

## Partition a Linked List around a given value

Given a linked list and a value  $x$ , partition it such that all nodes less than  $x$  come first, then all nodes with value equal to  $x$  and finally nodes with value greater than or equal to  $x$ . The original relative order of the nodes in each of the three partitions should be preserved. The partition must work in-place.

### Example 1:

**Input:**

1->4->3->2->5->2->3,

$x = 3$

**Output:**

1->2->2->3->3->4->5

**Explanation:**

Nodes with value less than 3 come first, then equal to 3 and then greater than 3.

### Example 2:

**Input:**

1->4->2->10

$x = 3$

**Output:**

1->2->4->10

**Explanation:**

Nodes with value less than 3 come first, then equal to 3 and then greater than 3.

### Your task:

You don't need to read input or print anything. Your task is to complete the function **partition()** which takes the head of the linked list and an integer  $x$  as input, and returns the head of the modified linked list after arranging the values according to  $x$ .

**Expected time complexity :**  $O(n)$

**Expected Auxiliary Space:**  $O(n)$

**Constraints:** $1 \leq N \leq 10^5$  $1 \leq k \leq 10^5$ 

Code : <https://sapphireengine.com/@/5xxd20>

[https://practice.geeksforgeeks.org/problems/partition-a-linked-list-around-a-given-value/1/?category\[\]=Linked%20List&category\[\]=Linked%20List&difficulty\[\]=1&difficulty\[\]=2&page=1&query=category\[\]Linked%20Listdifficulty\[\]1difficulty\[\]2page1category\[\]Linked%20List#](https://practice.geeksforgeeks.org/problems/partition-a-linked-list-around-a-given-value/1/?category[]=Linked%20List&category[]=Linked%20List&difficulty[]=1&difficulty[]=2&page=1&query=category[]Linked%20Listdifficulty[]1difficulty[]2page1category[]Linked%20List#)