""" Assignment No -15  -Write a Python program to store second year percentage of students in array. Write function for sorting array of floating point numbers in ascending order using

a)  Insertion sort

b)  Shell Sort and display top five scores

"""

def InsertSort(arr,n):

        for index in range(1,len(arr)):

            currentelement= arr[index]

            pos=index

            while((currentelement<arr[pos-1]) and (pos>0)):

                print("Array of pos=>",arr[pos])

                arr[pos] = arr[pos-1]

                print("Array of pos-1=>",arr[pos-1])

                pos=pos-1

            arr[pos] = currentelement

            print("phases==>",arr)

        print("Using Insert Sort Algorithm=>",arr)

def ShellSort(arr,n):

    gap = len(arr)//2

    while gap > 0:

        for index in range(gap,len(arr)):

            currentelement = arr[index]

            pos=index

            while(currentelement<arr[pos-gap] and pos >= gap):

                arr[pos] = arr[pos-gap]

                pos=pos-gap

            arr[pos] = currentelement

        gap= gap//2

    print("Using Shell Sort Algorithm=>",arr)

    print("Top Five Scores are...")

    for i in range (len(arr)-1,len(arr)-6,-1):

            print(arr[i])

#Driver Code

print("\nHow many students are there?")

n = int(input())

array = []

i=0

for i in range(n):

    print("\n Enter percentage marks")

    item = float(input())

    array.append(item)

print("You have entered following scores...\n")

print(array)

InsertSort(array,n)

ShellSort(array,n)