Assignment-1

24/1/23

(10)

a)

f	Labels	
1	1	Training set
2	1	
3	0	
6	0	
6	0	Testing set
7	1	
10	1	
11	1	

We now have splitted data into 2 halves containing 8 data points

Euclidian distance $= \sqrt{(x_1 - x_2)^2}$

$d_1 = \sqrt{(6-6)^2} = 0$

$d_2 = \sqrt{(6-3)^2} = 3$

$= \sqrt{(6-2)^2} = 4$

$= \sqrt{(6-1)^2} = 5$

Given that $K=3$, we are required to find 3 nearest neighbours.

i.e (6,6)(6,3)(6,2)

(0, 0, 1)

Since 0 is in majority

desired o/p is 0

This is the same case for the other data points.

as predicted i.e zero

b)

Confusion Matrix

	0	1
0	TN = 1	FP = 0
1	FN = 3	TP = 0

$$\text{Accuracy} = \frac{TP + TN}{TN + FN + TP + FP}$$

$$= \frac{0+1}{3+1+0+0} = 1/4 = 0.25$$

$$\text{Sensitivity} = TP/TP + FN$$

$$= 0/0+3$$

$$= 0$$

$$\text{Specificity} = \frac{TN}{FP + TN}$$

$$= 1/0+1$$

$$= 1$$

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