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Solution

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281. Zigzag Iterator

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Given two vectors of integers `v1` and `v2`, implement an iterator to return their elements alternately.

Implement the `ZigzagIterator` class:

- `ZigzagIterator(List<int> v1, List<int> v2)` initializes the object with the two vectors `v1` and `v2`.
- `boolean hasNext()` returns `true` if the iterator still has elements, and `false` otherwise.
- `int next()` returns the current element of the iterator and moves the iterator to the next element.

Example 1:

Input: `v1 = [1,2], v2 = [3,4,5,6]`
Output: `[1,3,2,4,5,6]`
Explanation: By calling `next` repeatedly until `hasNext` returns `false`, the order of elements returned by `next` should be: `[1,3,2,4,5,6]`.

Example 2:

Input: `v1 = [1], v2 = []`
Output: `[1]`

Example 3:

Input: `v1 = [], v2 = [1]`
Output: `[1]`

Constraints:

- $0 \leq v1.length, v2.length \leq 1000$
- $1 \leq v1.length + v2.length \leq 2000$
- $-2^{31} \leq v1[i], v2[i] \leq 2^{31} - 1$

Follow up: What if you are given `k` vectors? How well can your code be extended to such cases?

Clarification for the follow-up question:

The "Zigzag" order is not clearly defined and is ambiguous for $k > 2$ cases. If "Zigzag" does not look right to you, replace "Zigzag" with "Cyclic".

Follow-up Example:

Input: `v1 = [1,2,3], v2 = [4,5,6,7], v3 = [8,9]`
Output: `[1,4,8,2,5,9,3,6,7]`

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```
public class ZigzagIterator {  
    public ZigzagIterator(List<Integer> v1, List<Integer> v2) {  
    }  
  
    public int next() {  
    }  
  
    public boolean hasNext() {  
    }  
}
```

/**
 * Your ZigzagIterator object will be instantiated and called as such:
 * ZigzagIterator i = new ZigzagIterator(v1, v2);
 * while (i.hasNext()) v[f()] = i.next();
 */

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