Started on	Thursday, 13 March 2025, 2:27 PM
State	Finished
Completed on	Tuesday, 18 March 2025, 10:09 AM
Time taken	4 days 19 hours
Overdue	4 days 17 hours
Grade	**80.00** out of 100.00

Write a Python Program Using a recursive function to calculate the sum of a sequence
For example:

Input	Result
20	210
36	666
45	1035

Answer: (penalty regime: 0 %)

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```python
def add(n):
    if (n>0):
        return n+add(n-1)
    return 0
a=int(input())
result=add(a)
print(result)
```

	Input	Expected	Got	
✔	20	210	210	✔
✔	36	666	666	✔
✔	45	1035	1035	✔
✔	58	1711	1711	✔
✔	65	2145	2145	✔

Passed all tests! ✔

Correct
Marks for this submission: 20.00/20.00.

Write a python program to implement binary search on the given list of string values using iterative method

For example:

Test	Input	Result
binarySearchAppr(arr, 0, len(arr)-1, x)	5 one two three four five two	Element is present at index 4
binarySearchAppr(arr, 0, len(arr)-1, x)	6 one three five seven nine eleven thirteen	Element is not present in array

Answer: (penalty regime: 0 %)

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```python
def binarySearchAppr (list1,low,high,x):
    mid = 0
    while(low<=high):
        mid = (low+high)//2
        if list1[mid] < x:
            low = mid  + 1
        elif list1[mid] > x:
            high = mid - 1
        else:
            return mid
    return -1
arr = []
num = int(input())
for i in range(0,num):
    arr.append(input())
arr = sorted(arr)
x = input()
value = binarySearchAppr(arr, 0, len(arr)-1, x)
```

	Test	Input	Expected	Got	
✔	binarySearchAppr(arr, 0, len(arr)-1, x)	5 one two three four five two	Element is present at index 4	Element is present at index 4	✔

	Test	Input	Expected	Got	
✔	binarySearchAppr(arr, 0, len(arr)-1, x)	6 one three five seven nine eleven thirteen	Element is not present in array	Element is not present in array	✔
✔	binarySearchAppr(arr, 0, len(arr)-1, x)	4 two four six eight six	Element is present at index 2	Element is present at index 2	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Write a python program to implement quick sort on the given float array values.

For example:

Input	Result
5 6.9 8.3 2.1 1.5 6.4	left: [] right: [] left: [] right: [] left: [1.5] right: [6.4] left: [] right: [] left: [1.5, 2.1, 6.4] right: [8.3] [1.5, 2.1, 6.4, 6.9, 8.3]
6 3.1 2.4 5.6 4.3 6.2 7.8	left: [] right: [] left: [] right: [] left: [] right: [] left: [] right: [7.8] left: [4.3] right: [6.2, 7.8] left: [2.4] right: [4.3, 5.6, 6.2, 7.8] [2.4, 3.1, 4.3, 5.6, 6.2, 7.8]

Answer: (penalty regime: 0 %)

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```
def quickSort(arr):
    if arr==[]:
        return arr
    pivot=arr[0:1]
    left=quickSort([x for x in arr[1:] if x<pivot[0]])
    right=quickSort([x for x in arr[1:] if x>=pivot[0]])
    print("left: ",left)
    print("right: ",right)
    return left+pivot+right


