Problem 1564: Put Boxes Into the Warehouse I

Problem Information

Difficulty: Medium
Acceptance Rate: 67.30%
Paid Only: Yes
Tags: Array, Greedy, Sorting

Problem Description

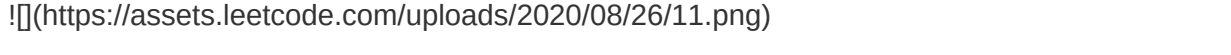
You are given two arrays of positive integers, `boxes` and `warehouse`, representing the heights of some boxes of unit width and the heights of `n` rooms in a warehouse respectively. The warehouse's rooms are labelled from `0` to `n - 1` from left to right where `warehouse[i]` (0-indexed) is the height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

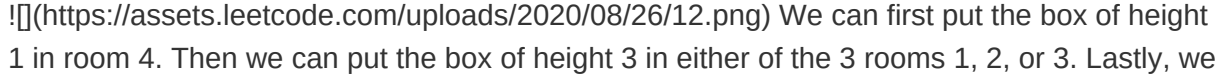
Boxes are put into the warehouse by the following rules:

* 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.

Constraints:

* `n == warehouse.length` * `1 <= boxes.length, warehouse.length <= 105` * `1 <= boxes[i], warehouse[i] <= 109`

Code Snippets

C++:

```
class Solution {
public:
int maxBoxesInWarehouse(vector<int>& boxes, vector<int>& warehouse) {

}
};
```

Java:

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

}
}
```

Python3:

```
class Solution:
def maxBoxesInWarehouse(self, boxes: List[int], warehouse: List[int]) -> int:
```