Next Greater Element in Circular Array

Given a circular integer array **arr[]**, the task is to determine the next greater element **(NGE)** for each element in the array.

The next greater element of an element **arr[i]** is the first element that is greater than **arr[i]** when traversing circularly. If no such element exists, return **-1** for that position.

Circular Property:

Since the array is circular, after reaching the last element, the search continues from the beginning until we have looked at all elements once.

Examples:

Input: arr[] = [1, 3, 2, 4]

Output: [3, 4, 4, -1]

Explanation:
The next greater element for 1 is 3.

The next greater element for 3 is 4.

The next greater element for 2 is 4.

The next greater element for 4 does not exist, so return -1.

Input: arr[] = [0, 2, 3, 1, 1]

Output: [2, 3, -1, 2, 2]

Explanation:

The next greater element for 0 is 2.

The next greater element for 2 is 3.

The next greater element for 3 does not exist, so return -1.

The next greater element for 1 is 2 (from circular traversal).

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Constraints:
$1 \leq arr.size() \leq 10^5$
$0 \leq arr[i] \leq 10^6$