1. Given arrival and departure times of all trains that reach a railway station. Find the minimum number of platforms required for the railway station so that no train is kept waiting.

Consider that all the trains arrive on the same day and leave on the same day. Arrival and departure time can never be the same for a train but we can have arrival time of one train equal to departure time of the other.

At any given instance of time, same platform can’t be used for both departure of a train and arrival of another train. In such cases we use different platforms

Example 1

Input: n = 6

a[] = {0900,0940,0950,1100,1500,1800}

d[] = {0910,1200,1120,1130,1900,2000}

Output:3

Explanation: Minimum 3 platforms are required to safely drive and depart all trains

2. Given an array a[] denoting heights of N towers and a positive integer K , you have to modify the height of each tower either by increasing or decreasing them by K only once . After modifying, height should be a non-negative integer

Find out the minimum possible difference of the height of shortest and longest towers after you have modified each tower.

Note: It is compulsory to increase or decrease (If possible) by K to each tower

Example 1:

input:

K = 2 , N = 4

a[] = {1,5,8,10}

Output:

5

Explanation:

The array can be modified as {3,3,6,8} . The difference between the largest and the smallest is 8-3 = 5

3. Alex works at a clothing store . There is a large pile of socks that must be paired by color for sale. Given an array of integers representing the color of each sock , determine how many pairs of socks with matching colors these are

For example , there are n = 7 socks with colors a = {1,2,1,2,1,3,2} . There is one pair of color 1 and one of color 2 . There are three odd socks left , one of each color . The number of pairs is 2 .

Function Description:

Complete the sockMerchant function in the editor below . It must return an integer representing the number of matching pairs of socks that are available.

sockMerchant has the following parameters :

n : the number of socks in the pile

a : the colors of each sock

Input Format:

The first line contains an integer n , the number of socks represented in a .

The second line contains n space-separated integers describing the colors a[i] of the socks in the pile.

Constraints:

1 <=n <=100

1<= a[i] <=100 & 0<=i < n

Output Format:

Return the total number of matching pairs of socks that Alex can sell.

Sample Input:

9

10 20 20 10 10 30 50 10 20

Sample Output:

3

Explanation :

Alex can match 3 pairs of socks i.e 10-10 ,10-10,20-20 while the left out socks are 50,60,20