

		Actual	
		Not fraud	fraud
Pred	N.F	229359	92
	F	108	286

} → fraud

$$\text{Accuracy} = \frac{TP + TN}{\text{Total}}$$

→ 99.1%

Accuracy  
Failing when we have imbalanced dataset

(1)

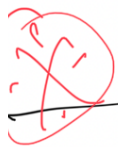
		Actual	
		fraud	Not fraud
Predicted	fraud	TP	FP
	Not fraud	FN	TN

Active Test

Total Acc: TP + TN

	Actual	
	Fraud	Not Fraud
Predicted	TP	FP
	FN	TN

Correct



Recall  
Sensitivity  
→ T.P.R.

$$\Rightarrow \frac{TP}{TP + FN}$$

Total true predictions out of all the total actual true

Specificity  
→ T.N.R.

$$\Rightarrow \frac{TN}{TN + FP}$$

$$\Rightarrow \frac{TN}{TN + FP}$$

Precision →  $\frac{TP}{TP + FP}$  → Total how much is correctly predicted / total Predicts

(X)



$\Rightarrow$  from all the classes we have predicted as +ve, how many are actually +ve.

$f_1$  Score =  $\frac{2 \times \text{Recall} \times \text{Precision}}{\text{Recall} + \text{Precision}}$

		Actual	
		N.F	F
Predict	N.F	227359	92
	F	108	286

Recall  $\Rightarrow \frac{227359}{227359 + 108} \rightarrow 0.99$

Precision =  $\frac{227359}{227359 + 92} = 0.99$

f1 score  $\Rightarrow \frac{2 \times 0.99 \times 0.99}{0.99 + 0.99} = \frac{1.9602}{1.98} \rightarrow 1$

Precision  $\leq 0.72$

Recall  $\leq 0.75 \quad f1 \Rightarrow 0.73$