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class MergeSort:
    def merge(self, arr, l, m, r):
        n1 = m - l + 1
        n2 = r - m

        L = [0] * n1
        R = [0] * n2

        for i in range(n1):
            L[i] = arr[l + i]
        for j in range(n2):
            R[j] = arr[m + 1 + j]

        i = 0
        j = 0
        k = l

        while i < n1 and j < n2:
            if L[i] <= R[j]:
                arr[k] = L[i]
                i += 1
            else:
                arr[k] = R[j]
                j += 1
            k += 1

        while i < n1:
            arr[k] = L[i]
            i += 1
            k += 1

        while j < n2:
            arr[k] = R[j]
            j += 1
            k += 1

    def sort(self, arr, l, r):
        if l < r:
            m = l + (r - l) // 2

            self.sort(arr, l, m)
            self.sort(arr, m + 1, r)

            self.merge(arr, l, m, r)

    @staticmethod

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def printArray(arr):
    n = len(arr)
    for i in range(n):
        print(arr[i], end=" ")
    print()

if __name__ == "__main__":
    arr = [12, 11, 13, 5, 6, 7]

    print("Given Array:")
    MergeSort.printArray(arr)

    ob = MergeSort()
    ob.sort(arr, 0, len(arr) - 1)

    print("\nSorted array:")
    MergeSort.printArray(arr)

```