Program 46. Sort Colors Given an array nums with n objects colored red, white, or blue, sort them in-place so that objects of the same color are adjacent, with the colors in the order red, white, and blue. We will use the integers 0, 1, and 2 to represent the color red, white, and blue, respectively. You must solve this problem without using the library's sort function. Example 1: Input: nums = [2,0,2,1,1,0] Output: [0,0,1,1,2,2]

PROGRAM:

```
def sortColors(nums):
    low, mid, high = 0, 0, len(nums) - 1
    while mid <= high:
        if nums[mid] == 0:
            nums[low], nums[mid] = nums[mid], nums[low]
            low, mid = low + 1, mid + 1
        elif nums[mid] == 1:
            mid += 1
        else:
            nums[mid], nums[high] = nums[high], nums[mid]
            high -= 1

# Example usage
nums = [2, 0, 2, 1, 1, 0]
sortColors(nums)
print(nums)  # Output: [0, 0, 1, 1, 2, 2]
```

# Output::

```
"C:\Program Files\Python312\python.exe" "C:\Work Space\DAA COADS.PYTHON\program 46.py"
[0, 0, 1, 1, 2, 2]

Process finished with exit code 0
```

**Time complexity:**
**O(n)**