Performance Analysis

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Actual	Predictions
1	1
1	0
1	0
1	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
1	0
1	0
0	0
0	0
0	0
0	1
0	0
1	1

Accuracy = 14*100/20 = 70 %
Recall = 2/7 = 0.2857 *100 = 28.57 %
Precision = 2/3 = 0.6667 *100 = 66.67

FP . 0 → 1 (A → P) - less expensive
FN 1 → 0 (A → P) - more expensive

Testing - 100 customers
Actual
90 = 0 - not leave
10 - 1 - left

Predictions - model2
80- 0 - not leave — 80
20 = 1 - leave — 10 ✓
90

A = 90/100 = 90%.

Recall = 10/10 = 100%

Precision = 10/20 = 50%

Predictions - model 1
95 - 0 - not leave — 90
05 - 1 - leave — 05

A = 95/100 = 95%

Recall { Relevant Business Accuracy / Accuracy of class 1 } = 5/10 = 50 %

Precision = 05/05 = 100%

1 - customers will default
0 - not default

FP 0 → 1 more expensive
FN 1 → 0 less

FP

FN

Prediction

Actual

Confusion Matrix

Actual | Predictions	0	1
0	True Negative TN	False Positive FP
1	False Negative FN	True Positive TP

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

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

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

$$\mu = \frac{x_1 + x_2 + x_3 + \cdots + x_n}{n}$$

$$HM = \frac{n}{\frac{1}{x_1} + \frac{1}{x_2} + \frac{1}{x_3} + \cdots \frac{1}{x_n}}$$

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

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