import array as arr

n= int(input("Enter the number of the students: "))

a=arr.array('f',[])

for i in range (n):

e=float(input("Enter the percentage of the students: "))

a.append(e)

print("The array before sorting: ",a)

#insertion sort

for i in range (n):

key=a[i]

j=i-1

while(j>=0 and key<a[j]):

a[j+1]=a[j]

j-=1

a[j+1]=key

print("The array after the insertion sort is : ",a)

#shell sort

interval=n//2

while interval>0:

for i in range (interval,n):

temp=a[i]

j=i

while (j>=interval and a[j-interval]>temp):

a[j]=a[j-interval]

j-=interval

a[j]=temp

interval=interval//2

print("The array after the shell sort is: ",a)

#The top 5 score

b=a[-5:]

for i in range (5):

for j in range (i+1,5):

if b[i]<b[j]:

temp=b[i]

b[i]=b[j]

b[j]=temp

print("The top 5 score are: ",b)