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import pandas as pd
from sklearn.preprocessing import LabelEncoder
from sklearn.model_selection import train_test_split
from sklearn.tree import DecisionTreeClassifier
from sklearn.metrics import classification_report, accuracy_score
import matplotlib.pyplot as plt
from sklearn import tree

df=pd.read_csv("/content/drive/MyDrive/temp/play_tennis_dataset.csv")

label_encoders = {}
categorical_features = ['Outlook', 'Temperature', 'Humidity', 'Wind',
'Play']
for col in categorical_features:
    if col in df.columns and df[col].dtype == 'object':
        le = LabelEncoder()
        df[col] = le.fit_transform(df[col])
        label_encoders[col] = le

X = df.drop([col for col in ['Play', 'Day'] if col in df.columns],
axis=1)

model = DecisionTreeClassifier()
model.fit(X, y)

DecisionTreeClassifier()

sample = pd.DataFrame([
    "Outlook": "Sunny",
    "Temperature": "Cool",
    "Humidity": "High",
    "Wind": "Strong"
])
print(sample)

Outlook Temperature Humidity Wind
0   Sunny         Cool      High Strong

for col in sample.columns:
    sample[col] = le.fit_transform(sample[col])

prediction = model.predict(sample)

# Decode result
result = "Yes" if prediction[0] == 1 else "No"
print("Prediction (Play Tennis):", result)

Prediction (Play Tennis): Yes

from sklearn.tree import plot_tree
import matplotlib.pyplot as plt
plt.figure(figsize=(14, 8))

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plot_tree(  
    model,  
    feature_names=X.columns,  
    class_names=["No", "Yes"],  
    filled=True  
)  
plt.title("Decision Tree - Play Tennis Dataset")  
plt.show()
```

