**Day 16 — 10 July 2025 (Thursday)**

**Topic: Model Performance Evaluation — Metrics**

Today we learned model evaluation metrics: **Accuracy, Precision, Recall, F1-Score, Confusion Matrix**. The trainer explained why accuracy alone is not reliable for imbalanced datasets like spam-ham (where ham emails are more common).  
We plotted confusion matrix to visualize predictions and misclassifications. I learned how recall helps identify missed spam emails and why spam detection systems optimize both **precision & recall**.

**Code Practiced:**

from sklearn.metrics import classification\_report, confusion\_matrix

print(classification\_report(y\_test, y\_pred))

print(confusion\_matrix(y\_test, y\_pred))