Problem 659: Split Array into Consecutive Subsequences

Problem Information

Difficulty: Medium
Acceptance Rate: 51.86%
Paid Only: No
Tags: Array, Hash Table, Greedy, Heap (Priority Queue)

Problem Description

You are given an integer array `nums` that is **sorted in non-decreasing order**.

Determine if it is possible to split `nums` into **one or more subsequences** such that **both** of the following conditions are true:

* Each subsequence is a **consecutive increasing sequence** (i.e. each integer is **exactly one** more than the previous integer). * All subsequences have a length of `3`**or more**.

Return `true` _if you can split_`nums` _according to the above conditions, or_`false` _otherwise_.

A **subsequence** of an array is a new array that is formed from the original array by deleting some (can be none) of the elements without disturbing the relative positions of the remaining elements. (i.e., `[1,3,5]` is a subsequence of `[_1_ ,2,_3_ ,4,_5_]` while `[1,3,2]` is not).

Example 1:

Input: nums = [1,2,3,3,4,5] **Output:** true **Explanation:** nums can be split into the following subsequences: [**_1_** ,**_2_** ,**_3_** ,3,4,5] --> 1, 2, 3 [1,2,3,**_3_** ,**_4_** ,**_5_**] --> 3, 4, 5

Example 2:

Input: nums = [1,2,3,3,4,4,5,5] **Output:** true **Explanation:** nums can be split into the following subsequences: [**_1_** ,**_2_** ,**_3_** ,3,**_4_** ,4,**_5_** ,5] --> 1, 2, 3, 4, 5

[1,2,3,**_3_** ,4,**_4_** ,5,**_5_**] --> 3, 4, 5

Example 3:

Input: nums = [1,2,3,4,4,5] **Output:** false **Explanation:** It is impossible to split nums into consecutive increasing subsequences of length 3 or more.

Constraints:

* `1 <= nums.length <= 104` * `-1000 <= nums[i] <= 1000` * `nums` is sorted in **non-decreasing** order.

Code Snippets

C++:

```
class Solution {
public:
bool isPossible(vector<int>& nums) {

}
};
```

Java:

```
class Solution {
public boolean isPossible(int[] nums) {

}
}
```

Python3:

```
class Solution:
def isPossible(self, nums: List[int]) -> bool:
```