l=[float(input()) for i in range(int(input()))]
s=quickSort(l)
print(s)
```

	Input	Expected	Got	
✔	5 6.9 8.3 2.1 1.5 6.4	left: [] right: [] left: [] right: [] left: [1.5] right: [6.4] left: [] right: [] left: [1.5, 2.1, 6.4] right: [8.3] [1.5, 2.1, 6.4, 6.9, 8.3]	left: [] right: [] left: [] right: [] left: [1.5] right: [6.4] left: [] right: [] left: [1.5, 2.1, 6.4] right: [8.3] [1.5, 2.1, 6.4, 6.9, 8.3]	✔
✔	6 3.1 2.4 5.6 4.3 6.2 7.8	left: [] right: [] left: [] right: [] left: [] right: [] left: [] right: [7.8] left: [4.3] right: [6.2, 7.8] left: [2.4] right: [4.3, 5.6, 6.2, 7.8] [2.4, 3.1, 4.3, 5.6, 6.2, 7.8]	left: [] right: [] left: [] right: [] left: [] right: [] left: [] right: [7.8] left: [4.3] right: [6.2, 7.8] left: [2.4] right: [4.3, 5.6, 6.2, 7.8] [2.4, 3.1, 4.3, 5.6, 6.2, 7.8]	✔
✔	8 1.2 1.3 4.2 5.3 6.4 7.3 6.8 9.2	left: [] right: [] left: [] right: [] left: [6.8] right: [9.2] left: [] right: [6.8, 7.3, 9.2] left: [] right: [6.4, 6.8, 7.3, 9.2] left: [] right: [5.3, 6.4, 6.8, 7.3, 9.2] left: [] right: [4.2, 5.3, 6.4, 6.8, 7.3, 9.2] left: [] right: [1.3, 4.2, 5.3, 6.4, 6.8, 7.3, 9.2] [1.2, 1.3, 4.2, 5.3, 6.4, 6.8, 7.3, 9.2]	left: [] right: [] left: [] right: [] left: [6.8] right: [9.2] left: [] right: [6.8, 7.3, 9.2] left: [] right: [6.4, 6.8, 7.3, 9.2] left: [] right: [5.3, 6.4, 6.8, 7.3, 9.2] left: [] right: [4.2, 5.3, 6.4, 6.8, 7.3, 9.2] left: [] right: [1.3, 4.2, 5.3, 6.4, 6.8, 7.3, 9.2] [1.2, 1.3, 4.2, 5.3, 6.4, 6.8, 7.3, 9.2]	✔

Passed all tests! ✔

Write a python program to implement merge sort using iterative approach on the given list of values.

For example:

Test	Input	Result
Merge_Sort(S)	6 4 2 3 1 6 5	The Original array is: [4, 2, 3, 1, 6, 5] Array after sorting is: [1, 2, 3, 4, 5, 6]
Merge_Sort(S)	5 2 6 4 3 1	The Original array is: [2, 6, 4, 3, 1] Array after sorting is: [1, 2, 3, 4, 6]

Answer: (penalty regime: 0 %)

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```
        mid = min(left + current_size - 1, n - 1)
        right = min(left + 2 * current_size - 1, n - 1)

        merge(S, left, mid, right)
        left += 2 * current_size

    current_size *= 2


def merge(S, left, mid, right):
    n1 = mid - left + 1
    n2 = right - mid

    L = [S[left + i] for i in range(n1)]
    R = [S[mid + 1 + i] for i in range(n2)]

    i = j = 0
    k = left
```

	Test	Input	Expected	Got	
✔	Merge_Sort(S)	6 4 2 3 1 6 5	The Original array is: [4, 2, 3, 1, 6, 5] Array after sorting is: [1, 2, 3, 4, 5, 6]	The Original array is: [4, 2, 3, 1, 6, 5] Array after sorting is: [1, 2, 3, 4, 5, 6]	✔

	Test	Input	Expected	Got	
✔	Merge_Sort(S)	5 2 6 4 3 1	The Original array is: [2, 6, 4, 3, 1] Array after sorting is: [1, 2, 3, 4, 6]	The Original array is: [2, 6, 4, 3, 1] Array after sorting is: [1, 2, 3, 4, 6]	✔
✔	Merge_Sort(S)	4 3 5 6 1	The Original array is: [3, 5, 6, 1] Array after sorting is: [1, 3, 5, 6]	The Original array is: [3, 5, 6, 1] Array after sorting is: [1, 3, 5, 6]	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Write a python program to implement linear search on the given tuple of float values.

note: As the tuple is immutable convert the list to tuple to perform search

For example:

Input	Result
5 3.2 1.5 6.4 7.8 9.5 6.4	Tuple: 6.4 found
6 3.2 1.2 3.4 5.3 6.2 6.8 6.2	Tuple: 6.2 found

Answer: (penalty regime: 0 %)

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