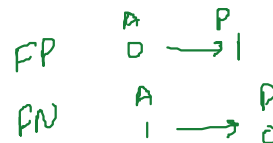


Performance Analysis

11 May 2022 17:30

Actual	Prediction
1	1
0	0
0	0
0	0
1	0
1	0
0	0
0	0
0	1
1	1
1	1
1	0
1	0
1	0
0	1
1	0
1	0
0	0
0	0
0	0

$$\text{Accuracy} = 11 \cdot 100 / 20 = 55\%$$



Performance Analysis 100 Customers

Actual

90 - 0 - not leave
10 - 1 - left

Prediction : model 1

95 - 0 - not leave
05 - 1 - leave

$$A = \frac{95}{100} = 95\%$$

Recall (relevant Accuracy to claim)
business objective = $\frac{5}{10} = 50\%$

$$\text{Precision} = \frac{05}{05} = 100\%$$

Prediction: model 2

80 - 0 - not leave
20 - 1 - leave

$$A = \frac{80}{100} = 80\%$$

$$\text{Recall} = \frac{10}{10} = 100\%$$

$$\text{Precision} = \frac{10}{20} = 50\%$$

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

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

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

Confusion Matrix

Actual

Actual Prediction	0 Negative	1 Positive
0	True Negative TN	False Positive FP
1	False Negative	True Positive

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

$$\text{Specificity} = \text{TNR} = \frac{TN}{TN + FP}$$

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

Actual

0	True Negative TN	False Positive FP
1	False Negative FN	True Positive TP

TP

$$\text{F1 score} = \frac{2}{\frac{1}{R} + \frac{1}{P}} = \frac{2 \times R \times P}{R + P}$$