1564. Put Boxes Into the Warehouse I

Medium 199 17 Add to List Share

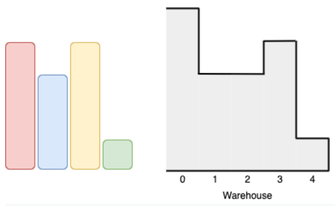
You are given two arrays of positive integers, `boxes` and `warehouse`, representing the heights of some boxes of unit width and the heights of `n` rooms in a warehouse respectively. The warehouse's rooms are labelled from `0` to `n - 1` from left to right where `warehouse[i]` (0-indexed) is the height of the `i^th` room.

Boxes are put into the warehouse by the following rules:

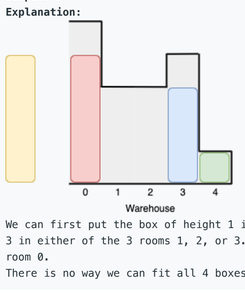
- Boxes cannot be stacked.
- You can rearrange the insertion order of the boxes.
- Boxes can only be pushed into the warehouse from left to right only.
- If the height of some room in the warehouse is less than the height of a box, then that box and all other boxes behind it will be stopped before that room.

Return *the maximum number of boxes you can put into the warehouse.*

Example 1:

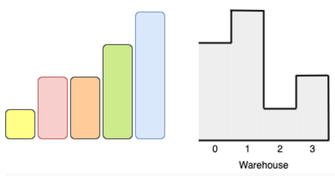



```
Input: boxes = [4,3,4,1], warehouse = [5,3,3,4,1]
Output: 3
Explanation:
```

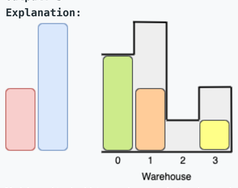


We can first put the box of height 1 in room 4. Then we can put the box of height 3 in either of the 3 rooms 1, 2, or 3. Lastly, we can put one box of height 4 in room 0.
There is no way we can fit all 4 boxes in the warehouse.

Example 2:




```
Input: boxes = [1,2,2,3,4], warehouse = [3,4,1,2]
Output: 3
Explanation:
```



Notice that it's not possible to put the box of height 4 into the warehouse since it cannot pass the first room of height 3.
Also, for the last two rooms, 2 and 3, only boxes of height 1 can fit.
We can fit 3 boxes maximum as shown above. The yellow box can also be put in room 2 instead.
Swapping the orange and green boxes is also valid, or swapping one of them with the red box.

Example 3:

```
Input: boxes = [1,2,3], warehouse = [1,2,3,4]
Output: 1
Explanation: Since the first room in the warehouse is of height 1, we can only put boxes of height 1.
```

Example 4:

```
Input: boxes = [4,5,6], warehouse = [3,3,3,3,3]
Output: 0
```

Constraints:

- `n == warehouse.length`
- `1 <= boxes.length, warehouse.length <= 10^5`
- `1 <= boxes[i], warehouse[i] <= 10^9`

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Sort the boxes in ascending order, try to process the box with the smallest height first.

Java | Autocomplete

```java
class Solution {
    public int maxBoxesInWarehouse(int[] boxes, int[] warehouse) {

        int i = boxes.length - 1;
        int count = 0;
        Arrays.sort(boxes);

        for (int room : warehouse) {
            // Iterate through boxes from largest to smallest
            // Discard boxes that doesn't fit in the current warehouse
            while (i >= 0 && boxes[i] > room) {
                i--;
            }

            if (i == -1) return count;
            count++;
            i--;
        }

        return count;
    }
}
```