## Classifier Metrics

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|  | Actual: 1 | Actual: 0 |
| Predicted class: 1 | True Positive (TP) | False Negative (FN) |
| Predicted class: 0 | False Positive (FP) | True Negative (TN) |

**Accuracy** – Overall effectiveness of the classifier; can be misleading if class distribution is imbalanced.

* Proportion of total predictions correct:

**Precision** – Good for measuring quality of positive predictions, especially when cost of false positives is high.

* Proportion of correct positive predictions to total positive predictions (Positive Predictive value):

**Recall** (Sensitivity, True Positive Rate): Ensures that model correctly classifies as many positives as possible, especially important when missing a positive is costly.

* Proportion of correct positive predictions to all *actual* positives

**F1 score**: Harmonic mean of Precision and Recall – balanced score is useful when there is uneven class distribution and both False positives and False negatives are important.

* Weighted average of Precision and Recall

**Matthews Correlation Coefficient (MCC):** A more informative measure than Accuracy, especially for imbalanced datasets.