

Arrays :-> Important Interview Questions :->

1. Given an array of only 0's, 1's & 2's  
Sort the array in ascending order without  
using any sorting algorithm.

Constraint: Time Complexity should be  $O(n)$ .

i/p  $\rightarrow$  arr = {1, 1, 0, 2, 1, 2, 1, 0}

o/p  $\rightarrow$  arr = {0, 0, 1, 1, 1, 1, 2, 2}

$C_0 = 2$

$C_1 = 4$

$C_2 = 2$

index = 0

0 0 1 1 1 1 2 2

While ( $w > 0$ )

arr[index] = 0;

$C_0--;$

0 0

Count Sort Algorithm :->

\* Non comparison algorithm

\* Whole numbers 0 - 9

Steps: 1. Find the max = 6

2. Create a count array  
0 - max  
0 - 6

3. Calculate freq of each  
element in the array

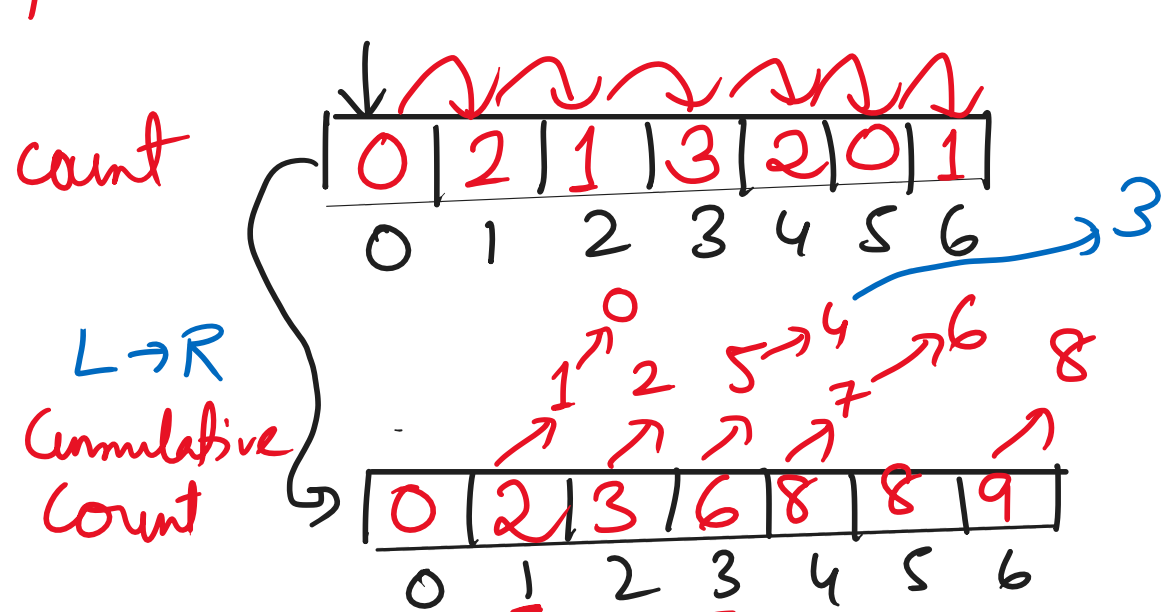
4. Calculate the cumulative  
count

5. Create the o/p array

6. Start from end ( $R \rightarrow L$ )

7. Copy the output back to input.

i/p [3, 4, 6, 1, 4, 3, 2, 3, 1]



o/p [1, 1, 2, 3, 3, 3, 4, 4, 6]

$O(n + \max)$

Radix Sort Algorithm :-> (Bucket Sort) 1's, 10's, 100's

\* Non comparison Algo

\* Multiple digit numbers

\* Constant Length Strings

Samar, Sagor, Rahul

S1:-> Find max :-> 325

S2:-> How many digits  
in max? (3) passes

S3:-> 0 - 9 10 buckets

Count Sort

i/p [325, 237, 032, 009, 081]

(1) [081, 032, 325, 237, 009]

(2) [009, 325, 032, 237, 081]

(3) [009, 032, 081, 237, 325]

0 1 2 3 4 5 6 7 8 9

009  
032  
081

$O(n + \max)$

File Handling in C

Struct & Unions

Dynamic Memory Allocation

Strings

C++

Storage Classes