Class 7: Intro to Sorting Algorithms

Friday, December 8, 2023 8:49 PM

[4, 3, 2, 12, 10, 3, 5, 7]

$1 \le N \le 10^5$

$-10^9 \le a[i] \le 10^9$

Bubble Sort

min swap operation

① Counting Sort

arr [4, 3, -2, 12, 10, 3, 5, 7] unsorted

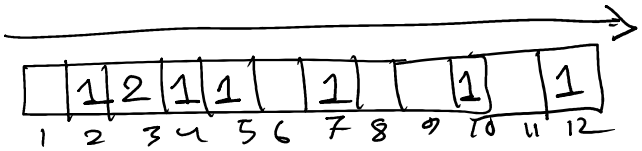
[-2, 3, 3, 4, 5, 7, 10, 12] Sorted

$(0 - 10^5)$ || $(-10^9 - 10^9)$

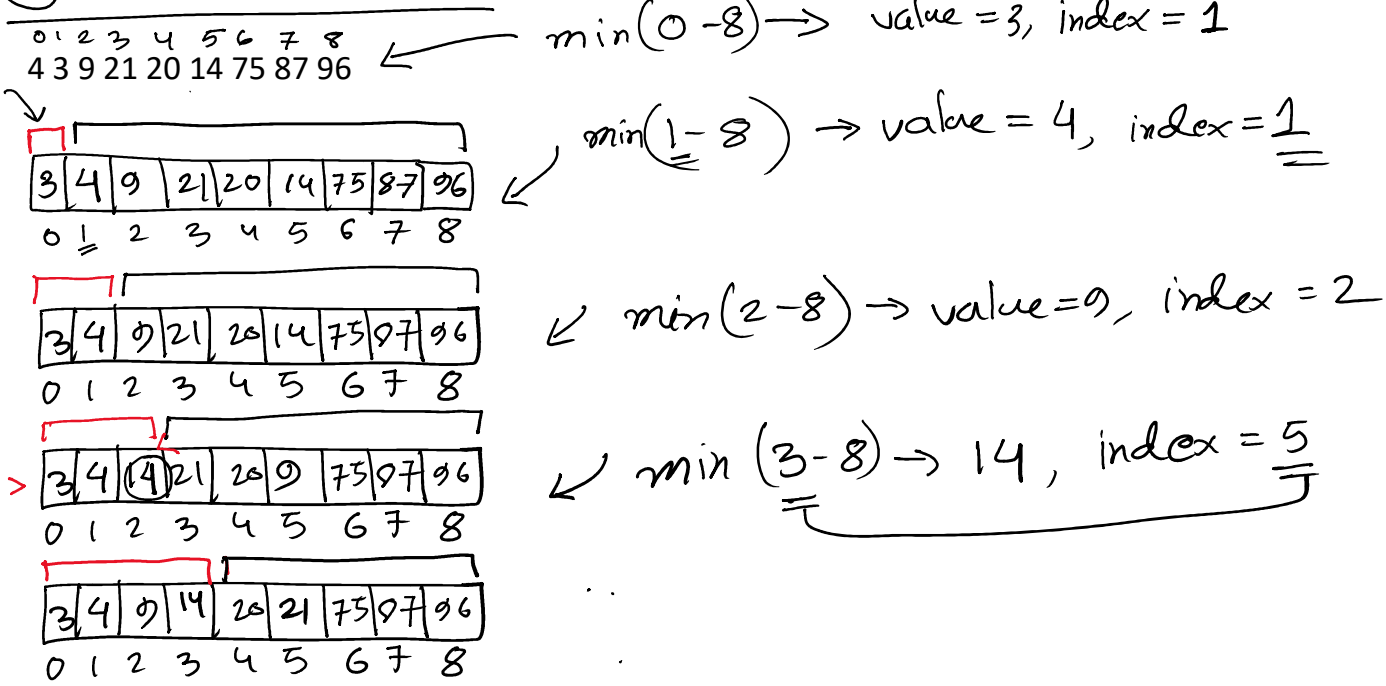
MAP

Choose	Count
count[0]	0
1	0
count[2]++	1
3	2
4	1
5	1
6	0
7	1
8	0
9	0
10	1
11	0
12	1

