```python
import pandas as pd

from sklearn.model_selection import train_test_split

from sklearn.tree import DecisionTreeClassifier, plot_tree, export_text

from sklearn.metrics import accuracy_score

import matplotlib.pyplot as plt


# 1. Load the dataset

data = pd.read_csv('EX5.csv')


# 2. Convert input (attributes) to numeric using one-hot encoding

attributes = pd.get_dummies(data.drop('PlayTennis', axis=1))


# 3. Convert target to binary (Yes=1, No=0)

target = data['PlayTennis'].apply(lambda x: 1 if x == 'Yes' else 0)


# 4. Split the data

attributes_train, attributes_test, target_train, target_test = train_test_split(
    attributes, target, test_size=0.3, random_state=42)


# 5. Train Decision Tree

model = DecisionTreeClassifier(criterion='entropy', random_state=42)

model.fit(attributes_train, target_train)


# 6. Predict and evaluate

target_pred = model.predict(attributes_test)

print("Accuracy:", round(accuracy_score(target_test, target_pred), 2))


# 7. Show rules

print("\nDecision Tree Rules:")
```

```python
rules = export_text(model, feature_names=attributes.columns)
print(rules)


# 8. Visualize tree
plt.figure(figsize=(8, 10))
plot_tree(model, filled=True, feature_names=attributes.columns, class_names=['No', 'Yes'])
plt.title("Decision Tree")
plt.show()


# 9. Predict new sample
new_sample = {
    'Outlook_Sunny': [1],
    'Outlook_Overcast': [0],
    'Outlook_Rain': [0],
    'Temperature_Cool': [0],
    'Temperature_Hot': [1],
    'Temperature_Mild': [0],
    'Humidity_High': [1],
    'Humidity_Normal': [0],
    'Wind_Strong': [0],
    'Wind_Weak': [1]
}
new_df = pd.DataFrame(new_sample)[attributes.columns]  # Keep same column order
new_pred = model.predict(new_df)
print("Prediction for new sample:", "Yes" if new_pred[0] == 1 else "No")
```