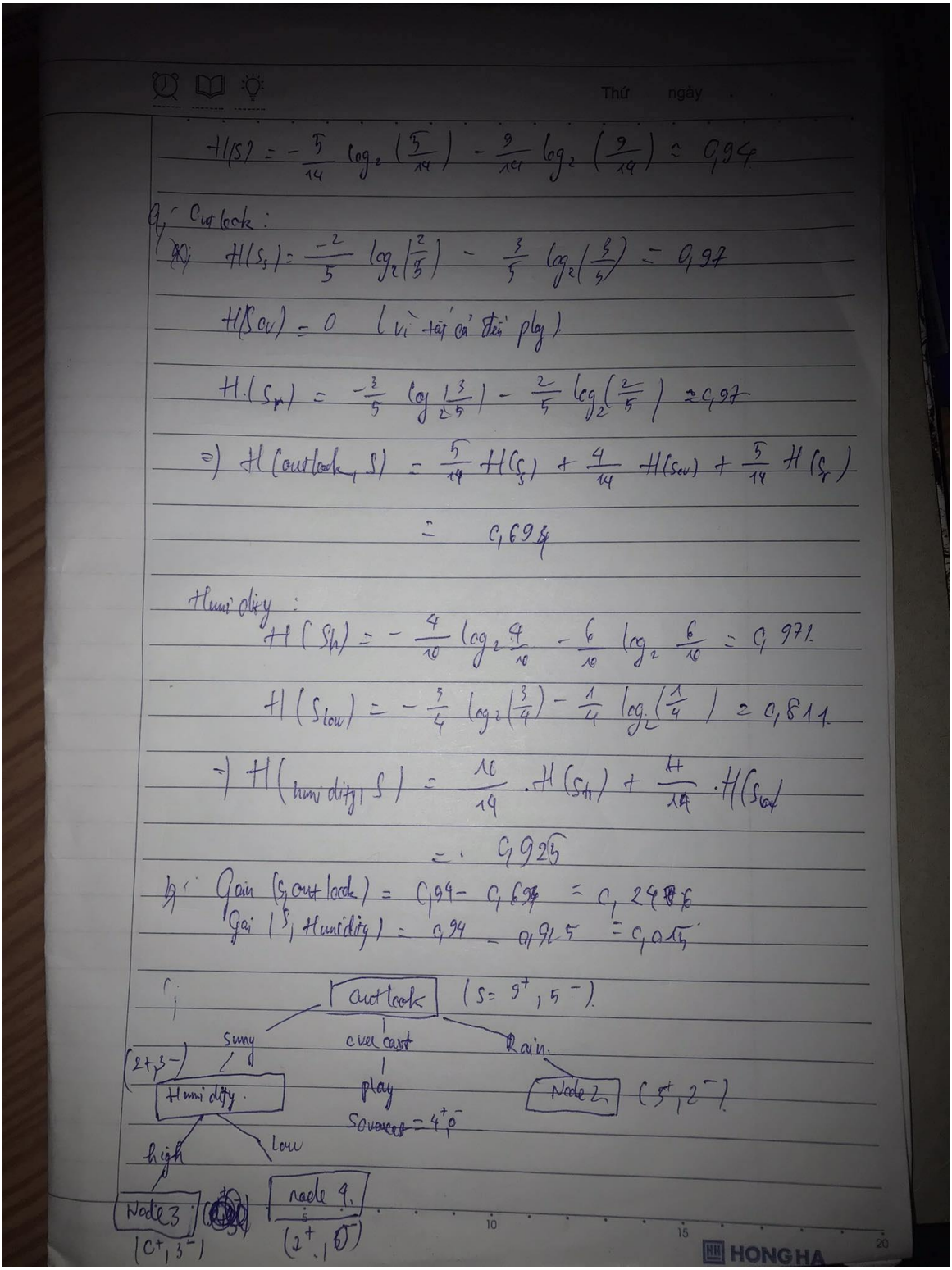
https://github.com/arceus1410/AI.git



$$H(S) = -\frac{5}{14}\log_2\left(\frac{5}{14}\right) - \frac{9}{14}\log_2\left(\frac{9}{14}\right) \approx 0,94$$

a, Outlook:

$$H(S_{sunny}) = \frac{-2}{5}\log_2\left(\frac{2}{5}\right) - \frac{3}{5}\log_2\left(\frac{3}{5}\right) = 0,97$$

$$H(S_{ov}) = 0 \quad (\text{vì tất cả đều play})$$

$$H(S_{rain}) = -\frac{3}{5}\log\left(\frac{3}{5}\right) - \frac{2}{5}\log_2\left(\frac{2}{5}\right) = 0,97$$

$$\Rightarrow H(Outlook, S) = \frac{5}{14}H(S_{sunny}) + \frac{4}{14}H(S_{ov}) + \frac{5}{14}H(S_{rain})$$

$$= 0,694$$

Humidity:

$$H(S_{high}) = -\frac{4}{10}\log_2\frac{4}{10} - \frac{6}{10}\log_2\frac{6}{10} = 0,971$$

$$H(S_{low}) = -\frac{3}{4}\log_2\left(\frac{3}{4}\right) - \frac{1}{4}\log_2\left(\frac{1}{4}\right) = 0,811$$

$$\Rightarrow H(Humidity, S) = \frac{10}{14}\cdot H(S_{high}) + \frac{4}{14}\cdot H(S_{low})$$

$$= 0,925$$

b, $Gain(S, Outlook) = 0,94 - 0,694 = 0,246$

$Gai(S, Humidity) = 0,94 - 0,925 = 0,015$

c,