#TASK1

Simply followed the merge sort algorithm. Here I declared a merge list [] which is empty. Then I checked and appended the elements in the merged list. Finally I extended the remaining part int the merge sort list.

Task 2

Normally used a max_val function. where I checked the a>b, and returned a.

Code3

In this code I applied a basic algo that uses divide and conquere rule using mergeAnd CountInversions function. There I broke my array into small parts into. [4,3,2,1]

Suppose, [4 3 2 1]

[4 3] [2 1]

[4] [3] [2] [1]

1 swap [3, 4] [1, 2]. And it contin

Task 5

Here I used the concept of my CSE 221 assignment of theory.
How I divided my Id into parts like,

2 2 30 12 2 9.

↓

2 2 30 12 2 | 9.

Then used the last element as pivot.

Task 6

Same function used as task 5.
Used recursion to ~~swap~~ find the k^{th} value.