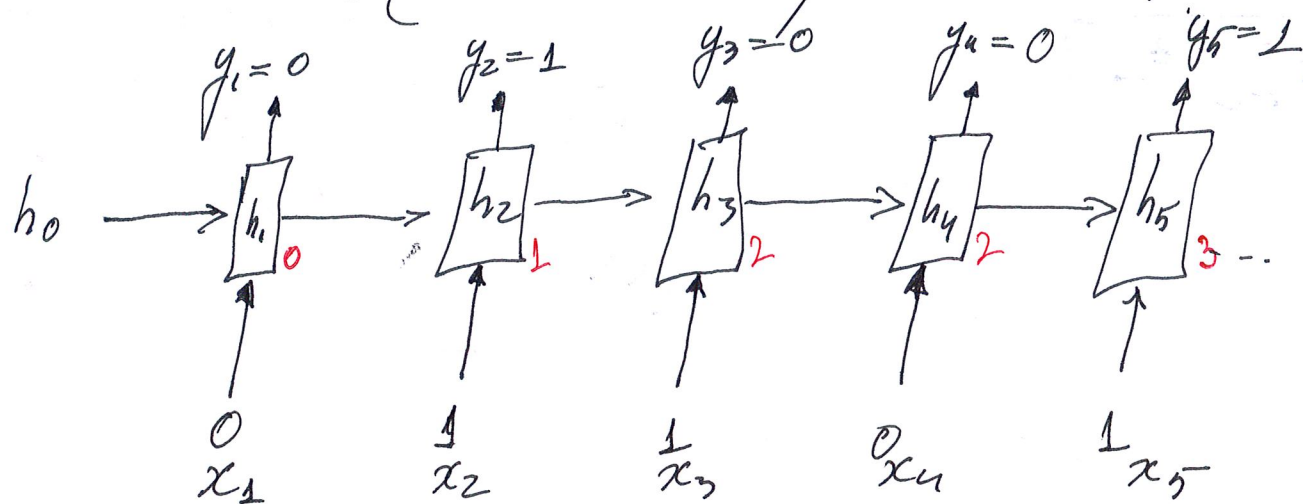


$$P(\text{laptops} \mid \text{the students opened their})$$

$$\approx \frac{C(\text{the students opened their laptops})}{C(\text{the students opened their})}$$



$$h_t = f(h_{t-1}, x_t) = h_{t-1} + x_t$$

$$y_t = g(h_t) = h_t \% 2$$

$$h_t = f_{wv}(h_{t-1}, x_t) = f\left(W_{hh} h_{t-1} + W_{hx} x_t\right)$$

$$I h_{t-1} + I x_t$$

$$p(c_1|x) = \frac{e^{z_1/T}}{e^{z_1/T} + e^{z_2/T}}$$

$$p(c_2|x) = \frac{e^{z_2/T}}{e^{z_1/T} + e^{z_2/T}}$$

$$z_1 > z_2$$

auto-regressive generation

$T=1 \Rightarrow$  normal softmax  $\rightarrow$  sampling

$T \rightarrow \infty \Rightarrow p(c_1|x) = 0.5$   
 $p(c_2|x) = 0.5$

$T \rightarrow 0 \Rightarrow p(c_1|x) = 1.0$

$p(c_2|x) = 0.0$

uniform sampling  $\swarrow$  greedy sampling