from sklearn.datasets import load\_breast\_cancer

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

from sklearn.ensemble import RandomForestClassifier

from sklearn.tree import DecisionTreeClassifier

from sklearn.metrics import accuracy\_score

import matplotlib.pyplot as plt

# Load data

X, y = load\_breast\_cancer(return\_X\_y=True)

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.3, random\_state=42)

# Train Random Forest

rf = RandomForestClassifier(random\_state=42)

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

rf\_acc = accuracy\_score(y\_test, rf.predict(X\_test))

# Train Decision Tree

dt = DecisionTreeClassifier(random\_state=42)

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

dt\_acc = accuracy\_score(y\_test, dt.predict(X\_test))

# Compare results

print(f"Random Forest Accuracy: {rf\_acc:.2%}")

print(f"Decision Tree Accuracy: {dt\_acc:.2%}")

# Plot comparison

plt.bar(['Random Forest', 'Decision Tree'], [rf\_acc, dt\_acc], color=['green', 'orange'])

plt.ylabel('Accuracy')

plt.title('Classifier Accuracy Comparison')

plt.ylim(0.8, 1.0)

plt.show()