

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

$$\text{Info}(D) = (6, 4) = -\frac{6}{12} \log_2\left(\frac{6}{12}\right) - \frac{4}{12} \log_2\left(\frac{4}{12}\right) = 0.9183$$

$$\text{Info}_{\text{age}}(D) = \frac{4}{12} I(2, 2) + \frac{3}{12} I(3, 0) + \frac{5}{12} I(3, 2) = 0.738$$

$$\text{Gain}(\text{age}) = \text{Info}(D) - \text{Info}_{\text{age}}(D) = 0.1803$$

income	0.937	0.021
student	0.918	0.1316
✓ credit	0.959	0.048

