"""Write a Python program to store first year percentage of students in array.

Write function for sorting array of floating point numbers in ascending order using quick sort

and display top five scores."""

def Quick\_sort(arr,left,right):

    if left<right:

        partition\_pos=partition(arr,left,right)

        Quick\_sort(arr,left,partition\_pos-1)

        Quick\_sort(arr,partition\_pos+1,right)

def partition(arr,left,right):

    i=left

    j=right-1

    pivot=arr[right]

    while i<j:

        while(i<right) and arr[i]<pivot:

            i+=1

        while(j>left) and arr[j]>=pivot:

            j-=1

        if i<j:

            arr[i],arr[j]=arr[j],arr[i]

    if arr[i]>pivot:

        arr[i],arr[right]=arr[right],arr[i]

    return i

def reverse\_sort(Score\_list):

    for i in range(len(Score\_list)):

        min\_score=i

        for j in range(i+1,len(Score\_list)):

            Score\_list[j]>min\_score

            min\_score=j

            Score\_list[i],Score\_list[min\_score]=Score\_list[min\_score],Score\_list[i]

def top\_five(Score\_list):

    Quick\_sort(Score\_list,0,len(Score\_list)-1)

    reverse\_sort(Score\_list)

    temp=[]

    for i in range(5):

        temp=Score\_list[i]

        print(temp)

n=int(input("Enter the no. of students present in the class:"))

print("Enter the scores:(in float point)")

Score\_list=[]

for i in range(n):

    data=float(input())

    Score\_list.append(data)

print("Unsorted Score:",Score\_list)

Quick\_sort(Score\_list,0,len(Score\_list)-1)

print("Sorted Scores:",Score\_list)

print("Top Five scores:")

top\_five(Score\_list)

OUTPUT:-

Enter the no. of students present in the class:10

Enter the scores:(in float point)

99.4

91.6

91.5

95.4

90.8

99.8

94.7

97.5

96.8

92.5

Unsorted Score: [99.4, 91.6, 91.5, 95.4, 90.8, 99.8, 94.7, 97.5, 96.8, 92.5]

Sorted Scores: [90.8, 91.5, 91.6, 92.5, 94.7, 95.4, 96.8, 97.5, 99.4, 99.8]

Top Five scores:

99.8

99.4

97.5

96.8

95.4