

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

age ≤ 30

1	N
2	N
8	N
9	Y
11	Y

student

	P_i	n_i
yes	2	0
no	0	3

-1.32

-0.74

$$\text{Info}(D) = I(2,3) = -\frac{2}{5} \log_2\left(\frac{2}{5}\right) - \frac{3}{5} \log_2\left(\frac{3}{5}\right) =$$

$$= 0.528 + 0.444 = 0.972$$

$$\text{Info}_{\text{student}}(D) = \frac{2}{5} I(2,0) + \frac{3}{5} I(0,3)$$

$$= 0.528 + 0.444$$

$$= 0.972$$

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<=30	medium	yes	excellent	yes
31...40	medium	no	excellent	yes
31...40	high	yes	fair	yes
>40	medium	no	excellent	no

age > 40

4	Y
5	Y
6	N
10	Y
14	N

credit

	p _i	n _i
fair	3	0
ex	0	2

$$Info(D) = -\frac{3}{5} \log_2\left(\frac{3}{5}\right) - \frac{2}{5} \log_2\left(\frac{2}{5}\right)$$

$$= 0.444 + 0.528 = 0.972$$

$$Info_{credit}(D) = \frac{3}{5} I(3,0) + \frac{2}{5} I(0,2)$$

$$= 0.444 + 0.528 = 0.972$$