R. Tanya and Candies

time limit per test: 1 second
memory limit per test: 256 megabytes

Tanya has n candies numbered from 1 to n. The i-th candy has the weight a_i.

She plans to eat exactly $n-1$ candies and give the remaining candy to her dad. Tanya eats candies in order of increasing their numbers, **exactly one candy per day**.

Your task is to find the number of such candies i (let's call these candies **good**) that if dad gets the i-th candy then the sum of weights of candies Tanya eats in even days will be equal to the sum of weights of candies Tanya eats in odd days. Note that at first, she will give the candy, after it she will eat the remaining candies one by one.

For example, $n=4$ and weights are $[1,4,3,3]$. Consider all possible cases to give a candy to dad:

- Tanya gives the 1-st candy to dad ($a_1=1$), the remaining candies are $[4,3,3]$. She will eat $a_2=4$ in the first day, $a_3=3$ in the second day, $a_4=3$ in the third day. So in odd days she will eat $4+3=7$ and in even days she will eat 3. Since $7 \neq 3$ this case shouldn't be counted to the answer (this candy isn't **good**).
- Tanya gives the 2-nd candy to dad ($a_2=4$), the remaining candies are $[1,3,3]$. She will eat $a_1=1$ in the first day, $a_3=3$ in the second day, $a_4=3$ in the third day. So in odd days she will eat $1+3=4$ and in even days she will eat 3. Since $4 \neq 3$ this case shouldn't be counted to the answer (this candy isn't **good**).
- Tanya gives the 3-rd candy to dad ($a_3=3$), the remaining candies are $[1,4,3]$. She will eat $a_1=1$ in the first day, $a_2=4$ in the second day, $a_4=3$ in the third day. So in odd days she will eat $1+3=4$ and in even days she will eat 4. Since $4=4$ this case **should be counted** to the answer (this candy is **good**).
- Tanya gives the 4-th candy to dad ($a_4=3$), the remaining candies are $[1,4,3]$. She will eat $a_1=1$ in the first day, $a_2=4$ in the second day, $a_3=3$ in the third day. So in odd days she will eat $1+3=4$ and in even days she will eat 4. Since $4=4$ this case **should be counted** to the answer (this candy is **good**).

In total there 2 cases which should counted (these candies are **good**), so the answer is 2.

Input

The first line of the input contains one integer n ($1 \le n \le 2 \cdot 10^5$) — the number of candies.

The second line of the input contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^4$), where a_i is the weight of the i-th candy.

Output

Print one integer — the number of such candies i (**good** candies) that if dad gets the i-th candy then the sum of weights of candies Tanya eats in even days will be equal to the sum of weights of candies Tanya eats in odd days.

Examples

input Copy

```
7
5 5 4 5 5 5 6
```

output Copy

```
2
```

input Copy

```
8
4 8 8 7 8 4 4 5
```

output Copy

```
2
```

input Copy

```
9
2 3 4 2 2 3 2 2 4
```

output Copy

```
3
```

Note

In the first example indices of **good** candies are $[1,2]$.

In the second example indices of **good** candies are $[2,3]$.

In the third example indices of **good** candies are $[4,5,9]$.

ICPC Assiut University Training - Juniors Phase 1 Sheets-2022
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- Juniors Phase 1 Practice #5 (Bitmask, Bitset, Bits)
- Juniors Phase 1 Practice #4 (Binary search , Two pointers)
- Juniors Phase 1 Practice #3 (STL 2)
- Juniors Phase 1 Practice #2 (STL 1)
- Juniors Phase 1 Practice #1 (Prefix sum , Frequency Array)

Juniors Phase 1 Practice #1 (Prefix sum , Frequency Array)
Finished
Practice

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Start virtual contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
247718059	Feb/22/2024 12:13	Accepted
247669270	Feb/22/2024 00:12	Accepted
247594419	Feb/21/2024 12:58	Accepted