15. Write the python program to implement Decision Tree

from sklearn import tree

import matplotlib.pyplot as plt

# Training data

# Features: [weight, texture] -> texture: smooth=1, bumpy=0

# Labels: 0 = Apple, 1 = Orange

features = [[140, 1], [130, 1], [150, 0], [170, 0]]

labels = [0, 0, 1, 1]

clf = tree.DecisionTreeClassifier()

clf = clf.fit(features, labels)

print("Prediction for [160, 0] (bumpy):", "Orange" if clf.predict([[160, 0]])[0] == 1 else "Apple")

# Visualize the tree

plt.figure(figsize=(8, 6))

tree.plot\_tree(clf, feature\_names=["Weight", "Texture"], class\_names=["Apple", "Orange"], filled=True)

plt.show()

OUTPUT:

