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Business Intelligence - Assignment 1

1. $N = [100, 10, 30, 20, 40, 70, 80, 90, 110, 120, 50, 60]$

Total no. of bins = 12

Depth $\rightarrow 3$ # users given.

New no. of bins = Total previous bin / Depth

$$= 12 / 3$$

$$= 4$$

Thus, we get 4 new bins

1. we sort the inputs.

$n = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120]$

2. Partition Bins.

Bin 1 \rightarrow 10, 20, 30

Bin 2 \rightarrow 40, 50, 60

Bin 3 \rightarrow 70, 80, 90

Bin 4 \rightarrow 100, 110, 120.

3. Smooth each Bin \rightarrow Sum of each bin Depth

Bin 1 \rightarrow 20

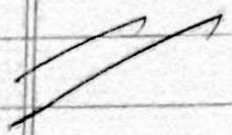
Bin 2 \rightarrow 50

Bin 3 \rightarrow 80

Bin 4 \rightarrow 110

4. Final output

$n = [20, 50, 80, 110]$



2. $n = [5, 10, 20, 15, 25, 35, 40, 45, 60, 50, 65]$

Total no. of bins $\rightarrow 11$

Depth $\rightarrow 3$ # given

We need to add one element to make bins equal length.

New no. of bins \rightarrow Total previous bins / depth
 $\rightarrow 12 / 3$
 $\rightarrow 4$

1. Sort the bin

$n = [5, 10, 15, 20, 25, 30, 35, 45, 50, 60, 65]$

2. Partition Bin

- Bin 1 $\rightarrow 5, 10, 15$
- Bin 2 $\rightarrow 20, 25, 30$
- Bin 3 $\rightarrow 35, 40, 45, 50$
- Bin 4 $\rightarrow 60, 65, 70$

70 been uncertain.

Date ____/____/____

(Saathi)

We assume x to be next element 66.

3. Smooth each Bin \rightarrow sum of element \div depth.

$$\text{Bin 1} \rightarrow (5, 10, 15) \div 3 \rightarrow 10$$

$$\text{Bin 2} \rightarrow (20, 25, 30) \div 3 \rightarrow 25$$

$$\text{Bin 3} \rightarrow (35, 45, 50) \div 3 \rightarrow 43.33$$

$$\text{Bin 4} \rightarrow (60, 65, 66) \div 3 \rightarrow 63.66$$

4. Final output

$$A = [10, 25, 43.33, 63.66]$$