384. Shuffle an Array

Given an integer array nums, design an algorithm to randomly shuffle the array. All permutations of the array should be equally likely as a result of the shuffling.

Implement the Solution class:

- Solution(int[] nums) Initializes the object with the integer array nums.
- int[] reset() Resets the array to its original configuration and returns it.
- int[] shuffle() Returns a random shuffling of the array.

Example 1:

Input

["Solution", "shuffle", "reset", "shuffle"]

[[[1, 2, 3]], [], [], []]

Output

[null, [3, 1, 2], [1, 2, 3], [1, 3, 2]]

Explanation

Solution solution = new Solution([1, 2, 3]);

solution.shuffle(); // Shuffle the array [1,2,3] and return its result.

// Any permutation of [1,2,3] must be equally likely to be returned.

// Example: return [3, 1, 2]

solution.reset(); // Resets the array back to its original configuration [1,2,3]. Return [1, 2, 3]

solution.shuffle(); // Returns the random shuffling of array [1,2,3]. Example: return [1, 3, 2]

Constraints:

- $1 <= nums.length <= 50$
- $-10^6 <= nums[i] <= 10^6$
- All the elements of nums are unique.
- At most 10^4 calls in total will be made to reset and shuffle.