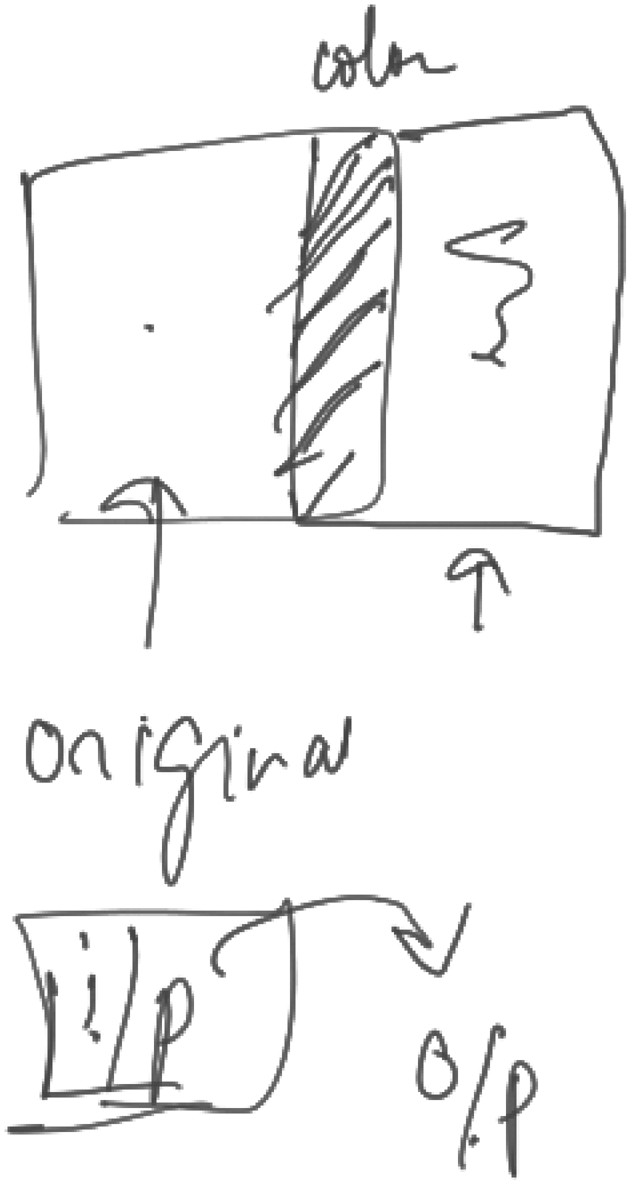
| color → | R | B | G | Y | W | Bl |
|---|---|---|---|---|---|---|
| R | 1 | 0 | 0 | 0 | 0 | 0 |
| B | 0 | 1 | 0 | 0 | 0 | 0 |
| R | 1 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 0 | 1 | 0 | 0 | 0 |
| Y | 0 | 0 | 0 | 1 | 0 | 0 |
| B | 0 | 1 | 0 | 0 | 0 | 0 |
| W | 0 | 0 | 0 | 0 | 1 | 0 |
| Bl | 0 | 0 | 0 | 0 | 0 | 1 |
| R | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 0 | 0 | 0 | 0 | |

0 = 0

0 = 0

0 = 1

df - new




dict : R, B, G, Y, W, Bl

$\boxed{1994}$ = $\boxed{\text{age}}$ > 60

Covid

find real pat

reduce false +ve

| Act | |
|---|---|
| 1 | 1 ✓ |
| 1 | 0 ✗ |
| 0 | 1 ✗ |
| 0 | 0 ✓ |
| 0 | 0 ✗ |
| 1 | 0 ✗ |
| 0 | 1 ✗ |

