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

- Class P: buys_computer = "yes" = 9
- Class N: buys_computer = "no" = 5

14

$$Info(D) = I(9,5) = -\frac{9}{14}\log_2(\frac{9}{14}) - \frac{5}{14}\log_2(\frac{5}{14}) = 0.940$$

age	p_i	n_i	$I(p_i, n_i)$
<=30	2	3	0.971
31…40	4	0	0
>40	3	2	0.971

$\frac{5}{14}$

$$I(6,1) = -\frac{6}{14}\log_2\frac{6}{14} - \frac{1}{14}\log_2\frac{1}{14} = 0.796$$

$$I(3,4) = -\frac{3}{14}\log_2\frac{3}{14} - \frac{4}{14}\log_2\frac{4}{14} = 0.985$$

$$Info_{student}(D) = \frac{7}{14}\left(I(6,1)\right) + \frac{7}{14}\left(I(3,4)\right)$$

$$= \frac{7}{14}(0.796) + \frac{7}{14}(0.985)$$

$$= 0.891$$