

LeetCode Bootcamp Week 3 Submission
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Question1: Palindrome Linked List

Code:

```
class Solution(object):
    def isPalindrome(self, head):
        if not head or not head.next:
            return True

        if head.next and not head.next.next:
            return head.val == head.next.val

        slow = fast = head
        while fast and fast.next:
            slow = slow.next
            fast = fast.next.next

        prev = None
        current = slow
        while current:
            next_temp = current.next
            current.next = prev
            prev = current
            current = next_temp

        first = head
        second = prev
        while second:
            if first.val != second.val:
                return False
            first = first.next
            second = second.next

        return True
```

Question2: Reorder List

Code:

```
class Solution(object):
    def reorderList(self, head):
        if not head or not head.next:
            return

        slow = fast = head
        while fast.next and fast.next.next:
            slow = slow.next
            fast = fast.next.next

        second_half = slow.next
        slow.next = None

        prev = None
        current = second_half
        while current:
            next_temp = current.next
            current.next = prev
            prev = current
            current = next_temp
        second_half = prev

        first = head
        second = second_half

        while second:
            temp1 = first.next
            temp2 = second.next

            first.next = second
            second.next = temp1

            first = temp1
            second = temp2
```

Question3: Set Matrix Zeroes

Code:

```
class Solution(object):
    def setZeroes(self, matrix):
        m = len(matrix)
        n = len(matrix[0])

        first_row_has_zero = False
        first_col_has_zero = False

        for j in range(n):
            if matrix[0][j] == 0:
                first_row_has_zero = True
                break

        for i in range(m):
            if matrix[i][0] == 0:
                first_col_has_zero = True
                break

        for i in range(1, m):
            for j in range(1, n):
                if matrix[i][j] == 0:
                    matrix[i][0] = 0
                    matrix[0][j] = 0

        for i in range(1, m):
            for j in range(1, n):
                if matrix[i][0] == 0 or matrix[0][j] == 0:
                    matrix[i][j] = 0

        if first_row_has_zero:
            for j in range(n):
                matrix[0][j] = 0

        if first_col_has_zero:
            for i in range(m):
                matrix[i][0] = 0
```