นางสาวจัชราภรณ์ นามมุงคุณ

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การบ้าน Chapter 8

จากการคำนวณ $Gain(age) = Info(D) - Info_{age}(D) = 0.246$

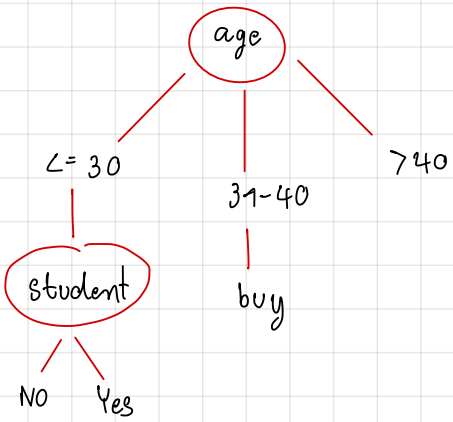
Similarly, we can get

$Gain(income) = 0.029$

$Gain(student) = 0.151$

$Gain(Credit\_rating) = 0.048$

1) เลือก root (รากจากค่า Gain ที่มากที่สุด) คือ Gain (age = 0.246)



คำนวณ ★ $= < 30 \rightarrow Info(D) = I(\overset{Y}{2},\overset{N}{3}) = -\frac{2}{5}\log_2\frac{2}{5} - \frac{3}{5}\log_2\frac{3}{5}$

- $Info\ income(D) = \frac{2}{5}I(\overset{(high)}{0,2}) + \frac{2}{5}I(\overset{(medium)}{1,1}) + \frac{1}{5}I(\overset{(low)}{1,0}) \rightarrow (Y,N)$
- $Info\ student(D) = \frac{2}{5}I(\overset{Yes}{2,0}) + \frac{3}{5}I(\overset{NO}{0,3})$
- $Info\ Credit\_rating(D) = \frac{3}{5}(I)(\overset{fair}{1,2}) + \frac{2}{5}(I)(\overset{excellent}{1,1})$

★ $31-40 \rightarrow Info(D)\ I(4,0) = -\frac{4}{0}\log_2\frac{4}{0} - \frac{0}{4}\log_2\frac{0}{4}$

- $Info\ income(D) = \frac{2}{4}I(\overset{high}{2,0}) + \frac{1}{4}I(\overset{medium}{1,0}) + \frac{1}{4}I(\overset{low}{1,0})$
- $Info\ student(D) = \frac{2}{4}I(\overset{Yes}{2,0}) + \frac{2}{4}I(\overset{NO}{2,0})$
- $Info\ Credit\_rating(D) = \frac{2}{4}I(\overset{fair}{2,0}) + \frac{2}{4}I(\overset{excellent}{2,0})$

★ $> 40 \rightarrow Info(D)\ I(\overset{Y}{3},\overset{N}{2}) = -\frac{3}{5}\log_2\frac{3}{5} - \frac{2}{5}\log_2\frac{2}{5}$

- $Info\ income(D) = \frac{3}{5}I(\overset{medium}{2,1}) + \frac{2}{5}I(\overset{low}{1,1})$
- $Info\ student(D) = \frac{3}{5}I(\overset{Yes}{2,1}) + \frac{2}{5}I(\overset{NO}{1,1})$
- $Info\ Credit\_rating(D) = \frac{3}{5}I(\overset{fair}{3,0}) + \frac{2}{5}I(\overset{excellent}{0,2})$