# Python program for implementation of MergeSort

def mergeSort(arr):

if len(arr) >1:

mid = len(arr)//2 # Finding the mid of the array

L = arr[:mid] # Dividing the array elements

R = arr[mid:] # into 2 halves

mergeSort(L) # Sorting the first half

mergeSort(R) # Sorting the second half

i = j = k = 0

# Copy data to temp arrays L[] and R[]

while i < len(L) and j < len(R):

if L[i] < R[j]:

arr[k] = L[i]

i+= 1

else:

arr[k] = R[j]

j+= 1

k+= 1

# Checking if any element was left

while i < len(L):

arr[k] = L[i]

i+= 1

k+= 1

while j < len(R):

arr[k] = R[j]

j+= 1

k+= 1

# Code to print the list

def printList(arr):

for i in range(len(arr)):

print(arr[i], end =" ")

print()

# driver code to test the above code

if \_\_name\_\_ == '\_\_main\_\_':

arr = [12, 11, 13, 5, 6, 7]

print ("Given array is", end ="\n")

printList(arr)

mergeSort(arr)

print("Sorted array is: ", end ="\n")

printList(arr)

# This code is contributed by Mayank Khanna