Algorithms and structures programming

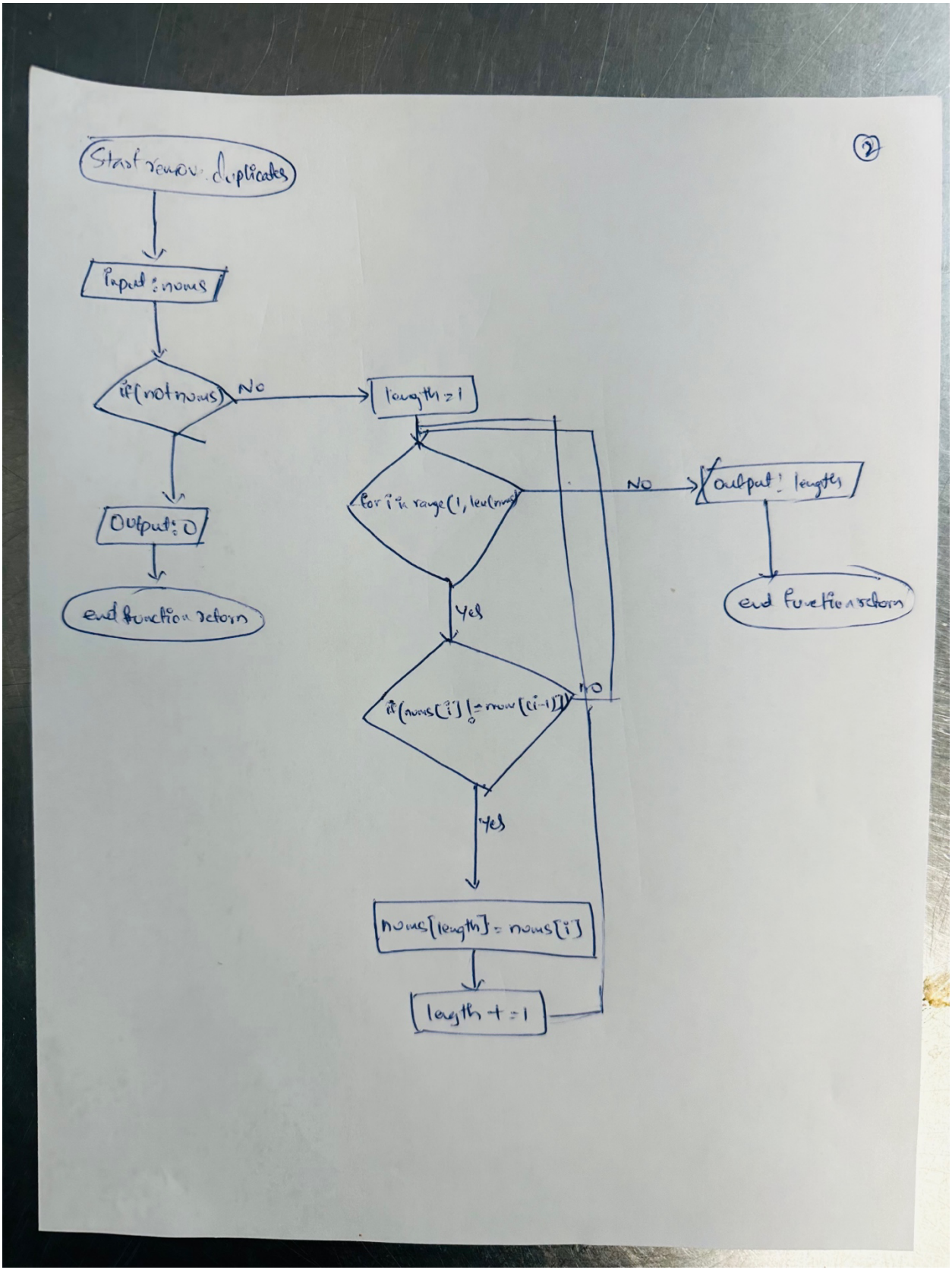
Rakesh Kasha

19695

Python program:

```python
def remove_duplicates(nums):


    length = 1

    for i in range(1, len(nums)):
        if nums[i] != nums[i - 1]:
            nums[length] = nums[i]
            length += 1

    return length

# Test case
nums = [1, 1, 2]
result = remove_duplicates(nums)

print("Input: nums =", nums)
print("Output:", result, ", nums =", nums[:result])
```

Flowchart:


Start remove_duplicates
Input : nums
if(not nums)
No
Output: 0
end function return
length = 1
for i in range(1, len(nums)
No
output : length
end function return
Yes
if(nums[i] != nums[i-1])
No
Yes
nums[length] = nums[i]
length += 1

Trace Table:

Step	Nums	Length	i	Num[i] !=num[i-1]	nums[length] = nums[i]	screen
	[1,1,2]					
		1				
			1			
				TRUE		
					TRUE	
		1+1				
			2			
				TRUE		
					TRUE	
						2,[1,2]