

Homework 1

NLP

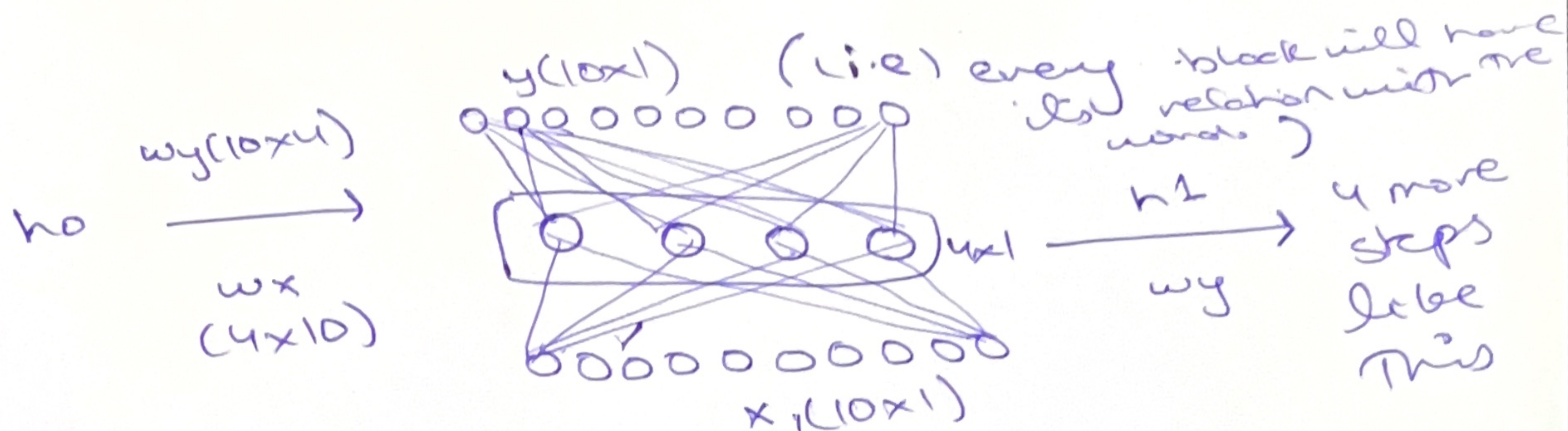
Rohan Javed

21L-5625

From 0 to 4, the RNN model processes the word 'w' with respect to its index 'x'. The vocabulary is given as 10

So $y (10 \times 1)$ and $x (10 \times 1)$.

The model will be illustrated as;



Hidden Layers

$$\begin{aligned} h_1 &= w_x x_1 + w_h h_0 \\ &= (4 \times 10)(10 \times 1) + (4 \times 4)(4 \times 1) \\ &= (4 \times 1) \end{aligned}$$

Output:

$$y_1 = w_y h_1 = (10 \times 4)(4 \times 1) = (10 \times 1)$$

$$h_2 = w_x (x_2) + w_h (h_1)$$

$$y_2 = w_y (h_2)$$

$$h_3 = w_x (x_3) + w_h (h_2)$$

$$y_3 = w_y (h_3)$$

$$h_4 = w_x (x_4) + w_h (h_3)$$

$$y_4 = w_y (h_4)$$

$$h_5 = w_x (x_5) + w_h (h_4)$$

$$y_5 = w_y (h_5)$$