1. Find four elements a, b, c and d in an array such that a+b = c+d

Input: {3, 4, 7, 1, 2, 9, 8}

Output: (3, 8) and (4, 7)

Explanation: 3+8 = 4+7

Input: {65, 30, 7, 90, 1, 9, 8};

Output: No pairs found

1. Given a number N, find the largest prime factor of that number.

Input: 90

Output: 5

Input: 84

Output: 7

1. Given a string, find the length of the **longest substring** without repeating characters.

**Input:** "abcabcbb"

**Output:** 3

**Explanation:** The answer is "abc", with the length of 3.

1. King is preparing for the war and has decided to supply weapones to his soldiers.

* There are N weapones which are placed on each other (stacked) in a case, The weapones are either sword or spear.
* Each soldier has his/her own expertise for the type of weapon. They are queued to receive their favorite weapon.
* If the soldier finds that the weapon at the top of the case is NOT as per his/her expertise he/she will go back and rejoin the queue and process will continue.
* If the soldier finds that the weapon at the top of the case is as per his/her expertise he/she will leave the queue along with the weapon at the top.
* Estimate the number of soldiers who will not be able to get the weapon.

Input Format:

**Input 1:** N denoting the number of soldiers and weapones.

**Input 2:** An array/stack of N elements. each element denoting the type of weapon from top to bottom. Can be either 0 (sword) or 1 (spear).

**Input 3**: An array/queue of N elements. each element denoting the soldier standing with expertise 0 (sword) or 1 (spear) from the start till the end of the queue.

Output Formats:

For the given input your code should output the number of soldiers who will not be able to get the weapon.

Sample Input 1:

4 – Number of soldiers and weapons.

0010 – Types of weapons.

1000 – Expertise of respective soldiers.

Sample output 1:

0(every one should get the weapon)

Sample input 2:

6

011010

111010

Sample output 2:

1(One soldier won’t get the weapon)

Sample input 3:

1010

0000

Sample out 3:

4 (None of the soldier will get the weapons)