**PYTHON RECURSION IMPORTANT NOTES**

In merge sort remember to partition the array into two parts first from

Low to mid

Mid+1 to high

If you do the otherwise then it will fail the output

So do likewise

First create a function named as merge sort that takes three arguments namely the array, low and high

mergeSort(arr,low,high):

then the next part is the base condition with normal thinking only you can tell the base condition will be if high>=low then we have to return

the next part is calling for the left subarray and right subarray

and the last part is to call the merge function.

NOTE:-

For the recursive call use low to mid for the left subarray and then mid+1 to high for the right subarray

Merge function takes four arguments namely the array. low, mid, high

Function declaration will be like merge(arr,low,mid,high)

1. First find out the length of both the subarrays that you want to create in order to store the elements on which we will perform the merge function so in order to do that we must know the size of the array that we are working with we can find this by just doing length1= mid-low+1 and for the length2= high-mid
2. Next step is to create both the lists and then initialize them with zeros equivalent to the size of the list
3. Then the next step is to fill all the elements with the help of a loop that start from low to mid+1 and the other start from mid+1 to high +1. To understand the logic for +1 the last element is not considered in python range method so we have to increase the value by 1
4. Next is the while loop in which we will go from 0 to length1 and 0 to length 2 and there must be an **“and”** between them so it will put the elements based on if the element of the first loop is smaller than the second loop and vice versa
5. Lastly we will put the remaining elements by taking i<length1 and filling all the elements in the array and same goes for the other one

And that’s it.