Data Structure Lab

Assignment-3

Date of Assignment: 10- August -2017 **Date of Submission: 17-August-2017**

1. Let A[n] be an array of n distinct integers. If i < j and A[i] > A[j], then the pair (i, j) is called an inversion of A.

   Example:

   If A[] = {2, 3, 8, 5 ,1}, then there are five inversions are (2, 1), (3,1), (8,1), (5,1), and (8, 5).

   Write a C program that determines the number of inversions in any permutation on n elements in θ (n lg n) worst-case time. (Hint: Modify merge sort)

2. Let A[n] be an array of n integers, and x be an integer. Write a C program that finds the k closest integers to X in A[].

   Example:

   If A[] = {2, 3, 8, 5 ,1}, X = 4 and k = 2, then print 3 and 5.
   If A[] = {2, 3, 8, 5 ,1}, X = 2 and k = 2, then print 1 and 2, or 2 and 3 (anyone is ok).

Submission Guideline

If (your roll number is between 16CS01001 and 16CS01022 || GANESH KUMAR)

Email to ARVIND (se10)

else

Email to RUPESH (vp14)