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Parity Game   🔒 locked

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Mancunian is playing the famous Parity Game. In this game, the player is given an array A comprising of n positive integers. The goal is to remove some (possibly empty) subsequence of these integers so that the sum of the resulting array is even. The player is **NOT** allowed to remove all the numbers (i.e. the resulting array should be nonempty).

There can be multiple possible subsequences that can be removed to achieve this. Print the size of the smallest such subsequence. If there is no such subsequence, print -1.

Input Format

The first line of input contains the size of the array, n.
The second line contains n space-separated integers, the ith of which contains A_i.

Constraints

- $1 \leq n \leq 10^3$
- $1 \leq A_i \leq 10^3$

Output Format

Print a single integer which is the answer to the given problem.

Sample Input 0

```
5
1 2 3 4 5
```

Sample Output 0

```
1
```

Explanation 0

The array is $[1, 2, 3, 4, 5]$.

Some of the possible subsequences you can remove are $[1]$, $[3]$, $[5]$, $[1, 2]$, $[3, 4]$, $[1, 4]$ and $[1, 3, 5]$ among others. For example, if we remove the subsequence $[1, 4]$ from $[1, 2, 3, 4, 5]$, we get $[2, 3, 5]$ which has an even sum.

The smallest *size* among these is 1, hence we print 1.

Sample Input 1

```
4
1 2 3 4
```

Sample Output 1

```
0
```

Explanation 1

The player doesn't need to remove any integer.

Current Buffer (saved locally, editable)

C#

```csharp
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication2
{
    class Program
    {
        static void Main(string[] args)
        {
            //int[] arr = { 1, 2, 3, 4, 5 };
            int n = int.Parse(Console.ReadLine());
            int[] arr = Array.ConvertAll(Console.ReadLine().Trim().Split(' '), e => int.Parse(e));

            int sum = arr.Sum();

            if (arr.Length == 1 && sum % 2 != 0)
            {
                Console.WriteLine(-1);
            }

            else if (sum % 2 != 0)
            {
                int i;
                for ( i = 0; i < arr.Length; i++)
                {
                    if (arr[i] % 2 != 0 && arr.Length > 1)
                    {
                        Console.WriteLine(1);
                        break;
                    }
                }
                if (i == arr.Length)
                {
                    Console.WriteLine(-1);
                }
            }
            else
            {
                Console.WriteLine(0);
            Console.ReadLine();
        }
    }
}
```

Line: 47 Col: 1

⬆ Upload Code as File   ☐ Test against custom input   Run Code   Submit Code

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