

Reverse both parts

Given a linked list and a number k. You have to reverse first part of linked list with k nodes and the second part with n-k nodes.

Example 1:

Input: 1 -> 2 -> 3 -> 4 -> 5

k = 2

Output: 2 -> 1 -> 5 -> 4 -> 3

Explanation: As k = 2 , so the first part 2 nodes: 1 -> 2 and the second part with 3 nodes: 3 -> 4 -> 5. Now after reversing the first part: 2 -> 1 and the second part: 5 -> 4 -> 3. So the output is: 2 -> 1 -> 5 -> 4 -> 3

Example 2:

Input: 1 -> 2 -> 4 -> 3

k = 3

Output: 4 -> 2 -> 1 -> 3

Explanation: As k = 3 , so the first part 3 nodes: 4 -> 2 -> 1 and the second part with 1 nodes: 3. Now after reversing the first part: 1 -> 2 -> 4 and the second part: 3. So the output is: 1 -> 2 -> 4 -> 3

Your Task:

You don't need to read input or print anything. Your task is to complete the function **reverse()** which takes head node of the linked list and a integer k as input parameters and returns head node of the linked list after reversing both parts.

Constraints:

$$1 \leq N \leq 10^5$$

$$1 \leq k < N$$

Expected Time Complexity: $O(N)$ **Expected Space Complexity: $O(1)$**