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Advanced Coding-1 | Advanced Coding-2

Note : You need to press "Final Submit" for your program to be considered for evalua
auto-closed due to time

Program Editor

A game is played with 'N' numbered balls. The balls are placed on a table and each ball is labeled with an integer. The game is played by dividing the balls into 2 empty boxes such that the difference between the largest number and smallest number of the balls in each box is exactly the same.

- The value of a ball can either be increased or decreased by 1 if required to get the desired result. This is called a turn.
- The difference should be between the biggest and the smallest numbered balls in the particular box. If there is only one ball in any box, the number of this ball will be called the difference for this box.
- The goal of the game is to achieve the same difference between the largest number and smallest number of the balls in each box.
- A ball should be exclusive to one box i.e., a ball present in one box should not be present in the other.
- Both the boxes may or may not contain the same

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present in one box should not be present in the other.

- Both the boxes may or may not contain the same number of balls to reach the goal.

The task is to find the minimum number of turns needed to achieve the goal.

Example 1:

Input:

4 -> Value of N

{5,2,3,1} -> a[], Elements a[0]to a[N-1],where each input element is separated by new line

Output:

1

Explanation:

From the inputs given above:

Way 1:

If we divide the balls into 2 boxes as

Box 1: {5,1}; Difference: 5-1=4

Box 2: {2,3}; Difference: 3-2=1

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If we divide the balls into 2 boxes as
Box 1: {5,1}, Difference: 5-1=4
Box 2: {2,3}, Difference: 3-2=1
Invalid

Way 2:
If we divide the balls into 2 boxes as
Box 1: {5}, Difference: 5-0=5
Box 2: {2,3,1}, Difference: 3-1=2
In box 2, the highest number is 3 and the lowest number is 1.
Invalid

Since dividing the boxes with the given numbered balls doesn't give the same difference.
If we increase the value of ball 2 by 1 in one turn.
The resulting array will be a[]={5,3,3,1}

Way 3:
If we divide the balls into 2 boxes as
Box 1: {5,3}, Difference: 5-3=2
Box 2: {3,1}, Difference: 3-1=2

Note : You need to press "Final Submit" for your program to be con

If we divide the balls into 2 boxes as
Box 1: {5,3}, Difference: 5-3=2
Box 2: {3,1}, Difference: 3-1=2

So, using way 3, we can achieve the same difference in both the boxes. The number of turns required is 1.
Hence, the output is 1.

Example 2:

Input:

5 -> Value of N
{7,3,5,5,5} -> a[], Elements a[0]to a[N-1],where each input element is separated by new line

Output:

0

Explanation:

From the inputs given above:
Way 1:
If we divide the balls into 2 boxes as
Box 1: {7,3}, Difference: 7-3=4
Box 2: {5,5,5}, Difference: 5-5=0

Advanced Coding-2

Note : You need to press "Final Submit" for your program to be

If we divide the balls into 2 boxes as
Box 1: {7,3}, Difference: 7-3=4
Box 2: {5,5,5}, Difference: 5-5=0
Invalid

Way 2:
If we divide the balls into 2 boxes as
Box 1: {7,3,5}, Difference: 7-3=4
Box 2: {5,5}, Difference: 5-5=0
Invalid

Way 3:
If we divide the balls into 2 boxes as
Box 1: {5,3}, Difference: 5-3=2
Box 2: {7,5,5}, Difference: 7-5=2

So, using way 3, we can achieve the same difference in both the boxes. The number of turns required is 0.
Hence, the output is 0.

Note : You need to press "Final Submit" for your program

Constraints:

- 3<N<=1000
- 0<=a[i]<=1000 for all i=0, ..., N-1

The Input format for testing:

The candidate has to write the code to accept 3 input(s).

- First Input – Accept value for N (Positive integer number)
- Second Input – Accept N number of positive integer values(a[]), where each value is separated by a new line.

The Output format for testing:

- The output should be a positive integer number or print the message (if any) given in the problem statement (Check the output in Example 1, Example 2)
- Additional messages in output will cause the failure of test cases.

Instructions:

app.codility.com/c/run/AT

Ooops, seems like you're offline. Check your internet connection.

Task 2

Java 8

Write a function:

```
class Solution { public int solution(int A, int B); }
```

that, given two non-negative integers A and B, returns the number of bits set to 1 in the binary representation of the number A * B.

For example, given A = 3 and B = 7 the function should return 3, because the binary representation of A * B = 3 * 7 = 21 is `10101` and it contains three bits set to 1.

Assume that:

- A and B are integers within the range [0..100,000,000].

In your solution, focus on **correctness**. The performance of your solution will not be the focus of the assessment.