

Problem 2410: Maximum Matching of Players With Trainers

Problem Information

Difficulty: Medium

Acceptance Rate: 75.15%

Paid Only: No

Tags: Array, Two Pointers, Greedy, Sorting

Problem Description

You are given a **0-indexed** integer array `players`, where `players[i]` represents the **ability** of the `ith` player. You are also given a **0-indexed** integer array `trainers`, where `trainers[j]` represents the **training capacity** of the `jth` trainer.

The `ith` player can **match** with the `jth` trainer if the player's ability is **less than or equal to** the trainer's training capacity. Additionally, the `ith` player can be matched with at most one trainer, and the `jth` trainer can be matched with at most one player.

Return **_the maximum number of matchings between `players` and `trainers` that satisfy these conditions._**

Example 1:

Input: players = [4,7,9], trainers = [8,2,5,8] **Output:** 2 **Explanation:** One of the ways we can form two matchings is as follows: - players[0] can be matched with trainers[0] since $4 \leq 8$. - players[1] can be matched with trainers[3] since $7 \leq 8$. It can be proven that 2 is the maximum number of matchings that can be formed.

Example 2:

Input: players = [1,1,1], trainers = [10] **Output:** 1 **Explanation:** The trainer can be matched with any of the 3 players. Each player can only be matched with one trainer, so the maximum answer is 1.

Constraints:

```
* `1 <= players.length, trainers.length <= 105` * `1 <= players[i], trainers[j] <= 109`
```

****Note:**** This question is the same as [445: Assign Cookies.](<https://leetcode.com/problems/assign-cookies/>)

Code Snippets

C++:

```
class Solution {  
public:  
    int matchPlayersAndTrainers(vector<int>& players, vector<int>& trainers) {  
  
    }  
};
```

Java:

```
class Solution {  
public int matchPlayersAndTrainers(int[] players, int[] trainers) {  
  
}  
}
```

Python3:

```
class Solution:  
    def matchPlayersAndTrainers(self, players: List[int], trainers: List[int]) ->  
        int:
```