

Quiz 8 from Information Gain for 3 feature $\text{Info}_x(D)$

age	income	student	credit rating	buys computer
<=30	high	no	fair	no
<=30	high	no	excellent	no
>40	medium	no	fair	yes
>40	low	yes	fair	yes
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
<=30	high	no	excellent	yes
31...40	high	yes	fair	yes
>40	medium	no	excellent	no

$$\text{Info}(D) = I(7, 4)$$

$$\text{Info}_{\text{age}}(D) = \frac{5}{11} I(2, 3) + \frac{2}{11} I(2, 0) + \frac{4}{11} I(3, 1)$$

$$\text{Info}_{\text{student}}(D) = \frac{6}{11} I(6, 0) + \frac{5}{11} I(1, 4)$$

$$\text{Info}_{\text{credit-rating}}(D) = \frac{4}{11} I(2, 2) + \frac{7}{11} I(5, 2)$$