Problem 3444: Minimum Increments for Target Multiples in an Array

Problem Information

Difficulty: Hard
Acceptance Rate: 26.51%
Paid Only: No
Tags: Array, Math, Dynamic Programming, Bit Manipulation, Number Theory, Bitmask

Problem Description

You are given two arrays, `nums` and `target`.

In a single operation, you may increment any element of `nums` by 1.

Return **the minimum number** of operations required so that each element in `target` has **at least** one multiple in `nums`.

Example 1:

Input: nums = [1,2,3], target = [4]

Output: 1

Explanation:

The minimum number of operations required to satisfy the condition is 1.

* Increment 3 to 4 with just one operation, making 4 a multiple of itself.

Example 2:

Input: nums = [8,4], target = [10,5]

Output: 2

Explanation:

The minimum number of operations required to satisfy the condition is 2.

* Increment 8 to 10 with 2 operations, making 10 a multiple of both 5 and 10.

Example 3:

Input: nums = [7,9,10], target = [7]

Output: 0

Explanation:

Target 7 already has a multiple in nums, so no additional operations are needed.

Constraints:

* `1 <= nums.length <= 5 * 104` * `1 <= target.length <= 4` * `target.length <= nums.length` * `1 <= nums[i], target[i] <= 104`

Code Snippets

C++:

```
class Solution {
public:
int minimumIncrements(vector<int>& nums, vector<int>& target) {

}
};
```

Java:

```
class Solution {
public int minimumIncrements(int[] nums, int[] target) {

}
}
```

Python3:

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