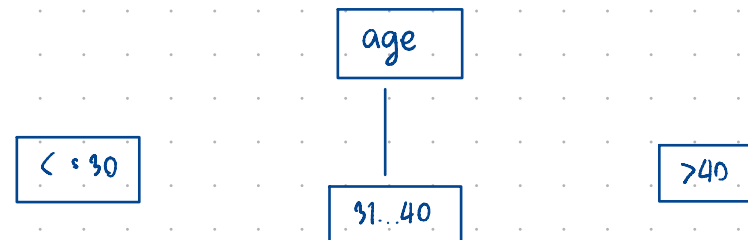


age	income	student	credit_rating	buys_computer
<=30	high	no	fair	no
<=30	high	no	excellent	no
31...40	high	no	fair	yes
>40	medium	no	fair	yes
>40	low	yes	fair	yes
>40	low	yes	excellent	no
31...40	low	yes	excellent	yes
<=30	medium	no	fair	no
<=30	low	yes	fair	yes
>40	medium	yes	fair	yes
<=30	medium	yes	excellent	yes
31...40	medium	no	excellent	yes
31...40	high	yes	fair	yes
>40	medium	no	excellent	no



yes no

age	P_i	n_i	$I(P_i, n_i)$
<=30	9	9	
31...40	9	0	
>40	9	9	

$$\text{Info}(D) = I(9, 4) = -\frac{9}{14} \log_2\left(\frac{9}{14}\right) - \frac{4}{14} \log_2\left(\frac{4}{14}\right) = 0.918$$

$$\begin{aligned} \text{Info}_{\text{age}}(D) &= \frac{4}{19} I(9, 9) + \frac{9}{19} I(9, 0) + \frac{9}{19} I(9, 9) \\ &= 0.8616 + 0 + 0.4045 = \end{aligned}$$

$$\begin{aligned} \text{Info}_{\text{income}}(D) &= \frac{4}{19} I(9, 9) + \frac{5}{19} I(4, 1) + \frac{9}{19} I(9, 1) \\ &= \end{aligned}$$