Ahmed Emad Eldeen Ahmed

$S[8^+, 6^-]$ Entropy = 0.985

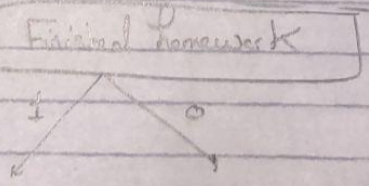
* Early Registration
  - $S_1[4+, 2-]$ Entropy = 0.918
  - $S_0[4+, 4-]$ Entropy = 1
  - Gain = $0.985 - \frac{6}{14} * 0.918 - \frac{8}{14} * 1 = 0.02$

* Finished Homework
  - $S_1[5+, 2-]$ Entropy = 0.863
  - $S_0[3+, 4-]$ Entropy = 0.985
  - Gain = 0.061

* Senior
  - $S_1[5+, 3-]$ Entropy = 0.954
  - $S_0[3+, 3-]$ Entropy = 1
  - Gain = 0.011

* Like Coffee
  - $S_1[3+, 2-]$ Entropy = 0.971
  - $S_0[5^+, 4^-]$ ___ = 0.991
  - Gain = $1.14 * 10^{-3}$

* like the last homework
  - $S[5^+, 4^-]$ = 0.991
  - $S[3^+, 2^-]$ = 0.969
  - Gain = 0.011478



Yes

Likes Coffee

E(1) S[1+, 1-] = 0.5

E(0) S[4+, 1-] = $\frac{-4}{5}\log\left(\frac{4}{5}\right) + \frac{-1}{5}\log\left(\frac{1}{5}\right) = 0.7219$

E(S) = $0.863 - \frac{2}{4} \times 0.5 - \frac{5}{4} * 0.7219 = 0.2045$

Early Registeration

E(1) [3+, 0-] Entropy = 0

E(0) [2+, 2-] Entropy = 1

Gain = 0.291

Server

S_1 [4+, 2-] Entropy = 0.918

S_0 [1+, 0] Entropy = 0

G = 0.076

Linkedin work

E(1) = 0.97

E(0) = 0

G = 0.167

No

* like coffe

E[0] S[1+, 4-] → $\frac{-1}{5}\log_2(1/5) - \frac{4}{5}\log(4/5) = 0.7219$

E(1) S[2+, 0-] → 0

$0.98 - 0.7219 * \frac{5}{7} - 0 = 0.464$

* Senior

E[0] S[1+, 3-] = $\frac{-1}{4}\log_2(1/4) + \frac{-3}{4}\log_2(\frac{3}{4}) = 0.811$

E[1] S[2+, 1-] = $\frac{-1}{3}\log_2(1/3) + \frac{-2}{3}\log_2(2/3) = 0.918$

$0.98 - 0.811 * \frac{4}{7} - 0.918 * \frac{3}{7} = 0.1231$

* Early Reg

E[0] S[2+, 2-] = 1

E[1] S[2+, 1-] = $\frac{-1}{3}\log(1/3) - \frac{2}{3}\log(2/3) = 0.918$

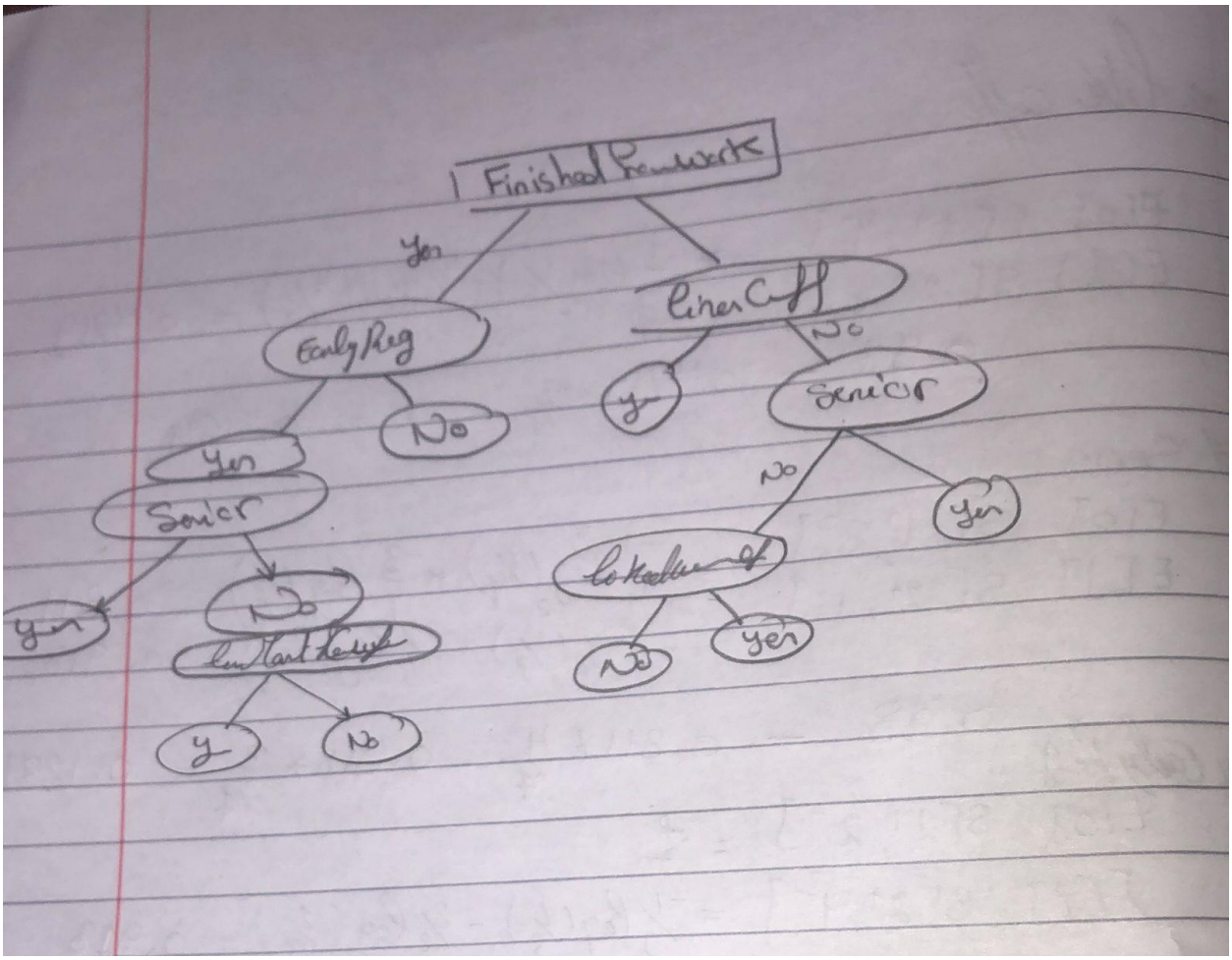
$0.98 - \frac{3}{7} * 0.918 - 1 * \frac{4}{7} = 0.01514$

* homework

S_1 [4+, 3-] Entropy = 0.98

S_2 [2+, 2-] ——— = 1

G = 0.01


Finished Prework
Yes
Liner Cutoff
Early Reg
No
Yes
Senior
No
Yes
No
Senior
No
Yes