**PROGRAM:**

list1=[]

n=int(input("Enter number of elements:"))

for i in range(1,n+1):

no=int(input("Enter element:"))

list1.append(no)

def mergeSort(list1):

print("Splitting ",list1)

if len(list1)>1:

mid = len(list1)//2

lefthalf = list1[:mid]

righthalf = list1[mid:]

mergeSort(lefthalf)

mergeSort(righthalf)

i=0

j=0

k=0

while i < len(lefthalf) and j < len(righthalf):

if lefthalf[i] < righthalf[j]:

list1[k]=lefthalf[i]

i=i+1

else:

list1[k]=righthalf[j]

j=j+1

k=k+1

while i < len(lefthalf):

list1[k]=lefthalf[i]

i=i+1

k=k+1

while j < len(righthalf):

list1[k]=righthalf[j]

j=j+1

k=k+1

print("Merging ",list1)

mergeSort(list1)

print(list1)

**OUTPUT**

