Assignment on Arrays and Strings

1.Given an array of 0's and 1's your task is to complete the function **maxLen** which returns size of the largest subarray with equal number of 0's and 1's

Example: 0 1 0 1 has max length of 4

0 0 1 0 0 has max length of 2

Hint: Consider 0 as -1 and evaluate sum of each subarray using 2 loops.

2. Given an array **A** (distinct elements) of size **N**. Rearrange the elements of array in zig-zag fashion. The converted array should be in form **a < b > c < d > e < f.** Changes should be made in original array only.

Example:4 3 7 8 6 2 1 is changed to 3 7 4 8 2 6 1

3. Check if a given number can be expressed as the sum of two prime numbers and print all the pairs.

4. Given an array **A** of **N** positive numbers. The task is to find the position where equilibrium first occurs in the array.

Equilibrium position in an array is a position such that the sum of elements below it is equal to the sum of elements after it.

Example: 1 3 5 2 2 has equilibrium at position 3.

5.Given an array of integers, write a function that returns true if there is a triplet (a, b, c) that satisfies $a_2 + b_2 = c_2$.

Example: 3 1 4 6 5 returns true as (3,4,5) is a pythagorean triplet.

Note: Do this question in O(n^2)

6. Write a method to replace all spaces with %20 in a given string.

Example: Mr. John Smith Output: Mr.%20John%20Smith