count[3] = ②



② Selection Sort



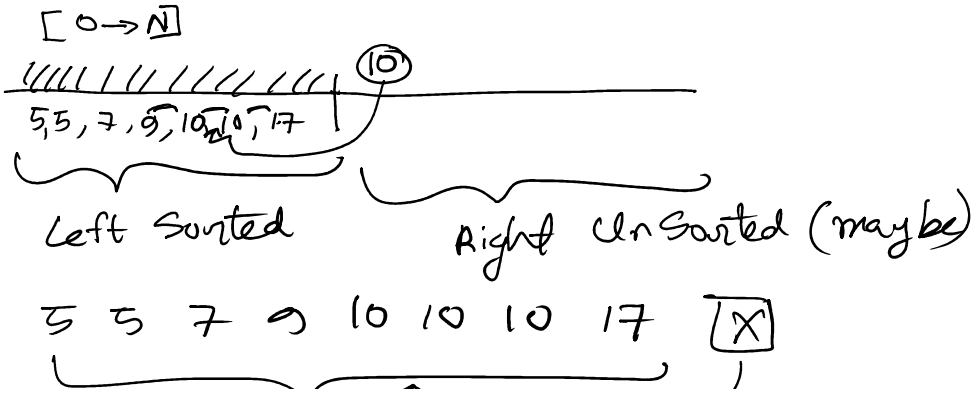
temp = 9

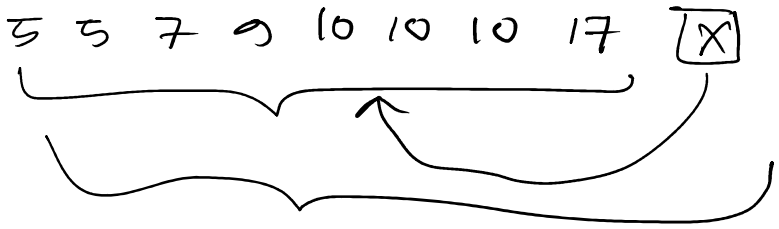
arr[5.I] = arr[minIdx]

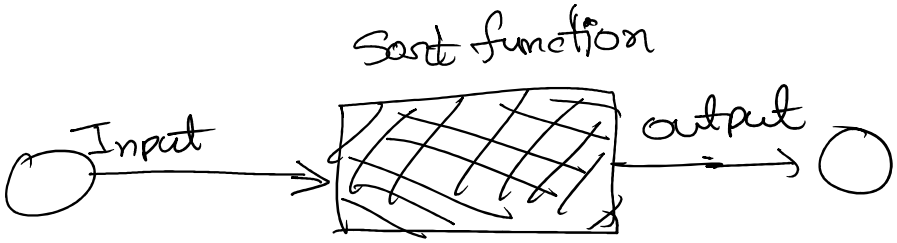
arr[minIdx] = temp

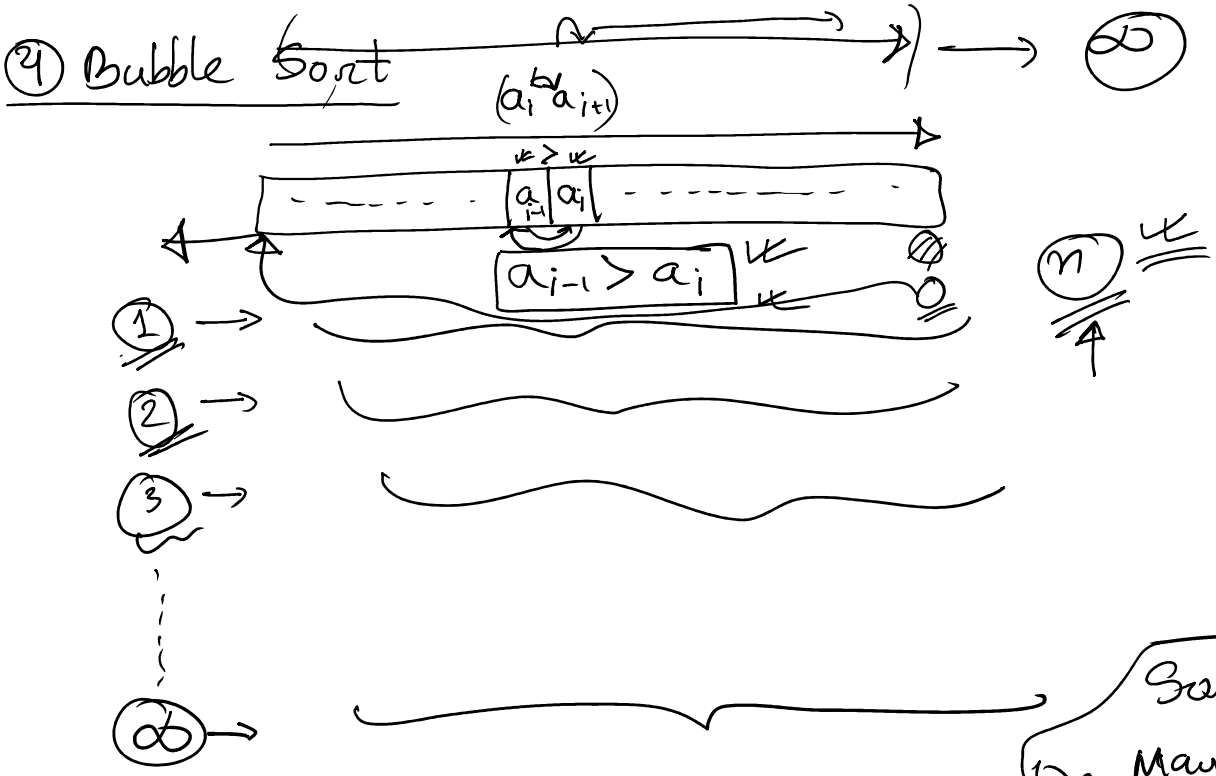
9

③ Insertion Sort









Sorted ?
Or May Be Not ?

If yes

Can be make sorted with less than ∞ swaps ?

① Merge Sort

(2) Quick Sort