Problem 2453: Destroy Sequential Targets

Problem Information

Difficulty: Medium
Acceptance Rate: 41.35%
Paid Only: No
Tags: Array, Hash Table, Counting

Problem Description

You are given a **0-indexed** array `nums` consisting of positive integers, representing targets on a number line. You are also given an integer `space`.

You have a machine which can destroy targets. **Seeding** the machine with some `nums[i]` allows it to destroy all targets with values that can be represented as `nums[i] + c * space`, where `c` is any non-negative integer. You want to destroy the **maximum** number of targets in `nums`.

Return _the**minimum value** of _`nums[i]`_you can seed the machine with to destroy the maximum number of targets._

Example 1:

Input: nums = [3,7,8,1,1,5], space = 2 **Output:** 1 **Explanation:** If we seed the machine with nums[3], then we destroy all targets equal to 1,3,5,7,9,... In this case, we would destroy 5 total targets (all except for nums[2]). It is impossible to destroy more than 5 targets, so we return nums[3].

Example 2:

Input: nums = [1,3,5,2,4,6], space = 2 **Output:** 1 **Explanation:** Seeding the machine with nums[0], or nums[3] destroys 3 targets. It is not possible to destroy more than 3 targets. Since nums[0] is the minimal integer that can destroy 3 targets, we return 1.

Example 3:

Input: nums = [6,2,5], space = 100 **Output:** 2 **Explanation:** Whatever initial seed we select, we can only destroy 1 target. The minimal seed is nums[1].

Constraints:

* `1 <= nums.length <= 105` * `1 <= nums[i] <= 109` * `1 <= space <= 109`

Code Snippets

C++:

```
class Solution {
public:
int destroyTargets(vector<int>& nums, int space) {

}
};
```

Java:

```
class Solution {
public int destroyTargets(int[] nums, int space) {

}
}
```

Python3:

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