

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

The `i`th player can **match** with the `j`th trainer if the player's ability is **less than or equal to** the trainer's training capacity. Additionally, the `i`th player can be matched with at most one trainer, and the `j`th 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/description/>)

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:
```