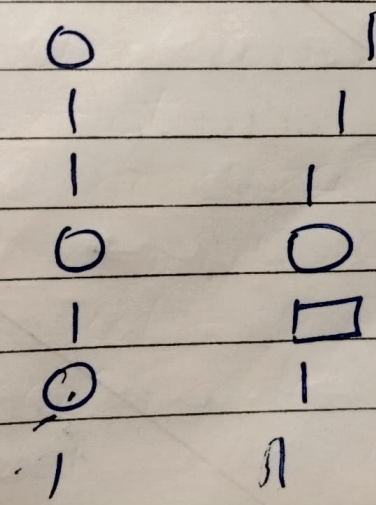
Q. Draw the confusion matrix for logistic Regression Problem.?

x_1	x_2	y (actual)	(Predicted) yout



Confusion Matrix

(Actual)

(Predicted)	1	0
1	T.P	F.P
0	F.N	TN

---> Actual

Predicted

	1	0
1	3	2
0	1	1

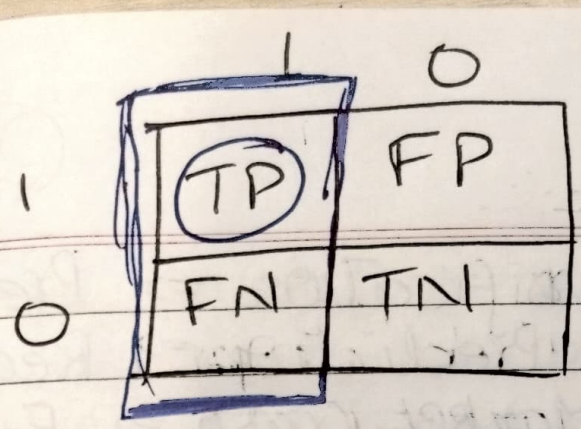
(I) ---> Accuracy $= \frac{TP+TN}{TP+FP+FN+TN}$

$= \frac{4}{7} = 0.571$

(II) Precision $\Rightarrow \frac{TP+TN}{TP+FP}$ $\frac{TP}{TP+FP}$

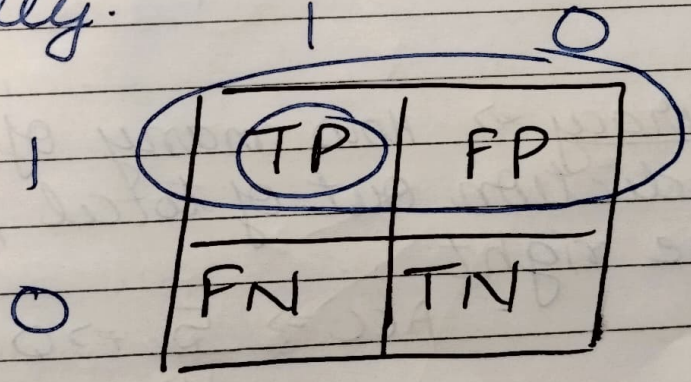
(III) Recall $\Rightarrow \frac{TP}{TP+FN}$

↳ Out of all the +ve value, how many predicted correctly.



Recall: From all the actual +ve value, how many are predicted correctly

Precision: All the predicted +ve value, how many are predicted correctly.



+ve => 1
-ve => 0

$$\text{Precision} \Rightarrow \frac{TP}{TP + FP}$$

Q for Spam classification & for Cancer Detection which will be give Priority => Precision or Recall?

Spam Classification => Precision
CANCER Prediction => Recall
Stock Market Crash => F-Score

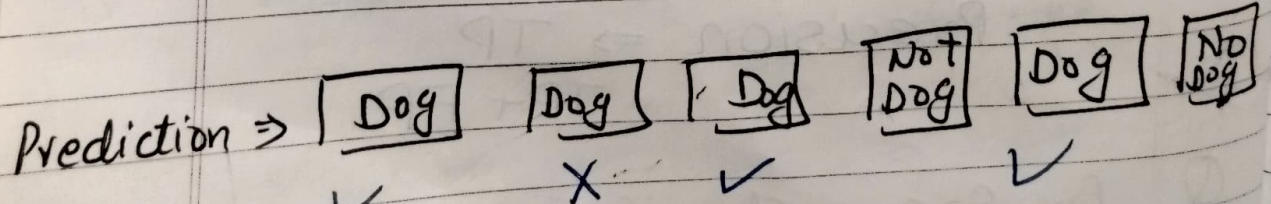
F1-Score ↝ Harmonic mean of precision & recall.

↳ $\frac{2(\text{Precision} \times \text{Recall})}{\text{Precision} + \text{Recall}}$

- Accuracy => How many of your prediction out of total prediction are right.

$$ACC \Rightarrow \frac{5}{10} \Rightarrow 0.5$$

- Precision => out of all +ve predic-tion how many you got it right



Precision => $\frac{3}{4}$ => 0.75.

classmate

Date

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Recall => Out of all actual +ve how many are predicted.

★ Precision, Recall can be checked for Negative class also.