as follows
 - a. Find the largest value in the list.
 - b. Delete it from its position and insert it at the head of the list.
 - c. Starting from what is now the second element, repeat a. and b.
 - d. Starting from what is now the third element, repeat a. and b.Continue until the list is sorted.
4. The characters of a string are held on a linked list, one character per node
 - a. Write a method which, given a pointer to a string and two characters, c1 and c2, replaces all occurrences of c1 with c2.
 - b. Write a function which, given a pointer to a string and a character, c, deletes all occurrences of c from the string. Return a pointer to the modified string.
 - c. Write a function which creates a new list consisting of the letters only in the given list, all converted to lowercase and stored in alphabetical order. Return a pointer to the new list.
 - d. Write a function which, given pointers to two strings, return true if the first is a substring of the other and false, otherwise.
5. Write a function which, given an integer n, converts n to binary, and stores each bit in one node of a linked list with the least significant bit at the head of the list and the most significant bit at the tail. For example, given 13, the bits are stored in the order 1 0 1 1, from head to tail. Return a pointer to the head of the list.
6. Write a function which, given a pointer to a linked list of bits stored as in 6, traverses the list once and returns the decimal equivalent of the binary number.