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 <= arr.length <= 105
* -109 <= arr[i] <= 109