

# Reverse Nodes in k-Group

Try to solve the Reverse Nodes in k-Group problem.

We'll cover the following

- Statement
- Examples
- Understand the problem
- Figure it out!
- Try it yourself

## Statement

The task is to reverse the nodes in groups of  $k$  in a given linked list, where  $k$  is a positive integer, and at most the length of the linked list. If any remaining nodes are not part of a group of  $k$ , they should remain in their original order.

It is not allowed to change the values of the nodes in the linked list. Only the order of the nodes can be modified.

**Note:** Use only  $O(1)$  extra memory space.

### Constraints:

Let  $n$  be the number of nodes in a linked list.

- $1 \leq k \leq n \leq 500$
- $0 \leq \text{Node.value} \leq 1000$

## Examples

**Sample example 1**

**Input**

k

3

head

1

2

3

4

5

NULL

Group 1

**Output**

head

3

2

1

4

5

NULL

1 of 2

## Understand the problem

Let's take a moment to make sure you've correctly understood the problem. The quiz below helps you check if you're solving the correct problem:

Reverse Nodes in k-Group

1

What is the output if the following head of the linked list and value of  $k$  are given as input?  
  
 head  $\rightarrow$  8  $\rightarrow$  0  $\rightarrow$  6  $\rightarrow$  1  $\rightarrow$  0  $\rightarrow$  7  $\rightarrow$  8  $\rightarrow$  7  $\rightarrow$  5  $\rightarrow$  3  $\rightarrow$  5  $\rightarrow$  2  $\rightarrow$  4  $\rightarrow$  9  $\rightarrow$  NULL  
  
 $k = 3$

A) head  $\rightarrow$  1  $\rightarrow$  0  $\rightarrow$  7  $\rightarrow$  8  $\rightarrow$  0  $\rightarrow$  6  $\rightarrow$  3  $\rightarrow$  5  $\rightarrow$  2  $\rightarrow$  8  $\rightarrow$  7  $\rightarrow$  5  $\rightarrow$  4  $\rightarrow$  9  $\rightarrow$  NULL

B) head  $\rightarrow$  7  $\rightarrow$  0  $\rightarrow$  1  $\rightarrow$  6  $\rightarrow$  0  $\rightarrow$  8  $\rightarrow$  2  $\rightarrow$  5  $\rightarrow$  3  $\rightarrow$  5  $\rightarrow$  7  $\rightarrow$  8  $\rightarrow$  4  $\rightarrow$  9  $\rightarrow$  NULL

C) head  $\rightarrow$  6  $\rightarrow$  0  $\rightarrow$  8  $\rightarrow$  7  $\rightarrow$  0  $\rightarrow$  1  $\rightarrow$  5  $\rightarrow$  7  $\rightarrow$  8  $\rightarrow$  2  $\rightarrow$  5  $\rightarrow$  3  $\rightarrow$  4  $\rightarrow$  9  $\rightarrow$  NULL

D) head  $\rightarrow$  8  $\rightarrow$  0  $\rightarrow$  0  $\rightarrow$  1  $\rightarrow$  6  $\rightarrow$  7  $\rightarrow$  8  $\rightarrow$  7  $\rightarrow$  5  $\rightarrow$  3  $\rightarrow$  5  $\rightarrow$  9  $\rightarrow$  4  $\rightarrow$  2  $\rightarrow$  NULL

Submit Answer

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Question 1 of 4  
0 attempted

>

Reset Quiz ↺

## Figure it out!

We have a game for you to play. Rearrange the logical building blocks to develop a clearer understanding of how to solve this problem.

Drag and drop the cards to rearrange them in the correct sequence.

Use a pointer to try to traverse  $k$  nodes in the linked list.

If the pointer successfully traverses a group of  $k$  nodes, reverse this group.

?

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🔄

Reconnect the reversed group of  $k$  nodes with the rest of the linked list.

Repeat the process till less than  $k$  or no nodes are left in the linked list.

Reset

Show Solution

Submit

## Try it yourself

Implement your solution in `ReverseLinkedList.java` in the following coding playground. You'll need the provided supporting code to implement your solution. We've provided some useful code templates that you may build on to solve this problem.



ReverseKGroups.java

LinkedListNode.java

LinkedList.java

LinkedListTraversal.java

LinkedListReversal.java

```
1 import java.util.*;
2 public class ReverseKGroups{
3     public static LinkedListNode reverseKGroups(LinkedListNode head, int k) {
4         // Write your code here
5         // Tip: You may use some of the code templates provided
6         // in the support files
7         return head;
8     }
9 }
```

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Submit

Test Cases Results

Case 1

Case 2

Case 3

Input #1

[1,2,3,4,5]

Input #2

2

Reverse Nodes in k-Group

← Back

Next →

Solution: Reverse Link...

Solution: Reverse Nod...

✓ Mark as Completed



