

Problem 952: Largest Component Size by Common Factor

Problem Information

Difficulty: Hard

Acceptance Rate: 41.75%

Paid Only: No

Tags: Array, Hash Table, Math, Union Find, Number Theory

Problem Description

You are given an integer array of unique positive integers `nums`. Consider the following graph:

* There are `nums.length` nodes, labeled `nums[0]` to `nums[nums.length - 1]`, * There is an undirected edge between `nums[i]` and `nums[j]` if `nums[i]` and `nums[j]` share a common factor greater than 1.

Return the size of the largest connected component in the graph.

Example 1:



Input: `nums = [4,6,15,35]` **Output:** 4

Example 2:



Input: `nums = [20,50,9,63]` **Output:** 2

Example 3:



****Input:**** nums = [2,3,6,7,4,12,21,39] ****Output:**** 8

****Constraints:****

`1`** <= nums.length <= 2 * 10⁴ ***`1`** <= nums[i] <= 10⁵ ** All the values of `nums` are ****unique****.

Code Snippets

C++:

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

    }
};
```

Java:

```
class Solution {
    public int largestComponentSize(int[] nums) {

    }
}
```

Python3:

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