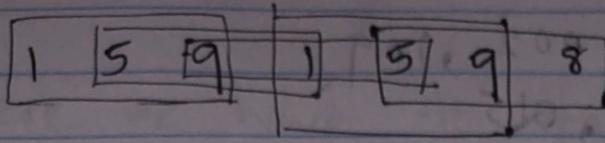


* Contains Duplicates. III



Slider size = 3

difference = 3

• Bucket Sort / Radix sort.

15, 1, 321, 10, 802, 2, 123, 90, 109, 11

from Least significant digit to Most significant digit.

015, 001, 321, 010, 802, 002, 123, 090, 109, 011

(1) take max number & add 0s to all digits

s.t. # of digits are equal

(2) as base is 10, take 10 buckets. For strings, it should be 26.

(3) go through LSB to MSB & add

0 - ~~001, 321~~ 010, 090

1 - 001, 321, 011

2 - 802, 002.

3 - 123

4 -

5 - 015

6 -

7 -

8 -

9 - 109

(4) In next step take 2nd digits & go from top to bottom & arrange.

taken from previous partial sorting.

010, 090, 001, 321, 011, 802, 002, 123, 015, 109

0 - 001, 802, 002, 109

1 - 010, 011, 015

2 - 321, 123

3 -

4 - for about / for looking.

5 -

6 - 010, 090, 802, 002, 001, 109, 123, 015

7 -

8 - 010, 090, 802, 002, 001, 109, 123, 015

9 - 090,

(5) 3rd digit

001, 802, 002, 109, 010, 011, 015, 321, 123, 090

0 - 001, 002, 010, 011, 015, 090

1 - 109, 123, 010, 011, 015

2 - 110, 155, 100 - 1

3 - 321.

4 - 802, 002 - 2

5 - 010 - 2

6 - 015 - 2

7 - 010 - 2

8 - 802 - 1

9 - 010 - 2

sorted list \rightarrow 001, 002, 010, 011, 015, 090, 109, 123, 321,

Only 3 passes required.

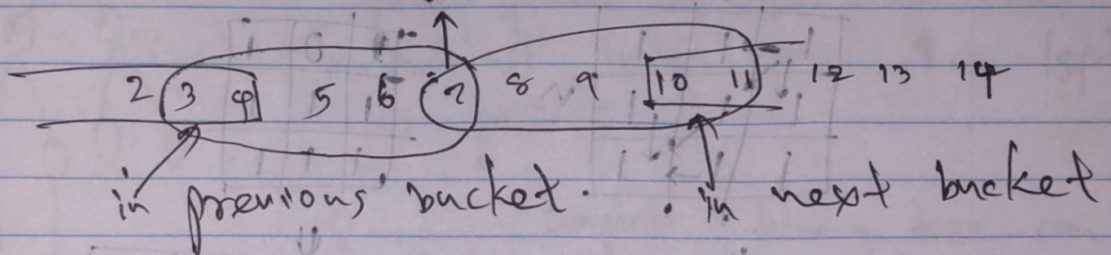
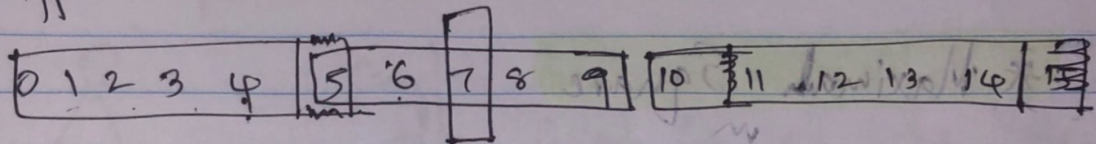
1 5 9 1 5 9 8 ~~size~~ size = 3
difference = 4

Here we have to take difference as buckets

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, ...

cause if the next n is in the same bucket, then its a match. To take buckets have to take $n / \text{diff} + 1$

Now, only previous & next buckets can contain values matching with the ~~size~~ difference.

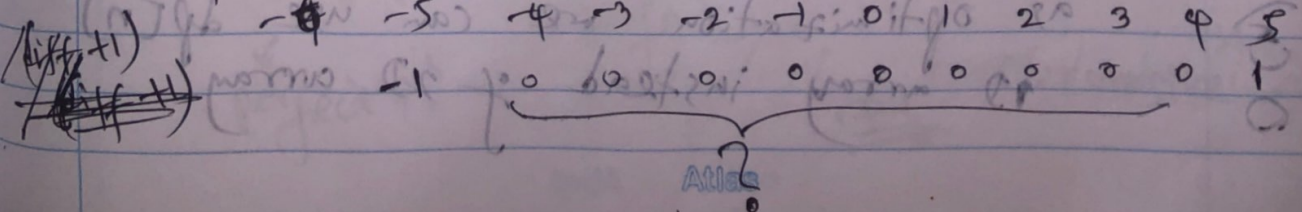


Have to use a HashMap to track bucket # & value currently having in that bucket.

~~If in~~ to check in previous / next buckets take current value -
(relevant bucket value \leq difference)

802

diff = 4



No: _____

Date: ____/____/____

to avoid that ~~data~~ re organize / consider
each value as $n - \text{int.min}$ to take
relative linear distribution.

When we are iterating through array
we have to remove values less than
the size position. to satisfy:

$$|i-j| \leq \text{size}$$