

Week 2: Assignment 2 - Question 1

Parity Checker

You are given a sequence of bits (1's and 0's).

The sequence is said to have *even parity* if and only if the number of 1's in the sequence is even.

Write a C program to that outputs 1 if the sequence has even parity and 0 otherwise.

Input

A sequence of bits (0's and 1's) ending with a -1.

(Note : -1 is not a part of input. It only signifies that input has ended)

Output

1 if the number of ones in the sequence is even.

0 if the number of ones in the sequence is odd.

Sample Inputs and Outputs

Sample input 1

```
0 1 1 -1
```

Sample Output 1

```
1
```

Explanation

The input sequence is 011 . It has two ones. Since 2 is even, the sequence has even parity.

Sample input 2

```
0 1 0 1 0 1 -1
```

Sample Output 1

```
0
```

Explanation

The input sequence is 010101 . The number of 1's is three. Since 3 is odd, the sequence does not have even parity.