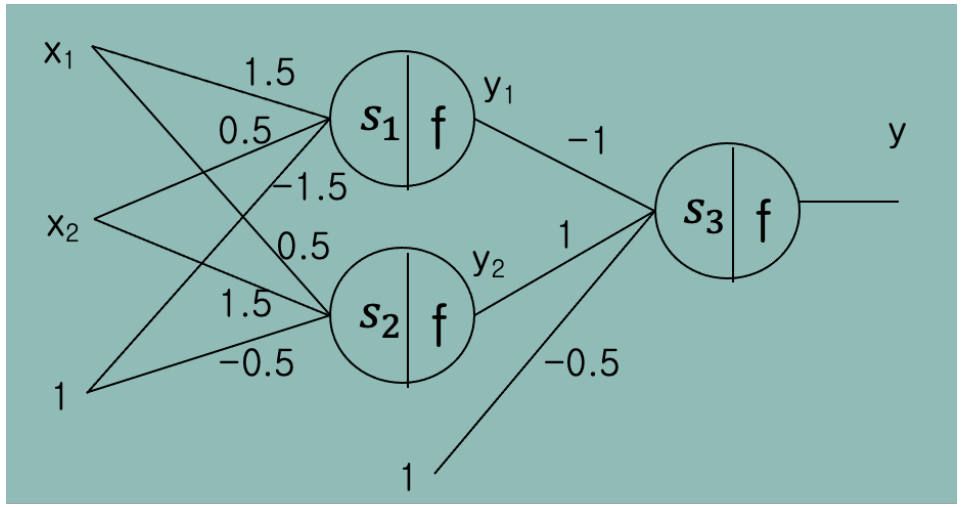
Assignment

Neural Network

1. Calculate the outputs of the given data samples

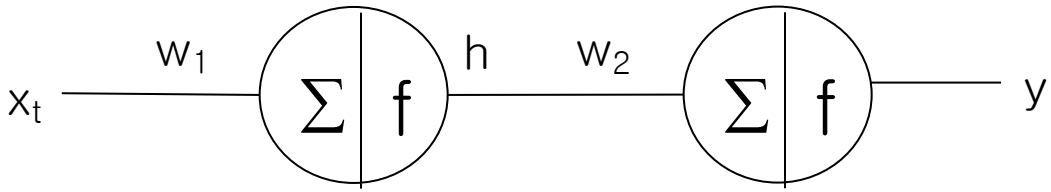


x_1	x_2
0	0
0	1
1	0
1	1

① All activation functions are Hard Limit function.
② All activation functions are Sigmoid function
③ All activation functions are ReLU

Neural Network

2. We have one training sample, (1,1). The initial weights are $w_1 = 1$, $w_2 = 1$. The learning rate is $\eta = 0.1$. The activation function is Sigmoid. Loss function is MSE.



① Update each of w_1 and w_2 once by gradient descent method.
② Update each of w_1 and w_2 once more by gradient descent method.

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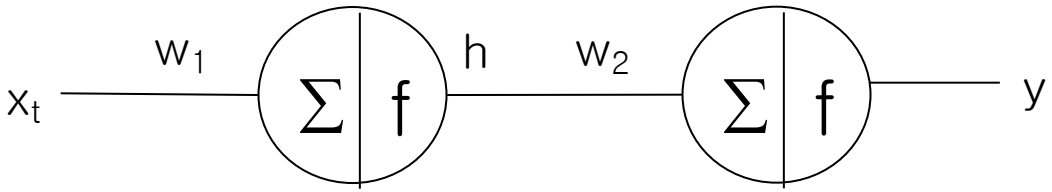
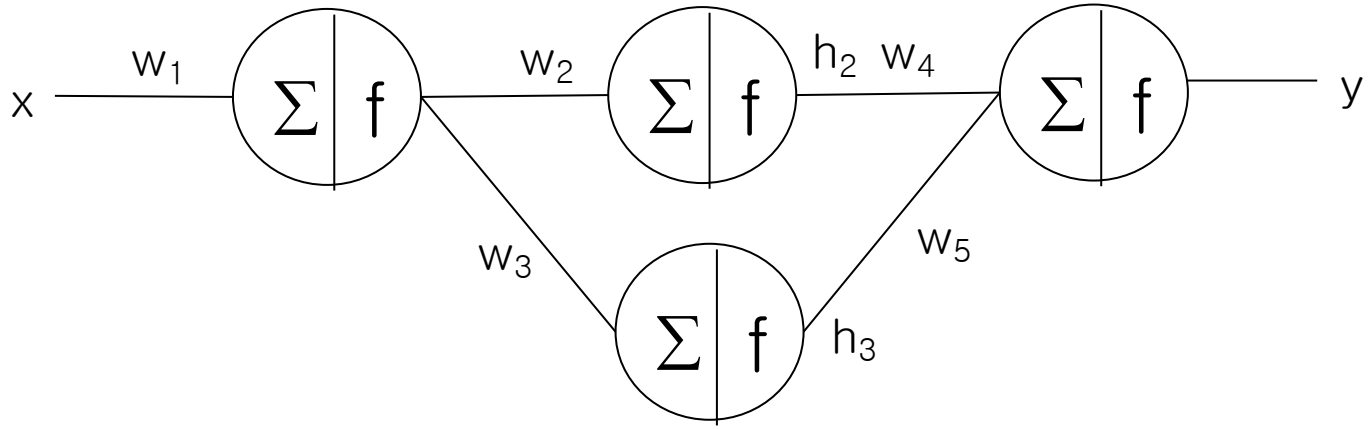
3. We have two training samples, $(1,1)$ and $(0,0)$. The initial weights are $w_1 = 1, w_2 = 1$. The learning rate is $\eta = 0.1$. The activation function is Sigmoid. Loss is MSE



Update w_1 once by gradient descent method.

Neural Network

4. We have one training sample, $(1,1)$. The initial weight for all the weight is 1. The learning rate is $\eta = 0.1$. The activation function is Sigmoid. Loss is MSE.



Update w_1 once by gradient descent method.

Thank You