Coding Assignment-3

Q1. Find the sum of all possible pairs in an array of N elements

Given an array **arr[]** of **N** integers, the task is to find the sum of all the pairs possible from the given array. Note that,

1. **(arr[i], arr[i])** is also considered as a valid pair.
2. **(arr[i], arr[j])** and **(arr[j], arr[i])** are considered as two different pairs.

Examples:

Input: arr[] = {1, 2}
Output: 12
All valid pairs are (1, 1), (1, 2), (2, 1) and (2, 2).
1 + 1 + 1 + 2 + 2 + 1 + 2 + 2 = 12

Q2. Program to print all the distinct elements in an array. Distinct elements are nothing but the unique (non-duplicate) elements present in the given array.

SAMPLE INPUT:

- size of an array = 10
- array elements = 5,3,2,9,7.6,4,5,9,1

SAMPLE OUTPUT:

- 3 2 7 6 4 1

Q3. Program to sort first half of an array in ascending and second half in descending order.

Input : arr[] = {5, 4, 6, 2, 1, 3, 8, 9, 7 }
Output : arr[] = {2, 4, 5, 6, 9, 8, 7, 3, 1 }

Q4. **Program to sort elements by frequency in a given array. You need to print the elements of an array in the decreasing frequency and if 2 numbers have same frequency then print the one which came first.**

Input: 2, 3, 5, 3, 9, 6, 3, 3, 2, 5, 2

Output: 3 3 3 3 2 2 2 5 5 9 6

Q5. **Program to find all triplets with the given sum in the given array. Given an array of integers and a sum value, we need to iterate through the array and find all possible triplets that sum to the given value.**

For example:

Consider the array: arr[] = {0, -1, 2, -3, 1}. The given sum is -2. In the given array, the triplets with sum = -2 are {0, -3, 1} and {-1, 2, -3}.