

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				student			
<=30	Y	N	4	No	3	3	6
31...40	3	0	3	Yes	5	1	6
>40	3	2	5				
income				credit			
h	2	2	4	f	6	1	7
m	4	1	5	e	2	3	5
L	2	1	3				

$$\text{Class Info}(D) = \sum_{i=1}^n p_i \log_2(p_i)$$

$$= I(8, 4)$$

$$= -\frac{8}{12} \log_2\left(\frac{8}{12}\right) - \frac{4}{12} \log_2\left(\frac{4}{12}\right) = 0.918$$

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

$$\text{Info}_{\text{income}}(D) = \frac{4}{12} I(2, 2) + \frac{5}{12} I(4, 1) + \frac{3}{12} I(2, 1) =$$

$$\text{Info}_{\text{std}}(D) = \frac{6}{12} I(3, 3) + \frac{6}{12} I(5, 1) =$$

$$\text{Info}_{\text{credit}}(D) = \frac{7}{12} I(6, 1) + \frac{5}{12} I(2, 3) =$$