**Classification Model Evaluation**

* Confusion Matrix
  + Accuracy Score
  + Precision Score
  + Recall Score
  + F1 Score

**Confusion Matrix - Square Matrix**

**2x2 (In our Case)**

**0 (Predicted) 1 (Predicted)**

|  |  |  |
| --- | --- | --- |
| **0 (Actual)** | **00 - True Negative** | **01 - False Positive** |
| **1 (Actual)** | **10 - False Negative** | **11 - True Positive** |

**Accuracy Score - (TN + TP) / (TN + TP + FN + FP)**

**Precision Score**

* Out of total predicted positive samples, how many samples are actually positive
* TP / (TP + FP)

**Recall Score**

* Out of total actual positive samples, how many samples are predicted correctly positive
* TP / (TP + FN)

**F1-Score**

* Harmonic Mean of Precision & Recall Score
* 2 \* (P\*R) / (P+R)

Cancer - **Recall Score**

01 - FP - no cancer - cancer

10 - FN - cancer - no cancer

Spam Email - **Precision Score**

01 - FP - no spam - spam

10 - FN - spam- no spam