LINKED LIST

https://leetcode.com/problems/swap-nodes-in-pairs

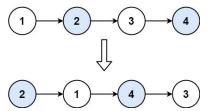
Problem

Given a linked list, swap every two adjacent nodes and return its head. You must solve the problem without modifying the values in the list's nodes (i.e., only nodes themselves may be changed.)

Example 1

Input: head = [1,2,3,4]

Output: [2,1,4,3]



Example 2

Input: head = []

Output: []

Example 3:

Example 3

Input: head = [1]

Output: [1]

Solution – Swap Nodes in Pair

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```
ListNode* swapPairs(ListNode* head) {
   if (head == NULL || head->next == NULL) {
        return head;
    ListNode *node = head;
    ListNode *prev = NULL;
    head = head->next;
    while (node && node->next) {
        ListNode *second = node->next;
        ListNode *next_pair = second->next;
        second->next = node;
        node->next = next_pair;
        if (prev) {
            prev->next = second;
        prev = node;
        node = next_pair;
    return head;
```

Solution (recursive) – Swap Nodes in Pair

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```
ListNode* swapPairs(ListNode* head) {
   if(!head || !head->next)
       return head;
   ListNode* newHead = head->next;
   head->next = swapPairs(head->next->next);
   newHead->next = head;
   return newHead;
}
```