# Assignment - 1

1) Table shows output of real practical & model values

| Predicted values \ Actual values | positive | Negative |
|---|---|---|
| positive | 560 | 60 |
| Negative | 50 | 330 |

a) True Positive

⇒ 560,

which mean model predict +ve, & the actual vals are also positive

(b) True Negative

⇒ 330,

Model predicts Negative & actual value is also Negative

(c) False Positive

⇒ 60

Model predict positive & actual vals are Negative

(d) False Negative

⇒ 50

Model Predicts Negative & actual vals are positive

(e) Accuracy:

$$= \frac{TP + TN}{TP + TN + FP + FN}$$

$$= 0.89$$

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

$$= \frac{560}{560 + 60}$$

$$= 0.903$$

$$\text{Recall} = \frac{TP}{TP + FN}$$

$$= \frac{560}{560 + 50}$$

$$= 0.918$$

$$\text{F1 Score} :- \frac{2}{\frac{1}{\text{precision}} + \frac{1}{\text{recall}}} = \frac{2}{\frac{1}{0.903} + \frac{1}{0.918}}$$

$$= 0.9104$$

Accuracy:- Preferred when dataset is equally balanced on & the model perform well on both classes.

Precision: when the focus is more on false positive then we prefer precision

Recall: when the focus is more on False negative then we prefer recall

F1-Score: When the focus is on both false positive and false negative or when FP & FN carry equal Importance then we prefer F1-Score.