

PROBLEM

Three way partitioning



Easy Accuracy: 41.58% Submissions: 161K+ Points: 2

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Given an array of size n and a range $[a, b]$. The task is to partition the array around the range such that the array is divided into three parts.

- 1) All elements smaller than a come first.
- 2) All elements in range a to b come next.
- 3) All elements greater than b appear in the end.

The individual elements of three sets can appear in any order. You are required to return the modified array.

Note: The generated output is 1 if you modify the given array successfully.

Geeky Challenge: Solve this problem in $O(n)$ time complexity.

Example 1:

Input:

$n = 5$

$\text{array}[] = \{1, 2, 3, 3, 4\}$

$[a, b] = [1, 2]$

Output:

1

Explanation:

One possible arrangement is: $\{1, 2, 3, 3, 4\}$. If you return a valid arrangement, output will be 1.

Example 2:

Input:

$n = 6$

$\text{array}[] = \{1, 4, 3, 6, 2, 1\}$

$[a, b] = [1, 3]$

Output:

1

Explanation:

One possible arrangement is: $\{1, 3, 2, 1, 4, 6\}$. If you return a valid arrangement, output will be 1.

Your Task:

You don't need to read input or print anything. The task is to complete the function **threeWayPartition()** which takes the array **array**, **a**, and **b** as input parameters and modifies the array in place according to the given conditions.

Expected Time Complexity: $O(n)$

Expected Auxiliary Space: $O(1)$

Constraints:

$1 \leq n \leq 10^6$

$1 \leq \text{array}[i], a, b \leq 10^9$

CODE

#User function template for Python

class Solution:

 #Function to partition the array around the range such

 #that array is divided into three parts.

 def threeWayPartition(self, array, a, b):

 array.sort()

 return 1

 # code here