6

2

4

1 1

1 0 0

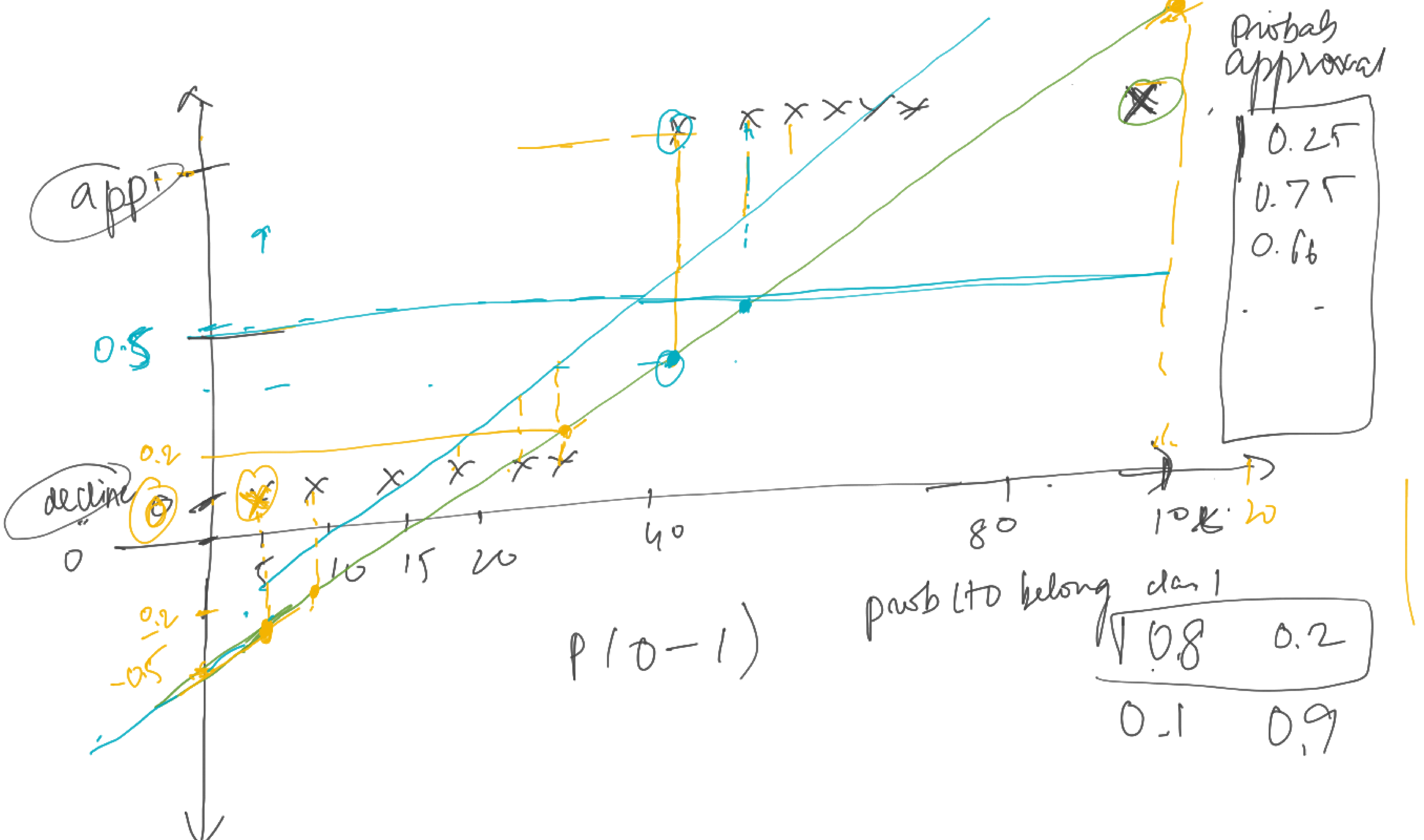
Spam = 1 / 0

corr / total

e:

1 0

0 1


app
decline
0.5
0.2
0.2
-0.5
0
5
10
15
20
40
80
100k
20
Probab approval
0.25
0.75
0.66
P (0-1)
prob (to belong class 1
0.8 0.2
0.1 0.9

$$\boxed{p = \frac{1}{1+e^{-(mx+c)}}} \leftarrow \text{sig}$$

[1, 2, 3, 4, 5, 6]

$$\boxed{y = mx + c} - (-\infty \quad +\infty)$$

$$\boxed{p = mx + c} \quad [0 - 1]$$

$$p(a > 4) = \frac{2}{6} = \frac{1}{3}$$

$$1 - p = p(\text{non occ}) \quad 4$$

$$\boxed{p(a \le 4) = \frac{4}{6} = \frac{2}{3}}$$

odds 2 4

$$\frac{p(\text{occurrence})}{p(\text{non occ})} \quad 1 - p(\text{occ})$$

$$\text{odds} \quad \frac{p}{p_{non}} = \frac{p}{1-p}$$

$$\text{odds} \quad \boxed{\frac{p}{1-p}}$$

$$\frac{1/3}{1 - 1/3} = \frac{1/\cancel{3}}{\frac{3-1}{\cancel{3}}} = \boxed{\frac{1}{2} = 0.5}$$

[R, B, G, B, R, G, R, B]

$R : 3$

$B : 3$

$G : 2$

$R = \boxed{3}/8$ ← get red

$\boxed{\text{not } R} = P(B) + P(G) = \boxed{5}/8$ ← no get red

odds $\dfrac{\boxed{\text{get}}}{\boxed{\text{not getting}}} = \dfrac{3}{5}$

$\boxed{1 - \text{getting}}$

$1 - \dfrac{3}{8} = \dfrac{8-3}{8}$

$= \dfrac{5}{8}$

$$\left(\frac{p}{1-p}\right) = mx + c \qquad (0, +\infty)$$

$$\frac{0}{1-0} = \frac{0}{1} = 0$$

$$\frac{1}{1-1} = \frac{1}{0} = \infty$$

$$\log\left(\frac{p}{1-p}\right) = mx + c \qquad (-\infty, \infty)$$

$$\cancel{\exp}\left(\cancel{\log}\left(\frac{p}{1-p}\right)\right) = \exp(mx+c)$$

$$\boxed{e^{\cancel{\log} x}} = \boxed{x}$$

$$\frac{p}{(1-p)} = e^{(mx+c)}$$

$$p = \boxed{(1-p)\,e^{(mx+c)}} \qquad \boxed{\cancel{p} = e^{(mx+c)} - p\,e^{(mx+c)}}$$

$$\cancel{p} = \cancel{p}\left[\frac{e^{(mx+c)}}{p} - e^{(mx+c)}\right]$$

$$1$$

$$1 = \frac{e^{(mx+c)}}{p} - e^{(mx+c)}$$

$$1 = \frac{e^{mx+c}}{p} - e^{mx+c}$$

$$1 + e^{mx+c} = \frac{e^{mx+c}}{p}$$

$$p\left(1 + e^{(mx+c)}\right) = e^{mx+c}$$

$$\boxed{p = \frac{e^{mx+c}}{1 + e^{(mx+c)}}}$$

$$p = \frac{\cancel{e^{mx+c}}}{\cancel{e^{mx+c}}} \quad 1$$

$$\boxed{\frac{1 + e^{(\cancel{mx}+c)}}{e^{(\cancel{m}x+c)}}}$$

$$e^{-(mx+c} + 1$$

$$\boxed{\frac{1}{e^{mx+c}} = e^{-mx+c}}$$

$$p = \frac{1}{1 + e^{-c}}$$