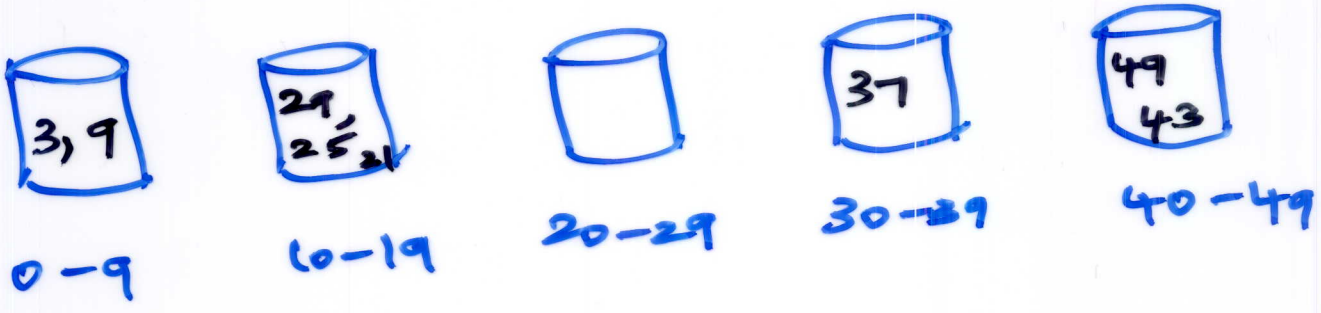
Bucket - Sort :-

- non - Comparison sort.
- first, an array of initially empty buckets is set up.
- Given, 29 25 3 49 9 37 21 43

- Pgm scans each element of i/p array and puts it in its bucket.



- Each bucket is sorted.

- All elements are put back into original array.

3 9 21 25 29 37 43 49

- Is this stable / unstable ?

Counting sort :- a type of bucket sort
- stable

Ex:

A = { 3, 11, 2, 9, 1, 5 }

B = { 1 2 3 4 5 6 7 8 9 10 11
1 2 3 - 5 - - - 9 - 11 }

↳ size : 11

Issues :-

1) How to handle duplicates ?
- maintain a linked list to each array index.

- maintain a Counter

Ex: 3 2 4 2 3 5

- initialize an array of 5 Counters to zeros : 1 2 3 4 5 / 0 0 0 0 0

- Moving thru' the array ↑ment the Counters : 1 2 3 4 5 / 0 2 2 1 1

- simply read off the no.' of each occurrence : 2 2 3 3 4 5