TUGAS SESI 6_EVALUASI KLASIFIKASI

NAMA : **MUHAMMAD FAKHRAJ JAELANI**

NIM : **20220040203**

KELAS : **TI 22 H**

---

[1]:
```
import numpy as np
import pandas as pd
from sklearn.datasets import load_wine
from sklearn.model_selection import train_test_split
from sklearn.tree import DecisionTreeClassifier
from sklearn.metrics import accuracy_score, classification_report
from sklearn import tree
import matplotlib.pyplot as plt
```

[2]:
```
# Muat dataset
wine = load_wine()

# Konversi dataset ke dalam DataFrame pandas
df = pd.DataFrame(data=np.c_[wine['data'], wine['target']],␣
 ↪columns=wine['feature_names'] + ['target'])

# Pisahkan fitur dan target
X = df.drop('target', axis=1)
y = df['target']

# Bagi data menjadi data latih dan data uji
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2,␣
 ↪random_state=42)
```

[3]:
```
# Inisialisasi dan latih model pohon keputusan
clf = DecisionTreeClassifier()
clf.fit(X_train, y_train)
```

[3]:
```
DecisionTreeClassifier()
```

[4]:
```
# Prediksi kelas untuk data uji
y_pred = clf.predict(X_test)

# Evaluasi akurasi
accuracy = accuracy_score(y_test, y_pred)
print("Akurasi:", accuracy)
```

```
# Laporan klasifikasi
print("\nLaporan Klasifikasi: ")
print(classification_report(y_test, y_pred  ))

# Visualisasi pohon keputusan
plt.figure(figsize =(15,10))
tree.plot_tree(clf, filled =True, feature_names =wine.feature_names, ␣
  ↪class_names =wine.target_names)
plt.show()
```

```
Akurasi: 0.9444444444444444
```

```
    Laporan Klasifikasi:
```

	precision	recall	f1-score	support
0.0	0.93	0.93	0.93	14
1.0	0.93	1.00	0.97	14
2.0	1.00	0.88	0.93	8
accuracy			0.94	36
macro avg	0.95	0.93	0.94	36
weighted avg	0.95	0.94	0.94	36