203 移除链表元素

Label：链表

给你一个链表的头节点 head 和一个整数 val ，请你删除链表中所有满足 Node.val == val 的节点，并返回 新的头节点 。

示例：

输入：head = [1,2,6,3,4,5,6], val = 6
输出：[1,2,3,4,5]
输入：head = [], val = 1
输出：[]
输入：head = [7,7,7,7], val = 7
输出：[]

- 数组存储

```java
class Solution {
    public ListNode removeElements(ListNode head, int val) {
        if (head == null) return head;

        List<ListNode> list = new ArrayList<>();
        ListNode curr = head;

        while (curr != null) {
            if (curr.val != val) list.add(curr);
            curr = curr.next;
        }

        // 新链表
        ListNode newHead = new ListNode(0);
        curr = newHead;
        for (ListNode temp : list) {
            curr.next = temp;
            curr = curr.next;
        }
        if (curr != null) curr.next = null;  // 防止出现循环链表

        return newHead.next;
    }
}
```

- 双指针

```
class Solution {
    public ListNode removeElements(ListNode head, int val) {
        if (head == null) return head;

        ListNode newHead = new ListNode(0);
        newHead.next = head;  // 先在 原head 之前加上一个头指针（经常这样）

        ListNode curr = head;
        ListNode pre = newHead; // 定义双指针

        while (curr != null) {
            if (curr.val == val) {
                pre.next = curr.next;
            }else {
                pre = curr;
            }
            curr = curr.next;
        }
        return newHead.next; // 返回虚拟头的下一个节点
    }
}
```