PERTEMUAN 05

MACHINE LEARNING

DOKUMENTASI HASIL OUTPUTNYA :

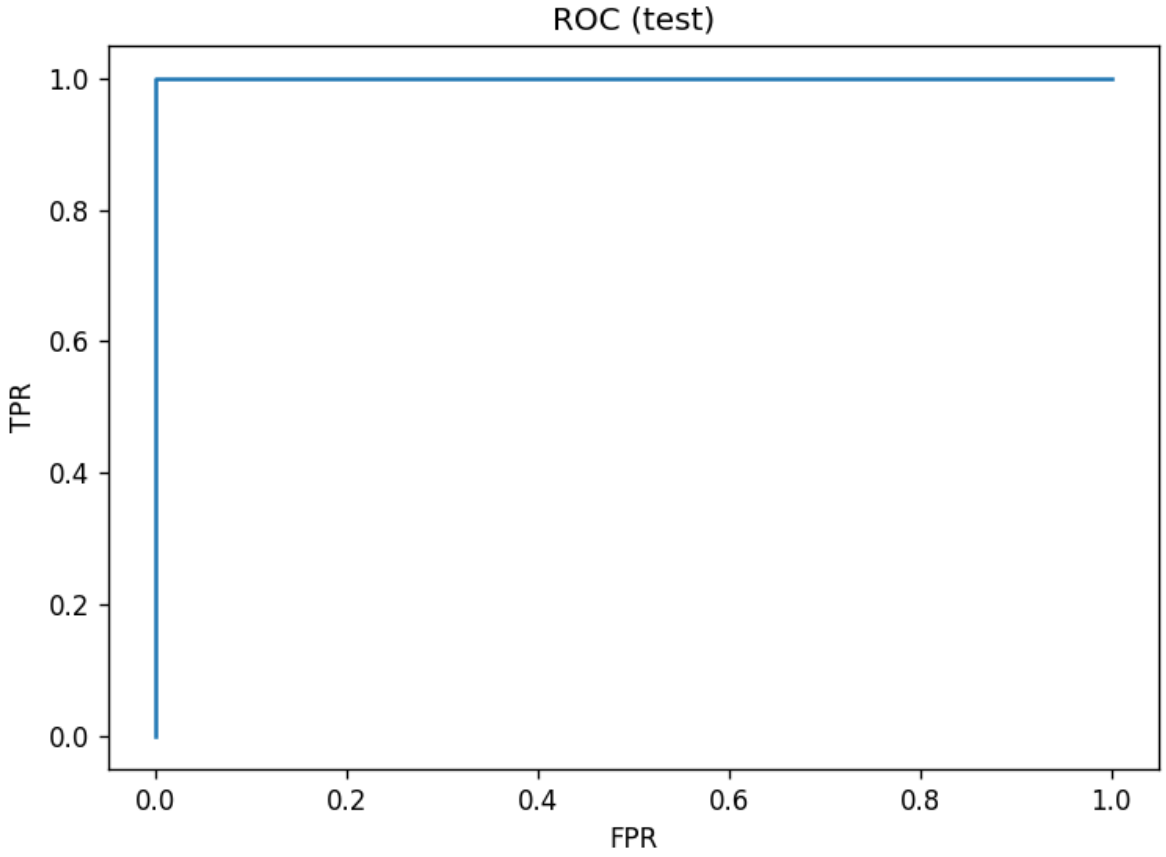
```
(8, 5) (2, 5)
Baseline (LogReg) F1(test): 1.0
              precision    recall  f1-score   support

           0      1.000     1.000     1.000         1
           1      1.000     1.000     1.000         1

    accuracy                         1.000         2
   macro avg      1.000     1.000     1.000         2
weighted avg      1.000     1.000     1.000         2

RandomForest F1(test): 1.0
```

```
 Best CV F1: 1.0
 Best RF F1(test): 1.0
 F1(test): 1.0
              precision    recall  f1-score   support

           0      1.000     1.000     1.000         1
           1      1.000     1.000     1.000         1

    accuracy                         1.000         2
   macro avg      1.000     1.000     1.000         2
 weighted avg      1.000     1.000     1.000         2
```

```
Confusion matrix (test):
[[1 0]
 [0 1]]
ROC-AUC(test): 1.0
qt.qpa.fonts: Unable to open default EUDC font: "EUDC.TTE"
Model tersimpan ke model.pkl
PS D:\machine_learning>
```

(Opsional) model.pkl + contoh endpoint Flask untuk inference.

```
from flask import Flask, request, jsonify
import joblib
import pandas as pd
# --- Load model ---
MODEL = joblib.load("model.pkl")
app = Flask(__name__)
@app.route("/")
def home():
  return " ✅ Flask Inference API untuk model kelulusan aktif!"
@app.route("/predict", methods=["POST"])
def predict():
    data = request.get_json(force=True)
    # Data contoh: {"IPK": 3.2, "Umur": 21, "SKS_Lulus": 130, ...}
    X = pd.DataFrame([data])
    y_pred = MODEL.predict(X)[0]
    proba = None
    if hasattr(MODEL, "predict_proba"):
        proba = float(MODEL.predict_proba(X)[:, 1][0])
    return jsonify({
        "prediction": int(y_pred),
        "proba": proba
    })

if __name__ == "__main__":
    app.run(debug=True)
```


ROC (test)
TPR
FPR
0.0
0.2
0.4
0.6
0.8
1.0