382. Linked List Random Node

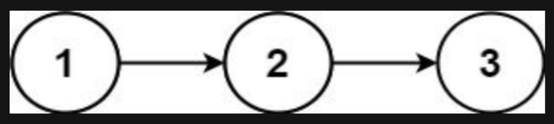
Description

Given a singly linked list, return a random node's value from the linked list. Each node must have the **same probability** of being chosen.

Implement the `Solution` class:

- `Solution(ListNode head)` Initializes the object with the head of the singly-linked list `head`.
- `int getRandom()` Chooses a node randomly from the list and returns its value. All the nodes of the list should be equally likely to be chosen.

Example 1:




```
Input
["Solution", "getRandom", "getRandom", "getRandom", "getRandom", "getRandom"]
[[[1, 2, 3]], [], [], [], [], []]
Output
[null, 1, 3, 2, 2, 3]

Explanation
Solution solution = new Solution([1, 2, 3]);
solution.getRandom(); // return 1
solution.getRandom(); // return 3
solution.getRandom(); // return 2
solution.getRandom(); // return 2
solution.getRandom(); // return 3
// getRandom() should return either 1, 2, or 3 randomly. Each element should have equal probability of returning.
```

Constraints:

- The number of nodes in the linked list will be in the range `[1, 10^4]`.
- `-10^4 <= Node.val <= 10^4`
- At most `10^4` calls will be made to `getRandom`.

Follow up:

- What if the linked list is extremely large and its length is unknown to you?
- Could you solve this efficiently without using extra space?