CSE 221
LAB - 3

Task - 1] In this code I used merge sort. In this code merge sort is running and also its checking if $i > j$, if so, then the count increases. First it checks how many j is smaller than the i, that amount is added as count.

Task 2] In this code it also use merge sort. First it went to base case as single length array. After that it merges and checks for maximum value for $i + j$. finally returns the maximum value

Task 3] Quick sort also follows divide and conquer method. one function makes a pivot which is in correct position and pivots smaller values are in left

and larger values are in right. Recursivly this way it sorts the array and returns it.

Task 4| This task also use the partition part of the quick sort. This code we find a pivot then check if its smaller or larger than the k index. if smaller we increase or if largers then we decrease the pivot untill we find the kth value.