

# Merge Sort

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In [ ]: # Getting array. The function runs till there are at least 10 elements in the array

def getVals(arr):

    print('Current length of array:', len(arr))
    print('Current array:', arr)

    arr += (input("Enter numbers separated by spaces: ").split())
    arr = [int(i) for i in arr if i.isdigit()]

    print('Current length of array:', len(arr))
    print('Current array:', arr)

    if len(arr) < 10:
        arr = getVals(arr)

    return arr
```

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In [ ]: # function to merge sort the array

def mergeSort(arr):
    if len(arr) > 1:
        flag = len(arr)//2
        arr1 = arr[:flag]
        arr2 = arr[flag:]

        mergeSort(arr1)
        mergeSort(arr2)

        i = j = k = 0

        while i < len(arr1) and j < len(arr2):
            if arr1[i] < arr2[j]:
                arr[k] = arr1[i]
                i += 1
            else:
                arr[k] = arr2[j]
                j += 1
            k += 1

        while i < len(arr1):
            arr[k] = arr1[i]
            i += 1
            k += 1

        while j < len(arr2):
            arr[k] = arr2[j]
            j += 1
            k += 1

        print(arr)

    return arr
```

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In [ ]:
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mergeSort(getVals([]))
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Current length of array: 0

Current array: []

Current length of array: 13

Current array: [1, 6, 43, 867, 32, 76, 25, 79, 90, 93, 68, 92, 36]

[6, 43]

[1, 6, 43]

[32, 76]

[32, 76, 867]

[1, 6, 32, 43, 76, 867]

[79, 90]

[25, 79, 90]

[68, 93]

[36, 92]

[36, 68, 92, 93]

[25, 36, 68, 79, 90, 92, 93]

[1, 6, 25, 32, 36, 43, 68, 76, 79, 90, 92, 93, 867]

Out[ ]: [1, 6, 25, 32, 36, 43, 68, 76, 79, 90, 92, 93, 867]

In [ ]: