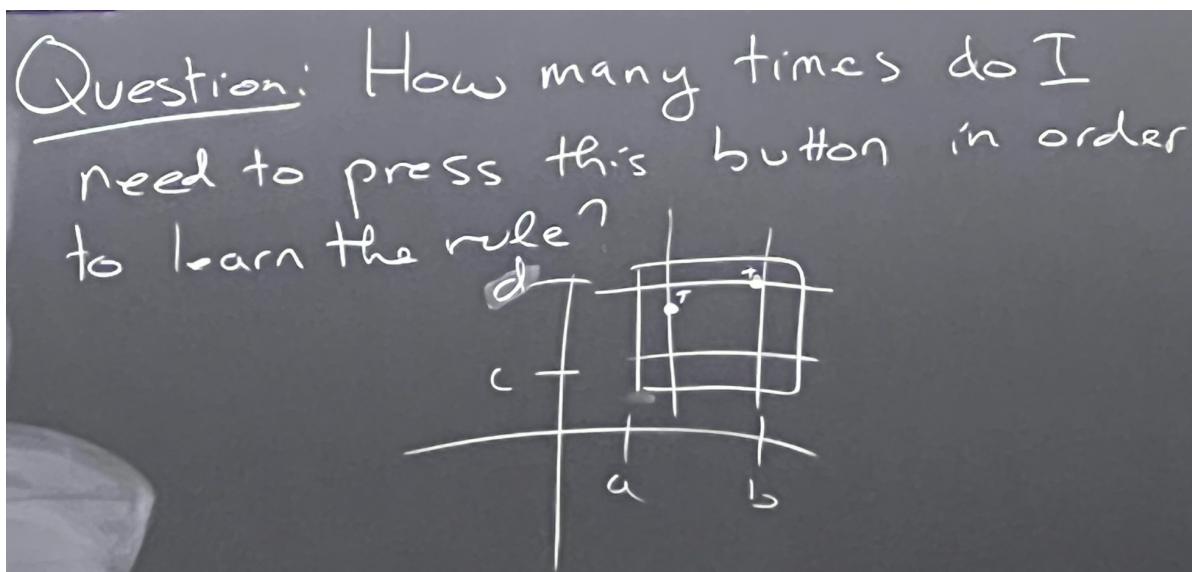


CS 506 - Tools for Data Science

Date: 4/27/2022

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s.t. $P(T_1) = P(T_2) = \frac{\varepsilon}{2}$

For any dist D
Prob. generate m ex's outs. side T_1 or T_2

$$\left(1 - \frac{\varepsilon}{2}\right)^m$$
$$P(\text{outs. } T_1 \cup T_2) \leq 2\left(1 - \frac{\varepsilon}{2}\right)^m$$

$$1 - 2\left(1 - \frac{\varepsilon}{2}\right)^m \geq p$$

Trick: $1-x \leq e^{-x}$

$$2\left(1 - \frac{\varepsilon}{2}\right)^m \leq 1-p$$

some math

$$m \geq \frac{2}{\varepsilon} \log\left(\frac{2}{1-p}\right)$$