Experiment no 3:

Aim- Write a Merge-Sort algorithm using the concept of Divide-and-Conquers to arrange the elements in ascending orders. Use all the operations of divide and conquers as functions.

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In [1]:
```
def merge(l):
    if len(l)>1:
        mid = len(l)//2
        left = l[:mid]
        right = l[mid:]

        merge(left)
        merge(right)
        i=j=k=0
        #i-left, j-right, k-temp
        while i<len(left) and j<len(right):
            if left[i]<right[j]:
                l[k]=left[i]
                i=i+1
                k=k+1
            else:
                l[k]=right[j]
                j=j+1
                k=k+1

        while i<len(left):
            l[k]=left[i]
            i=i+1
            k=k+1

        while j<len(right):
            l[k]=right[j]
            j=j+1
            k=k+1
```

In [3]:
```
l = []
n = int(input("Enter the number of elements in the array"))
for i in range(0,n):
    li=int(input())
    l.append(li)
merge(l)
print("Sorted array: ",l)
```

```
Enter the number of elements in the array4
67
3
45
-3
Sorted array:  [-3, 3, 45, 67]
```

In [ ]: