# 1580. Put Boxes Into the Warehouse II Premium

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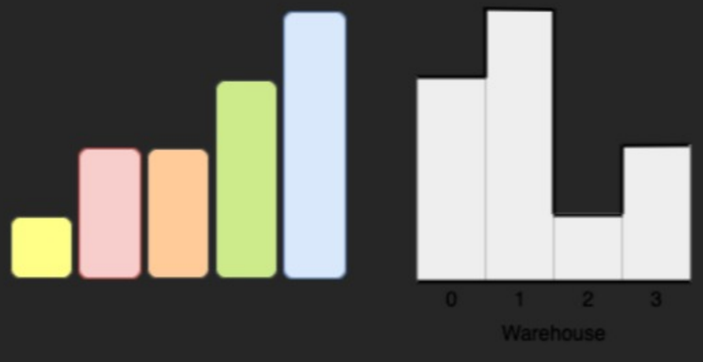
You are given two arrays of positive integers, `boxes` and `warehouse`, representing the heights of some boxes of unit width and the heights of `n` rooms in a warehouse respectively. The warehouse's rooms are labeled from `0` to `n - 1` from left to right where `warehouse[i]` (0-indexed) is the height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

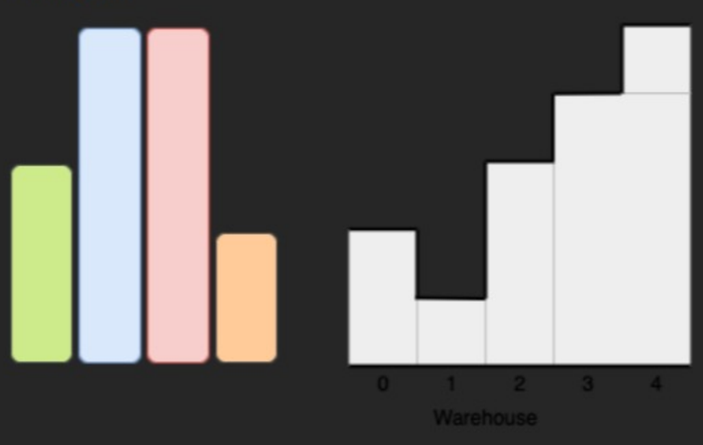
**Example 1:**



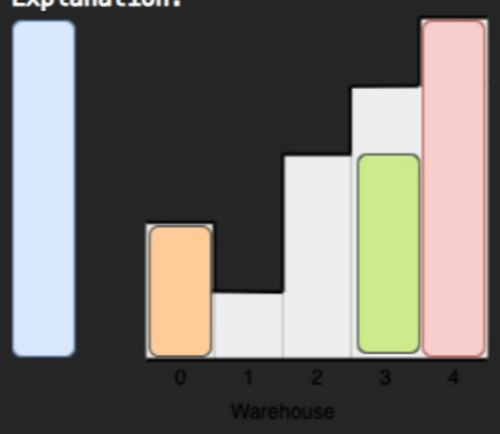

**Input:** boxes = [1,2,2,3,4], warehouse = [3,4,1,2]
**Output:** 4
**Explanation:**


We can store the boxes in the following order:
1- Put the yellow box in room 2 from either the left or right side.
2- Put the orange box in room 3 from the right side.
3- Put the green box in room 1 from the left side.
4- Put the red box in room 0 from the left side.
Notice that there are other valid ways to put 4 boxes such as swapping the red and green boxes or the red and orange boxes.

**Example 2:**




**Input:** boxes = [3,5,5,2], warehouse = [2,1,3,4,5]
**Output:** 3
**Explanation:**




It is not possible to put the two boxes of height 5 in the warehouse since there's only 1 room of height >= 5.
Other valid solutions are to put the green box in room 2 or to put the orange box first in room 2 before putting the green and red boxes.

**Constraints:**

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

Seen this question in a real interview before? 1/5

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Hint 1

Try to put at least one box in the house pushing it from either side.

Hint 2

Once you put one box to the house, you can solve the problem with the same logic used to solve version I. You have a warehouse open from the left only and a warehouse open from the right only.

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