Question 7

SecondLargest function take an array and it's size as arguments. In this function, Initialise a 'largest' Variable assign the first element of the array and initialise a SecondLargest Variable. Comparing the elements and assign the true values to the corresponding Variable. finally return the SecondLargest.

KthLargest function take an array and it's size and a Value for the K as arguments. firstly checking is the value of K is a Possible number. Then, it iteratively find the maximum element in the array K times. In each iteration updates the maxIndex to the index of the maximum element found so far. when it reaches the Kth iteration it will return the Kth Value.

The main function is taking an array as input from the user. SecondLargest function called to get second largest number. KthLargest function called to get Kth element.

Question 8

CountDuplicates function takes an array and it's size as arguments. initialise a array 'frequency' at size 256 with all elements to set 0. This array is used to store the the frequency at each character in the input array.

first loop iterates over the input array and increments the corresponding index in the frequency at each character in the array.

second loop iterates over the frequency array and checks for any elements with a frequency greater than 1. if a character occur more than once it calculates the number of duplicates by substracting 1 from the frequency and adds into the duplicates.

finally returns the duplicate elements.

The main function is taking an input array from the user. call a CountDuplicates function.

Question 9

'mergeArrays function takes two sorted arrays and it's size, result. as arguments.

The function initializes three indices: 'i' for arr1 'j' for arr2 and 'k' for 'result'. all initially set to 0.

the while loop in the function compare the elements of arr1 and arr2 one by one. It selects the smaller one and assigns it to result[]. Corresponding indexes increamented, k also. After while loop the remaining elements in arr1 and arr2 Two seperate while loops add items to result.

The main function takes arr1 and arr2 with same size from the user in sorted Then call function mergeArrays.