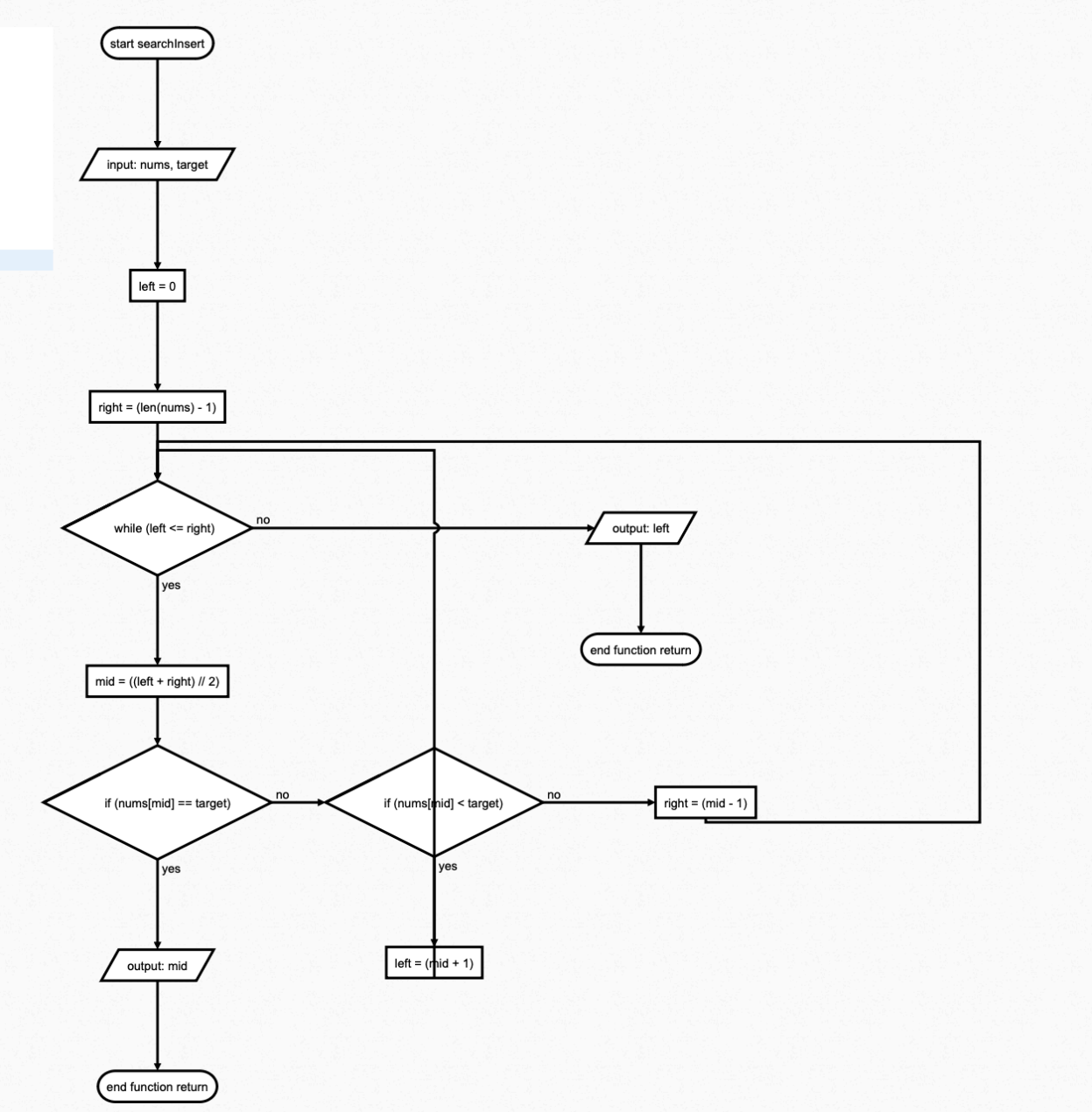
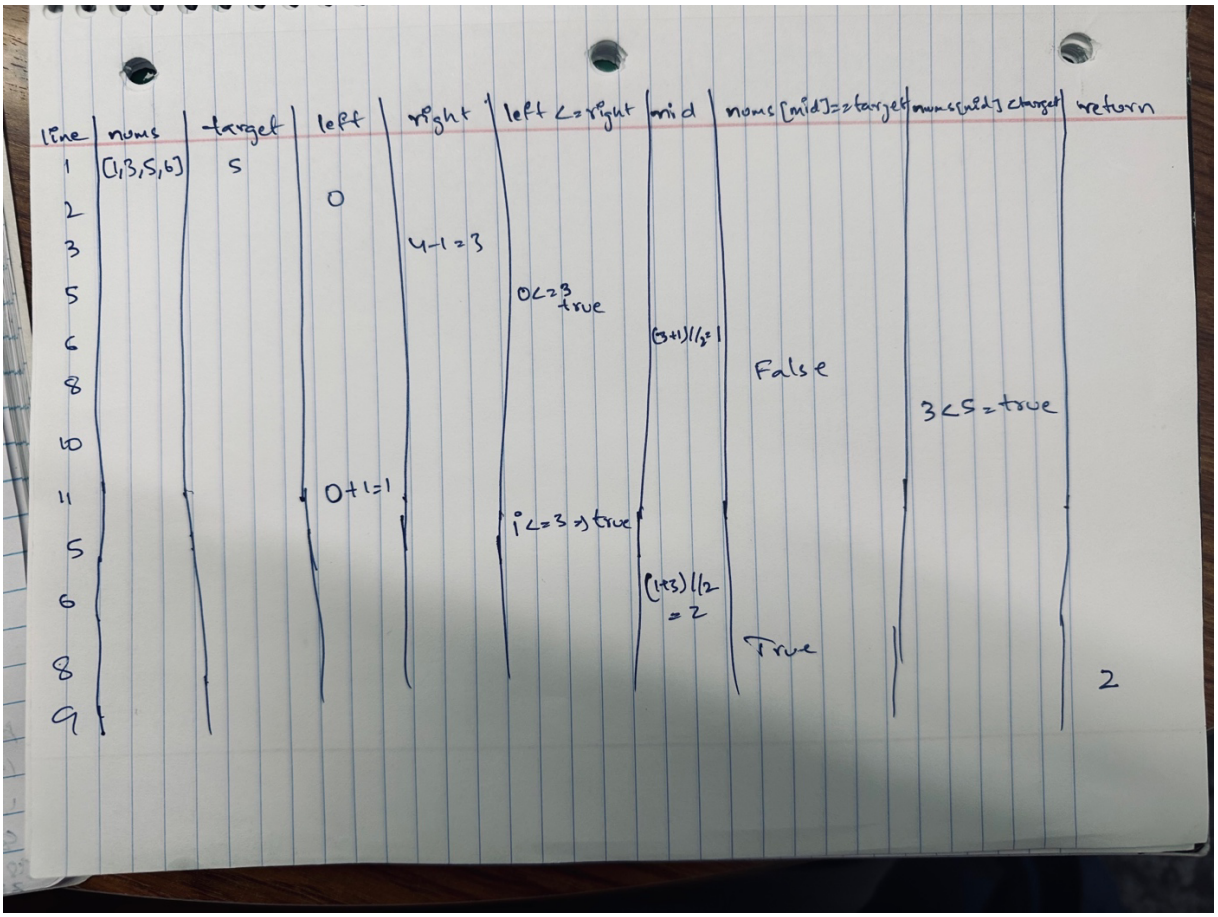
Week4_Q2

```python
def searchInsert(nums, target):
    left = 0
    right = len(nums) - 1

    while left <= right:
        mid = (left + right) // 2

        if nums[mid] == target:
            return mid
        elif nums[mid] < target:
            left = mid + 1
        else:
            right = mid - 1

    return left

# Test case
nums = [1, 3, 5, 6]
target = 5

result = searchInsert(nums, target)
print(result)
```


start searchInsert
input: nums, target
left = 0
right = (len(nums) - 1)
while (left <= right)
no
output: left
end function return
yes
mid = ((left + right) // 2)
if (nums[mid] == target)
no
if (nums[mid] < target)
no
right = (mid - 1)
yes
yes
output: mid
left = (mid + 1)
end function return

Trace table:



Test cases:

```
def searchInsert(nums, target):
    left = 0
    right = len(nums) - 1

    while left <= right:
        mid = (left + right) // 2

        if nums[mid] == target:
            return mid
        elif nums[mid] < target:
            left = mid + 1
        else:
            right = mid - 1

    return left

# Test case
nums = [1, 3, 5, 6]
```

```
target = 5

print(searchInsert(nums, target))
target1 = 2
target2 = 7
print(searchInsert(nums, target1))
print(searchInsert(nums, target2))
```