# Import necessary libraries

import numpy as np

import pandas as pd # Import Pandas for data loading

import matplotlib.pyplot as plt

from sklearn.tree import DecisionTreeClassifier, plot\_tree

from sklearn.model\_selection import train\_test\_split

from sklearn.metrics import accuracy\_score

# Load your dataset from a local file (e.g., CSV)

# Replace 'your\_dataset.csv' with the actual path to your dataset file

data = pd.read\_csv('Iris.csv')

# Assuming the target variable is in a column named 'target'

X = data.drop('target', axis=1)

y = data['target']

# Split the dataset into a training set and a testing set

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=42)

# Create a Decision Tree classifier

clf = DecisionTreeClassifier()

# Fit the classifier to the training data

clf.fit(X\_train, y\_train)

# Make predictions on the test data

y\_pred = clf.predict(X\_test)

# Calculate the accuracy of the model

accuracy = accuracy\_score(y\_test, y\_pred)

print(f"Accuracy: {accuracy:.2f}")

# Visualize and interpret the generated decision tree

plt.figure(figsize=(12, 8))

plot\_tree(clf, filled=True, feature\_names=X.columns, class\_names=y.unique().astype(str))

plt.title("Decision Tree Visualization")

plt.show()