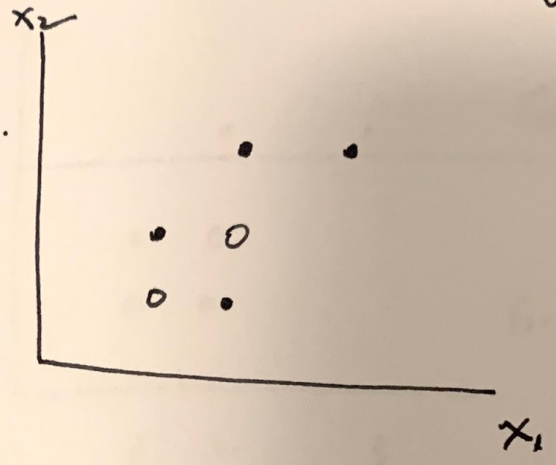
Decision Tree !

$$I_G = 1 - \sum (P_i)^2$$

Prob of your guess is correct

Prob your are right.



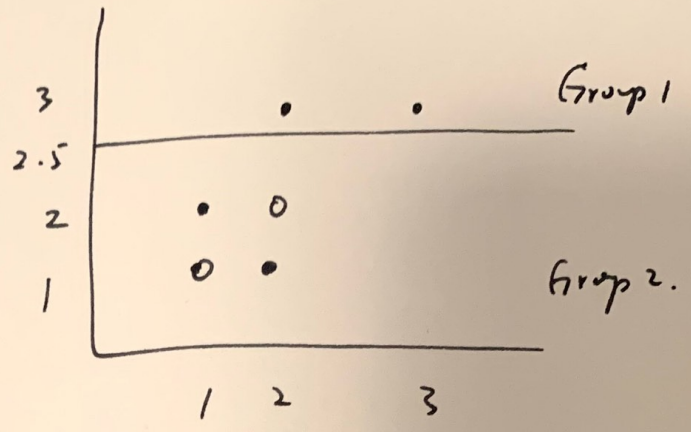
w/ no chops.

guess white right : $\frac{2}{6}$

guess black : $\frac{4}{6}$.

$$\therefore I_{root} = 1 - \left(\left(\frac{2}{6}\right)^2 + \left(\frac{4}{6}\right)^2 \right) \quad \text{ex } 0.44 = \text{Entropy}$$

Compute entropy for each groups.



$$I_{Group1} = 1 - \left(\left(\frac{2}{2}\right)^2 + \left(\frac{0}{2}\right)^2\right) = 0$$

(black, white.)

$$I_{Group2} = 1 - \left(\left(\frac{2}{4}\right)^2 + \left(\frac{2}{4}\right)^2\right) = 0.5.$$

(black, white)

$$I_G = \frac{2}{6} \cdot I_{Group1} + \frac{4}{6} I_{Group2} = \frac{1}{3}. < 0.444.$$

↑ total.

∴ Entropy reduce after chopping