Problem 1265: Print Immutable Linked List in Reverse

Problem Information

Difficulty: Medium
Acceptance Rate: 94.07%
Paid Only: Yes
Tags: Linked List, Two Pointers, Stack, Recursion

Problem Description

You are given an immutable linked list, print out all values of each node in reverse with the help of the following interface:

* `ImmutableListNode`: An interface of immutable linked list, you are given the head of the list.

You need to use the following functions to access the linked list (you **can 't** access the `ImmutableListNode` directly):

* `ImmutableListNode.printValue()`: Print value of the current node. * `ImmutableListNode.getNext()`: Return the next node.

The input is only given to initialize the linked list internally. You must solve this problem without modifying the linked list. In other words, you must operate the linked list using only the mentioned APIs.

Example 1:

Input: head = [1,2,3,4] **Output:** [4,3,2,1]

Example 2:

Input: head = [0,-4,-1,3,-5] **Output:** [-5,3,-1,-4,0]

Example 3:

Input: head = [-2,0,6,4,4,-6] **Output:** [-6,4,4,6,0,-2]

Constraints:

* The length of the linked list is between `[1, 1000]`. * The value of each node in the linked list is between `[-1000, 1000]`.

Follow up:

Could you solve this problem in:

* Constant space complexity? * Linear time complexity and less than linear space complexity?

Code Snippets

C++:

```
/**
 * // This is the ImmutableListNode's API interface.
 * // You should not implement it, or speculate about its implementation.
 * class ImmutableListNode {
 * public:
 * void printValue(); // print the value of the node.
 * ImmutableListNode* getNext(); // return the next node.
 * };
 */

class Solution {
public:
void printLinkedListInReverse(ImmutableListNode* head) {

}
};
```

Java:

```
/**
 * // This is the ImmutableListNode's API interface.
 * // You should not implement it, or speculate about its implementation.
 * interface ImmutableListNode {
```

```
 * public void printValue(); // print the value of this node.
 * public ImmutableListNode getNext(); // return the next node.
 * };
 */

class Solution {
public void printLinkedListInReverse(ImmutableListNode head) {


}
}
```

Python3:

```python
# """
# This is the ImmutableListNode's API interface.
# You should not implement it, or speculate about its implementation.
# """
# class ImmutableListNode:
# def printValue(self) -> None: # print the value of this node.
# def getNext(self) -> 'ImmutableListNode': # return the next node.

class Solution:
def printLinkedListInReverse(self, head: 'ImmutableListNode') -> None:
```