```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.tree import DecisionTreeClassifier, plot_tree
from sklearn.metrics import accuracy_score, classification_report
```

```
iris = load_iris()
X = iris.data
y = iris.target

# Create DataFrame
df = pd.DataFrame(X, columns=iris.feature_names)
df['target'] = y
df.head()
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	target
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5.0	3.6	1.4	0.2	0

Next steps: Generate code with df | View recommended plots | New interactive sheet

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)
```

```
model = DecisionTreeClassifier(random_state=42)
model.fit(X_train, y_train)
```

```
▾     DecisionTreeClassifier  ⓘ ?
DecisionTreeClassifier(random_state=42)
```

```
y_pred = model.predict(X_test)

# Accuracy and report
print("Accuracy:", accuracy_score(y_test, y_pred))
print("\nClassification Report:\n", classification_report(y_test, y_pred, target_names=iris.target_names))
```

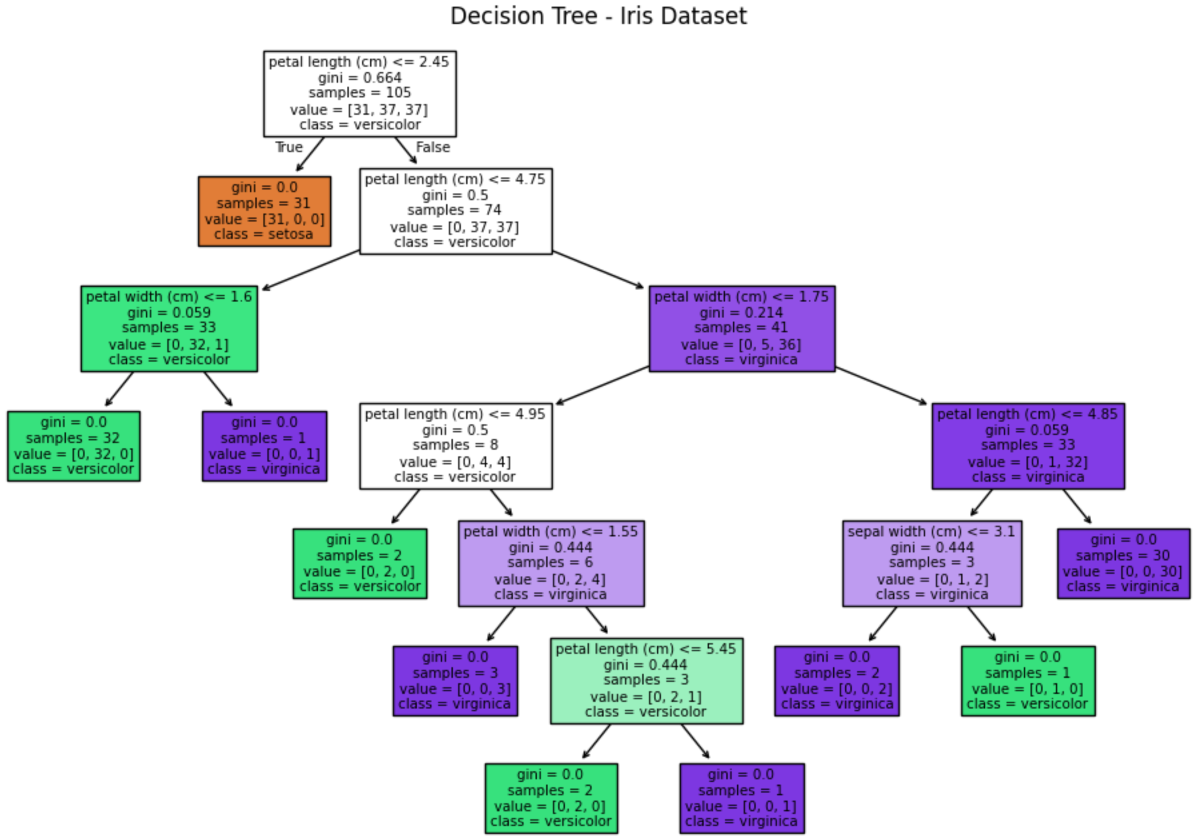
```
Accuracy: 1.0

Classification Report:
               precision    recall  f1-score   support

      setosa       1.00      1.00      1.00        19
  versicolor       1.00      1.00      1.00        13
   virginica       1.00      1.00      1.00        13

    accuracy                           1.00        45
   macro avg       1.00      1.00      1.00        45
weighted avg       1.00      1.00      1.00        45
```

```
plt.figure(figsize=(12, 8))
plot_tree(model, filled=True, feature_names=iris.feature_names, class_names=iris.target_names)
plt.title("Decision Tree - Iris Dataset")
plt.show()
```



Start coding or generate with AI.

The Decision Tree Classifier performed well on the Iris dataset. It achieved high accuracy, and the visualization showed how the model made decisions based on the features. This was a simple but powerful introduction to machine learning using decision trees.

Start coding or generate with AI.