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 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 %)

```
def Merge_Sort(S):
    n = len(S)
    current_size = 1

    while current_size < n:
        left = 0
        while left < n - 1:
            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)]
```

	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]	✔
✔	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]	✔

	Test	Input	Expected	Got	
✔	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.

Question **2**

Correct

Mark 20.00 out of 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 %)

```
def search(tuple1,x):
    for value in tuple1:
        if(value==x):
            print("Tuple:",x ,"found")
            return 0
    print("Tuple:",x, "not found")
List=[]
n=int(input())
for i in range(n):
    List.append(float(input()))
tuple1=tuple(List)
x=float(input())
search(tuple1,x)
```

	Input	Expected	Got	
✔	5 3.2 1.5 6.4 7.8 9.5 6.4	Tuple: 6.4 found	Tuple: 6.4 found	✔

	Input	Expected	Got	
✔	6 3.2 1.2 3.4 5.3 6.2 6.8 6.2	Tuple: 6.2 found	Tuple: 6.2 found	✔
✔	4 2.1 3.2 6.5 4.5 3.5	Tuple: 3.5 not found	Tuple: 3.5 not found	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **3**

Incorrect

Mark 0.00 out of 20.00

Write a python program to implement the quick sort using recursion on the given list of float values.

For example:

Input	Result
5 6.3 1.2 4.6 5.8 9.7	pivot: 9.7 pivot: 5.8 pivot: 4.6 [1.2, 4.6, 5.8, 6.3, 9.7]
6 2.3 7.8 9.5 4.2 3.6 5.4	pivot: 5.4 pivot: 3.6 pivot: 7.8 [2.3, 3.6, 4.2, 5.4, 7.8, 9.5]

Answer: (penalty regime: 0 %)

```
pivot(List,n):
    for i in range(n):
        if(List[i]==n):
            return True
        return False
x=int(input())
for i in range(x):
    List.append(input())
n=int(input())

```

Syntax Error(s)

```
  File "__tester__.python3", line 1
    pivot(List,n):
                 ^
SyntaxError: invalid syntax
```

Incorrect

Marks for this submission: 0.00/20.00.

Question **4**

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 %)

```
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 **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 6.1 4.5 6.2 8.5 3.2	3.2 Found
search(List, n)	4 3.2 1.5 6.4 7.8 6.1	6.1 Not Found

Answer: (penalty regime: 0 %)

```
def search(List,n):
    for i in range(len(List)):
        if(List[i]==n):
            return True
        return False
List=[]
x=int(input())
for i in range(x):
    List.append(float(input()))
n=float(input())
res=search(List,n)
if(res==True):
    print(n,"Found")
else:
    print(n,"Not Found")
```

	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	✔
✔	search(List, n)	4 3.2 1.5 6.4 7.8 6.1	6.1 Not Found	6.1 Not Found	✔

	Test	Input	Expected	Got	
✔	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.