Question #20
Shift Linked List

Difficulty Hard   Category :Linked Lists

Write a function that takes in the head of a Singly Linked List and an integer k , shifts the list in place (i.e., doesn't create a brand new list) by k positions, and returns its new head. Shifting a Linked List means moving its nodes forward or backward and wrapping them around the list where appropriate. For example, shifting a Linked List forward by one position would make its tail become the new head of the linked list. Whether nodes are moved forward or backward is determined by whether k is positive or negative. Each LinkedList node has an integer value as well as a next node pointing to the next node in the list or to None / null if it's the tail of the list. You can assume that the input Linked List will always have at least one node; in other words, the head will never be None / null .

Sample Input
head = 0 -> 1 -> 2 -> 3 -> 4 -> 5 // the head node with value 0   k = 2

Sample Output
4 -> 5 -> 0 -> 1 -> 2 -> 3 // the new head node with value 4

Good luck!

Fatih