Problem 2136: Earliest Possible Day of Full Bloom

Problem Information

Difficulty: Hard
Acceptance Rate: 71.22%
Paid Only: No
Tags: Array, Greedy, Sorting

Problem Description

You have `n` flower seeds. Every seed must be planted first before it can begin to grow, then bloom. Planting a seed takes time and so does the growth of a seed. You are given two **0-indexed** integer arrays `plantTime` and `growTime`, of length `n` each:

* `plantTime[i]` is the number of **full days** it takes you to **plant** the `ith` seed. Every day, you can work on planting exactly one seed. You **do not** have to work on planting the same seed on consecutive days, but the planting of a seed is not complete **until** you have worked `plantTime[i]` days on planting it in total. * `growTime[i]` is the number of **full days** it takes the `ith` seed to grow after being completely planted. **After** the last day of its growth, the flower **blooms** and stays bloomed forever.

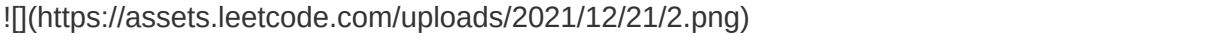
From the beginning of day `0`, you can plant the seeds in **any** order.

Return _the**earliest** possible day where **all** seeds are blooming_.

Example 1:

Input: plantTime = [1,4,3], growTime = [2,3,1] **Output:** 9 **Explanation:** The grayed out pots represent planting days, colored pots represent growing days, and the flower represents the day it blooms. One optimal way is: On day 0, plant the 0th seed. The seed grows for 2 full days and blooms on day 3. On days 1, 2, 3, and 4, plant the 1st seed. The seed grows for 3 full days and blooms on day 8. On days 5, 6, and 7, plant the 2nd seed. The seed grows for 1 full day and blooms on day 9. Thus, on day 9, all the seeds are blooming.

Example 2:



Input: plantTime = [1,2,3,2], growTime = [2,1,2,1] **Output:** 9 **Explanation:** The grayed out pots represent planting days, colored pots represent growing days, and the flower represents the day it blooms. One optimal way is: On day 1, plant the 0th seed. The seed grows for 2 full days and blooms on day 4. On days 0 and 3, plant the 1st seed. The seed grows for 1 full day and blooms on day 5. On days 2, 4, and 5, plant the 2nd seed. The seed grows for 2 full days and blooms on day 8. On days 6 and 7, plant the 3rd seed. The seed grows for 1 full day and blooms on day 9. Thus, on day 9, all the seeds are blooming.

Example 3:

Input: plantTime = [1], growTime = [1] **Output:** 2 **Explanation:** On day 0, plant the 0th seed. The seed grows for 1 full day and blooms on day 2. Thus, on day 2, all the seeds are blooming.

Constraints:

* `n == plantTime.length == growTime.length` * `1 <= n <= 105` * `1 <= plantTime[i], growTime[i] <= 104`

Code Snippets

C++:

```
class Solution {
public:
int earliestFullBloom(vector<int>& plantTime, vector<int>& growTime) {

}
};
```

Java:

```
class Solution {
public int earliestFullBloom(int[] plantTime, int[] growTime) {

}
```

```
}
```

Python3:

```
class Solution:
def earliestFullBloom(self, plantTime: List[int], growTime: List[int]) ->
int:
```