

❖ Rotate List:

- Explanation:

The program rotates a linked list to the right by k places, where each node in the list represents a digit. It first determines the length of the list, then adjusts the value of k to prevent unnecessary rotations. Finally, it rearranges the nodes by updating the pointers to form the new rotated list and returns the new head.

- Time Complexity and Space Complexity:

- $O(n)$ $O(1)$

- Flowchart:

[Start]

|

v

[Input number of nodes n]

|

v

[Input values for the linked list]

|

v

[Create linked list from input values]

|

v

[Input number of places to rotate k]

|

v

[Is head null OR head.next null OR $k = 0$?] -- Yes --

> [Return head]

| No

```

      v
[Set length = 1; Traverse list to find length]
      |
      v
[Connect tail to head to form circular linked list]
      |
      v
[Set k = k % length]
      |
      v
[Is k = 0?] -- Yes --> [Break circular connection;
return head]
      | No
      v
[Traverse to find new tail at position length - k - 1]
      |
      v
[Set new head = newTail.next]
      |
      v
[Set newTail.next = null]
      |
      v
[Return new head]
      |
      v
[End]

```