Problem 1953: Maximum Number of Weeks for Which You Can Work

Problem Information

Difficulty: Medium
Acceptance Rate: 42.01%
Paid Only: No
Tags: Array, Greedy

Problem Description

There are `n` projects numbered from `0` to `n - 1`. You are given an integer array `milestones` where each `milestones[i]` denotes the number of milestones the `ith` project has.

You can work on the projects following these two rules:

* Every week, you will finish **exactly one** milestone of **one** project. You **must** work every week. * You **cannot** work on two milestones from the same project for two **consecutive** weeks.

Once all the milestones of all the projects are finished, or if the only milestones that you can work on will cause you to violate the above rules, you will **stop working**. Note that you may not be able to finish every project's milestones due to these constraints.

Return _the**maximum** number of weeks you would be able to work on the projects without violating the rules mentioned above_.

Example 1:

Input: milestones = [1,2,3] **Output:** 6 **Explanation:** One possible scenario is: - During the 1st week, you will work on a milestone of project 0. - During the 2nd week, you will work on a milestone of project 2. - During the 3rd week, you will work on a milestone of project 1. - During the 4th week, you will work on a milestone of project 2. - During the 5th week, you will work on a milestone of project 1. - During the 6th week, you will work on a milestone of project 2. The total number of weeks is 6.

Example 2:

Input: milestones = [5,2,1] **Output:** 7 **Explanation:** One possible scenario is: - During the 1st week, you will work on a milestone of project 0. - During the 2nd week, you will work on a milestone of project 1. - During the 3rd week, you will work on a milestone of project 0. - During the 4th week, you will work on a milestone of project 1. - During the 5th week, you will work on a milestone of project 0. - During the 6th week, you will work on a milestone of project 2. - During the 7th week, you will work on a milestone of project 0. The total number of weeks is 7. Note that you cannot work on the last milestone of project 0 on 8th week because it would violate the rules. Thus, one milestone in project 0 will remain unfinished.

Constraints:

* `n == milestones.length` * `1 <= n <= 105` * `1 <= milestones[i] <= 109`

Code Snippets

C++:

```
class Solution {
public:
long long numberOfWeeks(vector<int>& milestones) {

}
};
```

Java:

```
class Solution {
public long numberOfWeeks(int[] milestones) {

}
}
```

Python3:

```
class Solution:
def numberOfWeeks(self, milestones: List[int]) -> int:
```