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Time taken	14 mins 2 secs
Grade	100.00 out of 100.00

Question **1**

Correct

Mark 20.00 out
of 20.00

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

For example:

Test	Input	Result
Merge_Sort(S)	5 10.2 21.3 3.5 7.8 9.8	The Original array is: [10.2, 21.3, 3.5, 7.8, 9.8] Array after sorting is: [3.5, 7.8, 9.8, 10.2, 21.3]
Merge_Sort(S)	6 20.3 41.2 5.3 6.2 8.1 65.2	The Original array is: [20.3, 41.2, 5.3, 6.2, 8.1, 65.2] Array after sorting is: [5.3, 6.2, 8.1, 20.3, 41.2, 65.2]

Answer: (penalty regime: 0 %)

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```

def Merge_Sort(S):
    if(len(S)>1):
        mid = len(S)//2
        left = S[:mid]
        right = S[mid:]
        Merge_Sort(left)
        Merge_Sort(right)
        i = j = k = 0
        while(i < len(left) and j < len(right)):
            if(left[i] < right[j]):
                S[k] = left[i]
                i = i +1
            else:
                S[k] = right[j]
                j = j+1
            k = k+1
        while(i<len(left)):
            S[k] = left[i]

```

	Test	Input	Expected	Got	
✓	Merge_Sort(S)	5 10.2 21.3 3.5 7.8 9.8	The Original array is: [10.2, 21.3, 3.5, 7.8, 9.8] Array after sorting is: [3.5, 7.8, 9.8, 10.2, 21.3]	The Original array is: [10.2, 21.3, 3.5, 7.8, 9.8] Array after sorting is: [3.5, 7.8, 9.8, 10.2, 21.3]	✓

	Test	Input	Expected	Got	
✓	Merge_Sort(S)	6 20.3 41.2 5.3 6.2 8.1 65.2	The Original array is: [20.3, 41.2, 5.3, 6.2, 8.1, 65.2] Array after sorting is: [5.3, 6.2, 8.1, 20.3, 41.2, 65.2]	The Original array is: [20.3, 41.2, 5.3, 6.2, 8.1, 65.2] Array after sorting is: [5.3, 6.2, 8.1, 20.3, 41.2, 65.2]	✓
✓	Merge_Sort(S)	4 2.3 6.1 4.5 96.5	The Original array is: [2.3, 6.1, 4.5, 96.5] Array after sorting is: [2.3, 4.5, 6.1, 96.5]	The Original array is: [2.3, 6.1, 4.5, 96.5] Array after sorting is: [2.3, 4.5, 6.1, 96.5]	✓

Passed all tests! ✓

Correct

Marks for this submission: 20.00/20.00.

Question **2**

Correct

Mark 20.00 out
of 20.00

Write a python program to implement quick sort on the given float values and print the sorted list and pivot value of each iteration.

For example:

Input	Result
5	Input List
2.3	[2.3, 3.2, 1.6, 4.2, 3.9]
3.2	pivot: 2.3
1.6	pivot: 3.2
4.2	pivot: 4.2
3.9	Sorted List
	[1.6, 2.3, 3.2, 3.9, 4.2]
4	Input List
5	[5.0, 2.0, 49.0, 3.0]
2	pivot: 5.0
49	pivot: 3.0
3	Sorted List
	[2.0, 3.0, 5.0, 49.0]

Answer: (penalty regime: 0 %)

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```

def quicksort(arr, low, high):
    if low < high:
        pi = partition(arr, low, high)
        quicksort(arr, low, pi - 1)
        quicksort(arr, pi + 1, high)

def partition(arr, low, high):
    pivot = arr[low]
    left = low + 1
    right = high

    while True:
        while left <= right and arr[left] <= pivot:
            left = left + 1
        while left <= right and arr[right] >= pivot:
            right = right - 1
        if left <= right:
            arr[left], arr[right] = arr[right], arr[left]

```

	Input	Expected	Got	
✓	5 2.3 3.2 1.6 4.2 3.9	Input List [2.3, 3.2, 1.6, 4.2, 3.9] pivot: 2.3 pivot: 3.2 pivot: 4.2 Sorted List [1.6, 2.3, 3.2, 3.9, 4.2]	Input List [2.3, 3.2, 1.6, 4.2, 3.9] pivot: 2.3 pivot: 3.2 pivot: 4.2 Sorted List [1.6, 2.3, 3.2, 3.9, 4.2]	✓

