Started on	Monday, 30 September 2024, 10:30 AM
State	Finished
Completed on	Monday, 30 September 2024, 11:03 AM
Time taken	33 mins 42 secs
Grade	**100.00** out of 100.00

Question **1**

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 va

For example:

Input	Result
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]
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]

Answer: (penalty regime: 0 %)

```
def quick_sort(alist, start, end):
    if end - start > 1:
        p = partition(alist, start, end)
        quick_sort(alist, start, p)
        quick_sort(alist, p + 1, end)


def partition(alist, start, end):

    pivot=alist[start]
    i=start+1
    j=end-1
    print("pivot: ",pivot)
    while True:
        while(i<=j and alist[i]<=pivot):
            i=i+1
        while(i<=j and alist[j]>=pivot):
            j=j-1
        if i<=j:
            alist[i],alist[j]=alist[j],alist[i]
        else:
            alist[start],alist[j]=alist[j],alist[start]
```

	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]	✔
✔	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 **2**

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 %)

```
def binarySearchAppr(arr,l,r,x):
    while r >= l:
        mid = (l + r) // 2
        if arr[mid] == x:
            print("Element is present at index",mid)
            break
        elif x > arr[mid]:
            l = mid + 1
        else:
            r = mid - 1
    else:
        print("Element is not present in array")

n = int(input())
arr = []
for i in range(n):
    arr +=[input(),]
x = input()
arr.sort()

```

	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 pres
✔	`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 pres
✔	`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 array

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 implement merge sort without using recursive function on the given list of values.

For example:

Input	Result
7 33 42 9 37 8 47 5	left: [33] Right: [42] left: [9] Right: [37] left: [8] Right: [47] left: [5] Right: [] left: [33, 42] Right: [9, 37] left: [8, 47] Right: [5] left: [9, 33, 37, 42] Right: [5, 8, 47] [5, 8, 9, 33, 37, 42, 47]
6 10 3 5 61 74 92	left: [10] Right: [3] left: [5] Right: [61] left: [74] Right: [92] left: [3, 10] Right: [5, 61] left: [74, 92] Right: [] left: [3, 5, 10, 61] Right: [74, 92] [3, 5, 10, 61, 74, 92]

Answer: (penalty regime: 0 %)

```
def merge(left,right):
    result = []
    x,y = 0,0
    for k in range( 0, len(left)+len(right) ):
        if x == len(left):
            result.append(right[y])
            y +=1
        elif y == len(right):
            result.append(left[x])
            x +=1
```

	Input	Expected	Got	
✔	7 33 42 9 37 8 47 5	left: [33] Right: [42] left: [9] Right: [37] left: [8] Right: [47] left: [5] Right: [] left: [33, 42] Right: [9, 37] left: [8, 47] Right: [5] left: [9, 33, 37, 42] Right: [5, 8, 47] [5, 8, 9, 33, 37, 42, 47]	left: [33] Right: [42] left: [9] Right: [37] left: [8] Right: [47] left: [5] Right: [] left: [33, 42] Right: [9, 37] left: [8, 47] Right: [5] left: [9, 33, 37, 42] Right: [5, 8, 47] [5, 8, 9, 33, 37, 42, 47]	✔
✔	6 10 3 5 61 74 92	left: [10] Right: [3] left: [5] Right: [61] left: [74] Right: [92] left: [3, 10] Right: [5, 61] left: [74, 92] Right: [] left: [3, 5, 10, 61] Right: [74, 92] [3, 5, 10, 61, 74, 92]	left: [10] Right: [3] left: [5] Right: [61] left: [74] Right: [92] left: [3, 10] Right: [5, 61] left: [74, 92] Right: [] left: [3, 5, 10, 61] Right: [74, 92] [3, 5, 10, 61, 74, 92]	✔

	Input	Expected	Got	
✔	5 4 12 6 98 3	left: [4] Right: [12] left: [6] Right: [98] left: [3] Right: [] left: [4, 12] Right: [6, 98] left: [3] Right: [] left: [4, 6, 12, 98] Right: [3] [3, 4, 6, 12, 98]	left: [4] Right: [12] left: [6] Right: [98] left: [3] Right: [] left: [4, 12] Right: [6, 98] left: [3] Right: [] left: [4, 6, 12, 98] Right: [3] [3, 4, 6, 12, 98]	✔

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 for a search function with parameter list name and the value to be searched on the gi

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):
    is_found = False
    for i in range(len(List)):
        if List[i] == n:
            is_found = True
            return f"{n} Found"
    if not is_found:
        return f"{n} Not Found"

List=[]
x=int(input())
for i in range(x):
    List.append(str(input()))

n=str(input())
print(search(List, n))
```

	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	✔
✔	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.

Question **5**

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 == 1:
        return n
    else:
        return n * factorial(n-1)
num = int(input())
if num < 0:
    print("Factorial does not exist for negative values")
elif num == 0:
    print("Factorial of 0 is 1")
else:
    print("Factorial of number",num,"=",factorial(num))

```

	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	✔

	Input	Expected	Got	
✔	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.