**Experiment No: 4**

Student Name and Roll Number: Jaspreet Singh 18CSU094

Semester /Section: CS-V-CSA

Date: 11th Aug 2020

Faculty Signature:

Remarks:

**Objective**:

To do a Merge Sort using any Programming Language.

**Theory:**

Merge Sort is a Divide and Conquer algorithm. It divides input array in two halves, calls itself for the two halves and then merges the two sorted halves.

**Code:**

def MergeSort(sequence):

if len(sequence) > 1:

middle = len(sequence)//2

l = sequence[:middle]

r = sequence[middle:]

MergeSort(l)

MergeSort(r)

i,j,k = 0,0,0

while i < len(l) and j < len(r):

if l[i] < r[j]:

sequence[k]=l[i]

i+=1

else:

sequence[k]=r[j]

j+=1

k+=1

while i < len(l):

sequence[k]=l[i]

i+=1

k+=1

while j < len(r):

sequence[k]=r[j]

j+=1

k+=1

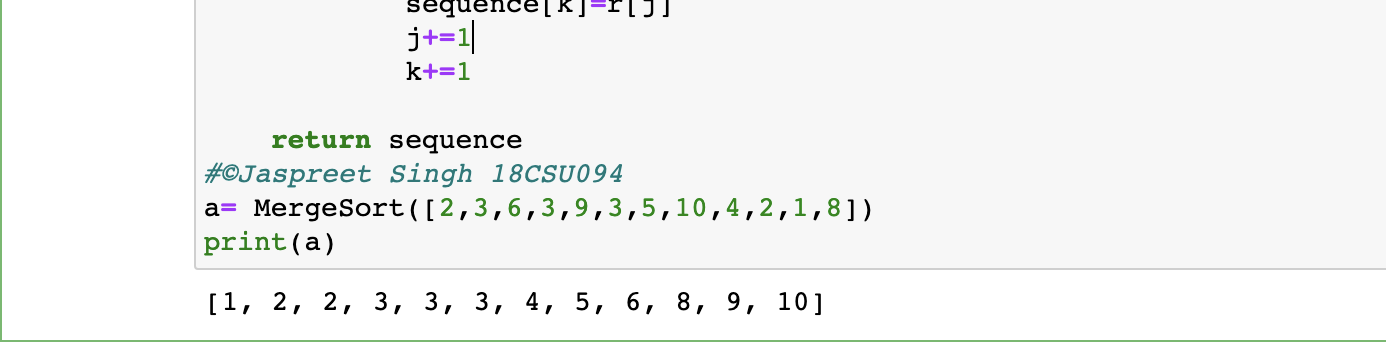
return sequence

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a= MergeSort([2,3,6,3,9,3,5,10,4,2,1,8])

print(a)

**Output:**

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