

Problem 2037: Minimum Number of Moves to Seat Everyone

Problem Information

Difficulty: Easy

Acceptance Rate: 87.27%

Paid Only: No

Tags: Array, Greedy, Sorting, Counting Sort

Problem Description

There are `n` **available** seats and `n` students **standing** in a room. You are given an array `seats` of length `n`, where `seats[i]` is the position of the `ith` seat. You are also given the array `students` of length `n`, where `students[j]` is the position of the `jth` student.

You may perform the following move any number of times:

- * Increase or decrease the position of the `ith` student by `1` (i.e., moving the `ith` student from position `x` to `x + 1` or `x - 1`)

Return _the**minimum number of moves** required to move each student to a seat_ such that no two students are in the same seat._

Note that there may be **multiple** seats or students in the **same** position at the beginning.

Example 1:

Input: seats = [3,1,5], students = [2,7,4] **Output:** 4 **Explanation:** The students are moved as follows: - The first student is moved from position 2 to position 1 using 1 move. - The second student is moved from position 7 to position 5 using 2 moves. - The third student is moved from position 4 to position 3 using 1 move. In total, $1 + 2 + 1 = 4$ moves were used.

Example 2:

****Input:**** seats = [4,1,5,9], students = [1,3,2,6] ****Output:**** 7 ****Explanation:**** The students are moved as follows: - The first student is not moved. - The second student is moved from position 3 to position 4 using 1 move. - The third student is moved from position 2 to position 5 using 3 moves. - The fourth student is moved from position 6 to position 9 using 3 moves. In total, $0 + 1 + 3 + 3 = 7$ moves were used.

****Example 3:****

****Input:**** seats = [2,2,6,6], students = [1,3,2,6] ****Output:**** 4 ****Explanation:**** Note that there are two seats at position 2 and two seats at position 6. The students are moved as follows: - The first student is moved from position 1 to position 2 using 1 move. - The second student is moved from position 3 to position 6 using 3 moves. - The third student is not moved. - The fourth student is not moved. In total, $1 + 3 + 0 + 0 = 4$ moves were used.

****Constraints:****

`* `n == seats.length == students.length` * `1 <= n <= 100` * `1 <= seats[i], students[j] <= 100``

Code Snippets

C++:

```
class Solution {
public:
    int minMovesToSeat(vector<int>& seats, vector<int>& students) {
        }
};
```

Java:

```
class Solution {
    public int minMovesToSeat(int[] seats, int[] students) {
        }
}
```

Python3:

```
class Solution:  
    def minMovesToSeat(self, seats: List[int], students: List[int]) -> int:
```