

## Reorder List

Medium

Given a singly linked list  $L: L_0 \rightarrow L_1 \rightarrow \dots \rightarrow L_{n-1} \rightarrow L_n$ ,  
reorder it to:  $L_0 \rightarrow L_n \rightarrow L_1 \rightarrow L_{n-1} \rightarrow L_2 \rightarrow L_{n-2} \rightarrow \dots$

You may **not** modify the values in the list's nodes, only nodes itself may be changed.

### Example 1:

Given 1->2->3->4, reorder it to 1->4->2->3.

### Example 2:

Given 1->2->3->4->5, reorder it to 1->5->2->4->3.