	Input	Expected	Got	
✓	4 5 2 49 3	Input List [5.0, 2.0, 49.0, 3.0] pivot: 5.0 pivot: 3.0 Sorted List [2.0, 3.0, 5.0, 49.0]	Input List [5.0, 2.0, 49.0, 3.0] pivot: 5.0 pivot: 3.0 Sorted List [2.0, 3.0, 5.0, 49.0]	✓
✓	6 3.1 4.2 5.1 2.3 7.4 5.9	Input List [3.1, 4.2, 5.1, 2.3, 7.4, 5.9] pivot: 3.1 pivot: 5.1 pivot: 7.4 Sorted List [2.3, 3.1, 4.2, 5.1, 5.9, 7.4]	Input List [3.1, 4.2, 5.1, 2.3, 7.4, 5.9] pivot: 3.1 pivot: 5.1 pivot: 7.4 Sorted List [2.3, 3.1, 4.2, 5.1, 5.9, 7.4]	✓

Passed all tests! ✓

Correct

Marks for this submission: 20.00/20.00.

Question **3**

Correct

Mark 20.00 out
of 20.00**Write a Python Program to print factorial of a number recursively.****For example:**

Input	Result
5	Factorial of number 5 = 120
6	Factorial of number 6 = 720

Answer: (penalty regime: 0 %)

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```
def Factorial(n):  
    if n==0 or n==1:  
        return 1  
    else:  
        return n * Factorial(n-1)  
n=int(input())  
  
print("Factorial of number",n,"=",Factorial(n));
```

	Input	Expected	Got	
✓	5	Factorial of number 5 = 120	Factorial of number 5 = 120	✓
✓	6	Factorial of number 6 = 720	Factorial of number 6 = 720	✓
✓	7	Factorial of number 7 = 5040	Factorial of number 7 = 5040	✓
✓	8	Factorial of number 8 = 40320	Factorial of number 8 = 40320	✓

Passed all tests! ✓

Correct

Marks for this submission: 20.00/20.00.

Question **4**

Correct

Mark 20.00 out
of 20.00

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

For example:

Test	Input	Result
binarySearchAppr(arr, 0, len(arr)-1, x)	5 3.2 6.1 4.5 9.6 8.3 6.1	Element is present at index 2
binarySearchAppr(arr, 0, len(arr)-1, x)	6 3.1 2.3 5.1 4.6 3.2 9.5 4.6	Element is present at index 3

Answer: (penalty regime: 0 %)

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```

def binarySearchAppr (arr, start, end, x):
    if end >= start:
        mid = (start +end)//2
        if arr[mid] == x:
            return mid
        elif arr[mid] > x:
            return binarySearchAppr(arr, start, mid-1, x)
        else:
            return binarySearchAppr (arr,mid+1,end,x)
    else:
        return -1
arr=[]
n=int(input())
for i in range(n):
    arr.append(input())
arr = sorted(arr)
x =input()
result = binarySearchAppr (arr,0,len(arr)-1,x)

```

	Test	Input	Expected	Got	
✓	binarySearchAppr(arr, 0, len(arr)-1, x)	5 3.2 6.1 4.5 9.6 8.3 6.1	Element is present at index 2	Element is present at index 2	✓

	Test	Input	Expected	Got	
✓	binarySearchAppr(arr, 0, len(arr)-1, x)	6 3.1 2.3 5.1 4.6 3.2 9.5 4.6	Element is present at index 3	Element is present at index 3	✓
✓	binarySearchAppr(arr, 0, len(arr)-1, x)	8 2.1 6.3 5.2 4.2 9.3 6.7 5.6 9.8 7.2	Element is not present in array	Element is not present in array	✓

Passed all tests! ✓

Correct

Marks for this submission: 20.00/20.00.

Question **5**

Correct

Mark 20.00 out
of 20.00

Write a python program for a search function with parameter list name and the value to be searched on the given list of float values.

For example:

Test	Input	Result
search(List, n)	5	3.2 Found
	3.2	
	6.1	
	4.5	
	6.2	
	8.5	
	3.2	
search(List, n)	4	6.1 Not Found
	3.2	
	1.5	
	6.4	
	7.8	
	6.1	

Answer: (penalty regime: 0 %)

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```

def search(List,n):
    for i in List:
        if i==n:
            print(n,"Found")
            break
    else:
        print(n,"Not Found")
s=int(input())
List=[input() for i in range(s)]
n=input()

```

	Test	Input	Expected	Got	
✓	search(List, n)	5 3.2 6.1 4.5 6.2 8.5 3.2	3.2 Found	3.2 Found	✓

	Test	Input	Expected	Got	
✓	search(List, n)	4 3.2 1.5 6.4 7.8 6.1	6.1 Not Found	6.1 Not Found	✓
✓	search(List, n)	7 2.1 3.2 6.5 4.1 5.2 7.1 8.2 9.3	9.3 Not Found	9.3 Not Found	✓

Passed all tests! ✓

Correct

Marks for this submission: 20.00/20.00.