Circular Array Loop

Try to solve the Circular Array Loop problem.

We'll cover the following

Statement

An input array, `nums` containing non-zero integers, is given, where the value at each index represents the number of places to skip forward (if the value is positive) or backward (if the value is negative). When skipping forward or backward, wrap around if you reach either end of the array. For this reason, we are calling it a circular array. Determine if this circular array has a cycle. A cycle is a sequence of indices in the circular array characterized by the following:

- The same set of indices is repeated when the sequence is traversed in accordance with the aforementioned rules.
- The length of the sequence is at least two.
- The loop must be in a single direction, forward or backward.

It should be noted that a cycle in the array does not have to originate at the beginning. A cycle can begin from any point in the array.

Constraints:

- $1 \leq$ `nums.length` $\leq 10^4$
- $-5000 \leq$ `nums[i]` ≤ 5000
- `nums[i]` $! = 0$

Examples

Sample example 1

Input

1	3	-2	-4	1

Output

TRUE

Starting with the first element, 1, and move one step forward to 3. Then, continue by moving three steps forward to the last element, 1, and finally return to the first element, 1, again.

Understand the problem

Let’s take a moment to make sure you’ve correctly understood the problem. The quiz below helps you check if you’re solving the correct problem:

Circular Array Loop

1 Can we detect the loop if the [3, -3, 2, -2] array is given as input?

A) Yes

B) No

Submit Answer

Question 1 of 5
0 attempted

Reset Quiz

Figure it out!

We have a game for you to play. Rearrange the logical building blocks to develop a clearer understanding of how to solve this problem.

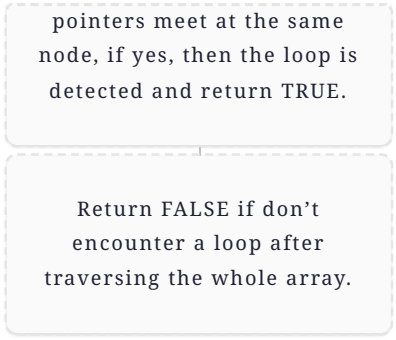
Drag and drop the cards to rearrange them in the correct sequence.

Traverse the entire `nums` array using slow and fast pointers, starting from index 0.

Move the slow pointer one time forward/backward and the fast pointer two times forward/backward.

If loop direction changes at any point or taking a step returns to the same location, continue to the next element.

If the direction does not change, check whether both



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Try it yourself

Java

usercode > CircularArrayLoop.java

```java
import java.util.*;
public class CircularArrayLoop{
   public static boolean circularArrayLoop(int[] nums) {

       // Your code will replace this placeholder return statement

       return false;
   }
}
```

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Test Cases | Results

Case 1 | Case 2 | Case 3

Input #1

[1,3,-2,-4,1]

Circular Array Loop

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