

Prompt	Scratchpad	Our Solution(s)	Video Explanation	Run Code
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Solution 1

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1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 using namespace std;
4
5 ▼ class LinkedList {
6     public:
7         int value;
8         LinkedList *next;
9
10 ▼ LinkedList(int value) {
11     this->value = value;
12     next = NULL;
13 }
14 };
15
16 // O(n) time | O(1) space - where n is the number of nodes in the Linked List
17 ▼ LinkedList *shiftLinkedList(LinkedList *head, int k) {
18     int listLength = 1;
19     LinkedList *listTail = head;
20 ▼ while (listTail->next != NULL) {
21     listTail = listTail->next;
22     listLength++;
23 }
24
25 int offset = abs(k) % listLength;
26 if (offset == 0)
27     return head;
28 int newTailPosition = k > 0 ? listLength - offset : offset;
29 LinkedList *newTail = head;
30 ▼ for (int i = 1; i < newTailPosition; i++) {
31     newTail = newTail->next;
32 }
33
34 LinkedList *newHead = newTail->next;
35 newTail->next = NULL;
36 listTail->next = head;
37 return newHead;
38 }
39
```

