

Counting Sort - frequency of elements.

Input - 2 1 2 3 4 2 3 2 1

Count array size = Max element (array) + 1  
 $= k = 4 + 1 = 5$

Count array → 

0	3	4	2	1
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0 1 2 3 4  
Traverse.

1 1 1 2 2 2 2 3 3 4

Linear, quad, cubic, log??

TC →  $O(n+k)$

SC →  $O(k)$ .

$k = \text{max element (arr)} + 1$ .

	2	2		
	1	1	1	
0	0	0	0	0
0	1	2	3	4

Radix Sort -

904  
046  
005  
074  
062  
001



10's place  

0	0	1
0	6	2
9	0	4
0	7	4
0	0	5
0	4	6



001  
904  
005  
046  
062  
074

① Maximum element = 904

② No. of digits in max ele = 3.

③ Add 0's

④

100's place

001  
-904  
-005  
-046  
-062  
-074



001  
005  
046  
062  
074  
904

H/w  
Shell Sort