

1331. Rank Transform of an Array

Description

Given an array of integers `arr`, replace each element with its rank.

The rank represents how large the element is. The rank has the following rules:

- Rank is an integer starting from 1.
- The larger the element, the larger the rank. If two elements are equal, their rank must be the same.
- Rank should be as small as possible.

Example 1:

Input: `arr = [40,10,20,30]`

Output: `[4,1,2,3]`

Explanation: 40 is the largest element. 10 is the smallest. 20 is the second smallest. 30 is the third smallest.

Example 2:

Input: `arr = [100,100,100]`

Output: `[1,1,1]`

Explanation: Same elements share the same rank.

Example 3:

Input: `arr = [37,12,28,9,100,56,80,5,12]`

Output: `[5,3,4,2,8,6,7,1,3]`

Constraints:

- $0 \leq \text{arr.length} \leq 10^5$
- $-10^9 \leq \text{arr}[i] \leq 10^9$

