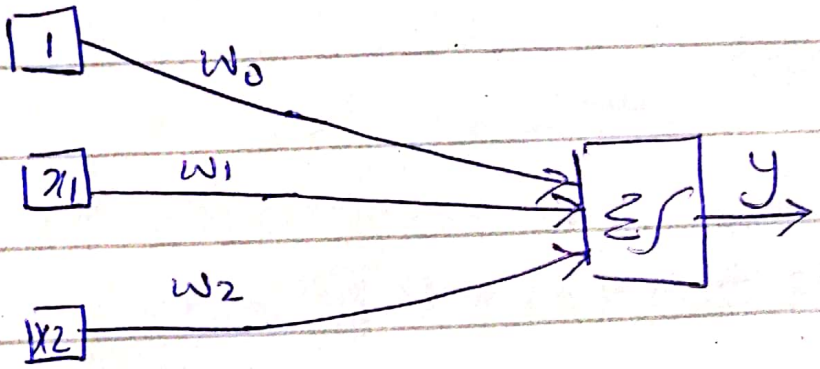
Mid 2 Review | 19L-1196

Q1 NAND

1	0	1
0	1	1
0	0	1
1	1	0



$$-f([1.5 \times 1 + (-1) \times 0 + (-1 \times 0)]) = 1$$
$$f([1.5 \times 1 + -1 \times 0 + -1 \times 1]) = 1$$
$$f([1.5 \times 1 + -1 \times 1 + -1 \times 0]) = 1$$
$$f([1.5 \times 1 + -1 \times 1 \times -1 \times 1]) = 0$$

Therefore option B

Q1/b NOR

0	0	1
0	1	0
1	0	0
1	1	0

option C

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$f([0.5 \times 1 + (-1) \times 0 + (-1) \times 0]) = 0$

$f([0.5 \times 1 + (-1) \times 0 + (-1) \times 1]) = 0$

$f([0.5 \times 1 + (-1) \times 1 + (-1) \times 0]) = -1$

$f([0.5 \times 1 + (-1) \times 1 + (-1 \times 1)]) = -1$

Q1/c

if $x_2 \geq x_1 \rightarrow 1$

Since $x_0 = 1$

1, 0, 1

1, 1, 1

Therefore, these are negatives

1, 1, 0

1, 2, 0,

1, 2, 1

Q1/d

$w + \alpha (Actual - prod) * input$

~~$w + \alpha t$~~

$W = [0, 0, 0]$

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1st iteration

$$\begin{bmatrix}0\\0\\0\end{bmatrix} + \alpha(1-1)\begin{bmatrix}1\\0\\0\end{bmatrix} = 1 > 0$$

no need to change.

2nd iteration

$$\begin{bmatrix}0\\0\\0\end{bmatrix} + \alpha(1-1)\begin{bmatrix}1\\0\\1\end{bmatrix} = 1 > 0$$

no need to change

3rd iteration

$$\begin{bmatrix}0\\0\\0\end{bmatrix} + \alpha(1-1)\begin{bmatrix}1\\1\\0\end{bmatrix} = 1 > 0$$

no change

$$\begin{bmatrix}0\\0\\0\end{bmatrix} + (0.2 \times (-2)\begin{bmatrix}1\\1\\0\end{bmatrix} = \begin{bmatrix}-0.4\\-0.4\\0\end{bmatrix}$$

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4th iteration

$$\begin{bmatrix} -0.4 \\ -0.4 \\ 0 \end{bmatrix} + \alpha(-1-0)\begin{bmatrix} 1 \\ 1 \\ -1 \end{bmatrix} = \begin{bmatrix} -0.6 \\ -0.6 \\ 0.2 \end{bmatrix}$$

(12)

from (5,4) $\sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$

		Ranking
(5, 1)	3	4
(1, 5)	4.123	9
(6,2)	2.23	1
(2,6)	3.60	7
(7,2)	2.82	3
(2,7)	4.2426	12
(7,3)	2.23	2
(3,7)	3.60	8
(8,3)	3.16	6
(3,8)	4.72	13
(9,5)	4.123	5
(5,7)	5	14

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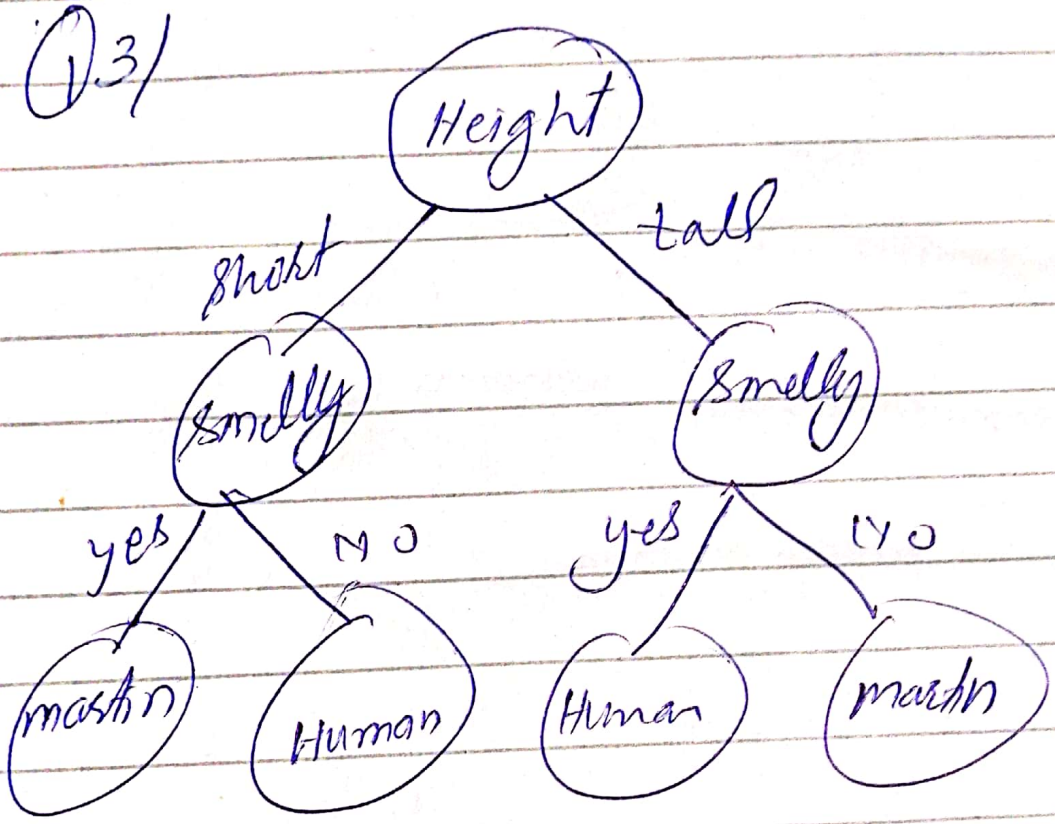
for $K = 3$

only 2, 2, 3 are selected

Q3)



Q4// a string of length $= 3$

$bw_0 + x_1 w_1 + x_2 w_2$

Q4// b population data to be compared with input data.

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