Practical 5

import array as a

def insertion\_sort(m,n):

for i in range(1, n):

key = m[i]

j = i - 1

while j >= 0 and key < m[j]:

m[j + 1] = m[j]

j -= 1

m[j + 1] = key

print("Marks of students after performing insertion Sort on the list : ")

for i in range(len(m)):

print("%.2f"%m[i])

def shell\_sort(a,n):

gap = n // 2

while gap > 0:

for i in range(gap, n):

temp = a[i]

j = i

while j >= gap and a[j - gap] > temp:

a[j] = a[j - gap]

j -= gap

a[j] = temp

gap //= 2

print("marks after shell sort :")

for n in range (0,n):

print("%.2f"%a[n])

def main():

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

l=int(input("enter number of student :"))

print ("enetr marks of student")

for i in range(0,l):

print("student ",i+1)

e=float(input())

arr.append(e)

print("student marks before sorting")

for n in range (0,l):

print("%.2f"%arr[n])

flag=1;

while True:

print("Menu:")

print("1. insertion Sort of the marks")

print("2. shell Sort of the marks")

print("3. top 5 student")

print("4. Exit")

choice = int(input("Enter your choice: "))

if choice == 1:

insertion\_sort(arr,l)

elif choice == 2:

shell\_sort(arr,l)

elif choice == 3:

if (l<5):

print (l ,"topper are :")

for t in range (l-1,0-1,-1):

print("%.2f" %arr[t])

else:

print("topper students :")

for k in range (l-1,l-6,-1):

print("%.2f" %arr[k])

elif choice == 4:

break

else:

print("Invalid choice. Please enter a valid option.")

main()