Common instruction for all three problems:

Generate a random array of length 20. All number must be positive and less than 500. Suppose the array name is **Arr.**

You may take help from this blog regarding how to generate random array in C:

https://www.codespeedy.com/generate-a-random-array-in-c-or-cpp/

-For problem 2 & 3 you can use any programming language you like. No restriction.

-Partial marking is available. So try to perform as much as you can.

Problem 1.

Use bubble sort algorithm to sort **Arr** in descending order.

You must use the code base for bubble sort I provided in the class. Do necessary modifications on that code to solve this problem. Any other implementation of bubble sort is not allowed!

Problem 2.

Write a program to find the inversion count of **Arr.**

Hint:

In any array **A**, a pair of indices (**i , j**) is called an inversion if **i>j** and **A[i]>A[j]**

For example:

A[ ] = [1, 9, 6, 4, 5]

There are 5 inversions in the array: (9, 6), (9, 4), (9, 5), (6, 4), (6, 5)

So the inversion count of **A** is 5

Problem 3.

Use selection sort algorithm to sort 1st half of the array **Arr** in descending order, and 2nd half of the array in ascending order. You can use any implementation of selection sort you like.

Points:

Problem no.	Points
1	10
2	10
3	10