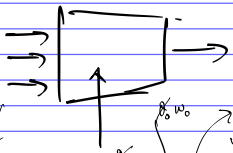
$y = mx + c$

$x_0 = 1$



$y = \sum_{i=0}^{n} w_i x_i$

Expensive ?

Price ?

#of bedrooms x_1

# of stories x_2

Area (sq ft) x_3

locality x_4

w_0 w_1 w_2 w_3 w_4

y $g(y)$ 0

$J(w_i)$

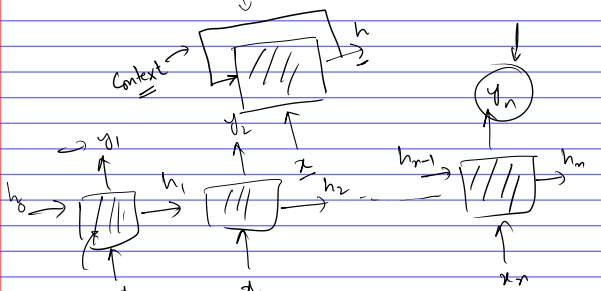
$$J = \frac{1}{n} \sum_{i=1}^{n} (y_i - \hat{y}_i)^2$$

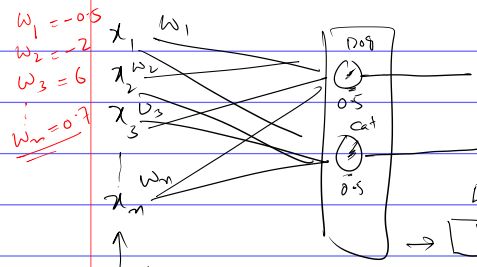
$$\Rightarrow \left[w_{i,new} = w_{i,old} - \alpha \frac{\partial J(w_i)}{\partial w_i} \right.$$

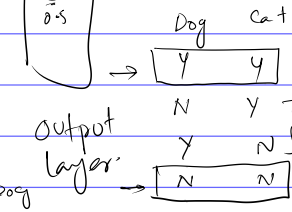
$$g(y) = \frac{1}{1+e^{-y}} = \frac{1}{1+e^{-\sum_{i=0} w_i x_i}}$$

$g(y) \geq 0.5 \Rightarrow$ Yes } Binary

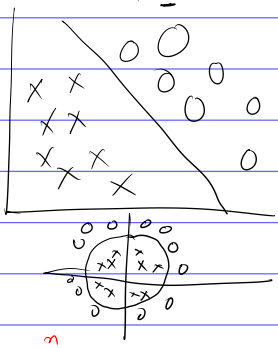
$g(y) < 0.5 \Rightarrow$ No } Classifier







$$\text{Softmax} = \frac{e^{Dog}}{e^{Dog} + e^{Cat}}$$



$$y = \sum_{i=1}^{n} w_i x_i$$

$$y = w_1 x_1 + w_2 x_2 + w_3 x_3$$

Threshold = 0.5

$$\begin{cases} 0 = 0.5 - 1 \Rightarrow \text{Yes} \\ 0 < 0.5 \Rightarrow \text{NO} \end{cases}$$

$$\begin{cases} 0 - T \geq 0 \Rightarrow \text{Yes} \\ 0 - T < 0 \Rightarrow \text{No} \end{cases}$$