Assignment-49: A Job Ready Bootcamp in c++,DSA and IOT

unordered_set

1. Count of distinct pair sums in a given Array arr[] of size N, the task is to find the total number of unique pair sums possible from the array elements.
2. C++ Program to Print all triplets in sorted array that form AP(or Arithmetic Progression) Example..Input : arr[] = { 2, 6, 9, 12, 17, 22, 31, 32, 35, 42 };
   Output :
   6 9 12
   2 12 22
   12 17 22
   2 17 32
   12 22 32
   9 22 35
   2 22 42
   22 32 42
3. C++ Program for Number of unique triplets whose XOR is zero.
   Input : a[] = {1, 3, 5, 10, 14, 15};
   Output : 2
   Explanation : {1, 14, 15} and {5, 10, 15} are the
   unique triplets whose XOR is 0.
   {1, 14, 15} and all other combinations of
   1, 14, 15 are considered as 1 only.
   Input : a[] = {4, 7, 5, 8, 3, 9};
   Output : 1
   Explanation : {4, 7, 3} is the only triplet whose XOR is 0
4. C++ Program to give two arrays with size n, maximise the first array by using the elements from the second array such that the new array formed contains n greatest but unique elements of both the arrays giving the second array priority (All elements of second array appear before first array). The order of appearance of elements is kept the same in output as in input.
   Examples:
   Input : arr1[] = {2, 4, 3}
   arr2[] = {5, 6, 1}
   Output : 5 6 4
   As 5, 6 and 4 are maximum elements from two arrays giving the second array higher priority. Order of elements is the same in output as in input.
   Input : arr1[] = {7, 4, 8, 0, 1}
   arr2[] = {9, 7, 2, 3, 6}
   Output : 9 7 6 4 8
5. C++ Program to given an array of positive and negative numbers, find if there is a subarray (of size at-least one) with 0 sum.
   Examples :
   Input: {4, 2, -3, 1, 6}
   Output: true
   Explanation:

There is a subarray with zero sum from index 1 to 3.
Input: {4, 2, 0, 1, 6}
Output: true
Explanation:
There is a subarray with zero sum from index 2 to 2.

6. Given an array arr[] consisting of N positive integers, the task is to find the number of pairs such that the Greatest Common Divisor(GCD) of the pairs is not a prime number. The pair (i, j) and (j, i) are considered the same.
   Examples:
   Input: arr[] ={ 2, 3, 9}
   Output: 10
   Explanation:
   Following are the possible pairs whose GCD is not prime:
   (0, 1): The GCD of arr[0](= 2) and arr[1](= 3) is 1.
   (0, 2): The GCD of arr[0](= 2) and arr[2](= 9) is 1.
   Therefore, the total count of pairs is 2.
   Input: arr[] = {3, 5, 2, 10}
   Output: 4
7. Given an array of strings arr[] of size N, the task is to print all the distinct strings present in the given array.
   Examples:
   Input: arr[] = { “Good”, “God”, “Good”, “God”, “god” }
   Output: god Good God
8. Find all matrix elements which are minimum in their row and maximum in their column
9. Given N strings of equal lengths. The strings contain only digits (1 to 9). The task is to count the number of strings that have an index position such that the digit at this index position is greater than the digits at the same index position of all the other strings.
   Examples:
   Input: arr[] = {“223”, “232”, “112”}
   Output: 2
   First digit of the 1st and 2nd strings are the largest.
   Second digit of the string 2nd is the largest.
   Third digit of the string 1st is the largest.

   Input: arr[] = {“999”, “122”, “111”}
   Output: 1

10. Unordered_set operators in C++ STL(== and !=)