HW5

ให้น้ำหนัก $W_i = 0.5 \; ; i = 0, 1, 2$ $\quad f(x) = \begin{cases} 1 \; ; x \geq 0 \\ 0 \; ; x < 0 \end{cases}$

Input		Weight							Weight		
x_1	x_2	$1(W_0)$	$X_1(W_1)$	$X_2(W_2)$	sumnet	target	Actual	$\alpha(T-O)$	W_0	W_1	W_2
0	0	0.5	0	0	0.5	0	1	-0.5	0	0.5	0.5
0	1	0	0	0.5	0.5	0	1	-0.5	-0.5	0.3	0
1	0	-0.5	0.5	0	0	0	1	-0.5	-1	0	0
1	1	-1	0	0	-1	1	0	0.5	-0.5	0.5	0.5
0	0	-0.5	0	0	-0.5	0	0	0	-0.5	0.5	0.5
0	1	-0.5	0	0.5	0	0	1	-0.5	-1	0.5	0
1	0	-1	0.5	0	-0.5	0	0	0	-1	0.5	0
1	1	-1	0.5	0	-0.5	1	0	0.5	-0.5	0.5	0.5
0	0	-0.5	0	0	-0.5	0	0	0	-0.5	1	0.5
0	1	-0.5	0	0.5	0	0	1	-0.5	-1	1	0
1	0	-1	1	0	0	0	1	-0.5	-1.5	0.5	0
1	1	-1.5	0.5	0	-1	1	0	0.5	-1	1	0.5
0	0	-1	0	0	-1	0	0	0	-1	1	0.5
0	1	-1	0	0.5	-0.5	0	0	0	-1	1	0.5
1	0	-1	1	0	0	0	1	-0.5	-1.5	0.5	0.5
1	1	-1.5	0.5	0.5	-0.5	1	0	0.5	-1	1	1
0	0	-1	0	0	-1	0	0	0	-1	1	1
0	1	-1	0	1	0	0	1	-0.5	-1.5	1	0.5
1	0	-1.5	1	0	-0.5	0	0	0	-1.5	1	0.5
1	1	-1.5	1	0.5	0	1	1	0	-1.5	1	0.5
0	0	-1.5	0	0	-1.5	0	0	0	-1.5	1	0.5
0	1	-1.5	0	0.5	-1	0	0	0	-1.5	1	0.5
1	0	-1.5	1	0	-0.5	0	0	0	-1.5	1	0.5
1	1	-1.5	1	0.5	0	1	1	0	-1.5	1	0.5

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$$AC = (TP+TN)/ALL = \frac{3+1}{4} = \frac{4}{4} = 1$$

$$Recall = \frac{TP}{TP+FN} = \frac{3}{3+0} = \frac{3}{3} = 1$$

$$Precision = \frac{TP}{TP+FP} = \frac{3}{3+0} = \frac{3}{3} = 1$$

$$Sensitivity = TP/P = \frac{3}{3} = 1$$

$$Specificity = TN/N = \frac{1}{1} = 1$$

$$F_1 = \frac{2\,Precision \times Recall}{(P+R)} = \frac{2(1\times 1)}{(1+1)} = \frac{2}{2} = 1$$

Target \ Actual output	0	1	
0	3 TP	0 FN	P = 3
1	0 FP	1 TN	N = 1
	P' = 3	N' = 1	4

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