subscriberId	pagecount	liked
1	150	yes
2	300	No
3	200	yes
4	250	No
5	100	yes

⇓ sorted

subscriberId	page count	liked
5	100	yes
1	150	yes
3	200	yes
4	250	No
2	300	No

Value ≤	yes	NO	Total	P(yes)	P(No)	S_1/S_2
100	1	0	1	1	0	$\frac{1}{5}$
150	2	0	2	1	0	$\frac{2}{5}$
200	3	0	3	1	0	$\frac{3}{5}$
250	3	1	4	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{4}{5}$
300	3	2	5	$\frac{3}{5}$	$\frac{2}{5}$	1
Value >	yes	NO	Total	P(yes)	P(No)	S_1/S_2
100	2	2	4	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{4}{5}$
150	1	2	3	$\frac{1}{3}$	$\frac{2}{3}$	$\frac{3}{5}$
200	0	2	2	0	1	$\frac{2}{5}$
250	0	1	1	0	1	$\frac{1}{5}$
300	0	0	0	0	0	0

Value ≤	$-P\cdot\log_2(P)$ ⇒ yes	$-P\cdot\log_2(P)$ ⇒ No	total	S_i/S
100	0	X	0	$\frac{1}{5}$
150	0	X	0	$\frac{2}{5}$
200	0	X	0	$\frac{3}{5}$
250	0.377	0.5	0.877	$\frac{4}{5}$
300	0.442	0.528	0.97	1
Value >	$-P\cdot\log_2(P)$ ⇒ yes	$-P\cdot\log_2(P)$ ⇒ No	total	S_i/S
100	0.5	0.5	1	$\frac{4}{5}$
150	0.528	0.389	0.917	$\frac{3}{5}$
200	X	0	0	$\frac{2}{5}$
250	X	0	0	$\frac{1}{5}$
300	X	0	0	0

$Gain(A,T;S) = ent(S) - E(A,t;S)$

$ent(S) = -\frac{2}{5}\cdot\log_2(\frac{2}{5}) - \frac{3}{5}\cdot\log_2(\frac{3}{5})$ $ent(S) = 0.97$

Page count	$E(A,t;S)$	$ent(S) - E(A,t;S)$
100	$\frac{2}{5}\cdot 0 + \frac{4}{5}\cdot 1 = \frac{4}{5}$	$0.97 - \frac{4}{5} = 0.17$
150	$\frac{2}{3}\cdot 0 + \frac{3}{5}\cdot 0.917$	$0.97 - 0.582 = 0.42$
200	$\frac{3}{4}\cdot 0 + \frac{1}{5}\cdot 0 = 0$	$0.97 - 0 = 0.97$
250	$\frac{4}{5}\cdot 0.811 + \frac{1}{5}\cdot 0 = 0.64$	$0.97 - 0.64 = 0.32$
300	$1\cdot 0 + 0.97\cdot 1 = 0.97$	$0.97 - 0.97 = 0$

discretzise by 200

page count
≤ 200
≤ 200
> 200
> 200