

# Decision Tree

```
In [ ]: !pip install graphviz
```

Looking in indexes: <https://pypi.org/simple>, <https://us-python.pkg.dev/colab-wheels/public/simple/>

Requirement already satisfied: graphviz in /usr/local/lib/python3.9/dist-packages (0.20.1)

```
In [ ]: import matplotlib.pyplot as plt
from sklearn import datasets
from sklearn.metrics import confusion_matrix
from sklearn.metrics import accuracy_score
from sklearn.model_selection import train_test_split
from sklearn.tree import export_graphviz
import graphviz
from sklearn.tree import DecisionTreeClassifier
```

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In [ ]: iris = datasets.load_iris()
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In [ ]: X = iris.data
y = iris.target
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```
In [ ]: X_train, X_test, y_train, y_test = train_test_split(X, y, random_state = 0, test_s
```

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In [ ]: tree = DecisionTreeClassifier(max_depth = 5)
tree.fit(X_train, y_train)
tree_predictions = tree.predict(X_test)
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```
In [ ]: cm = confusion_matrix(y_test, tree_predictions)
print(cm)
```

```
[[11  0  0]
 [ 0 13  0]
 [ 0  0  6]]
```

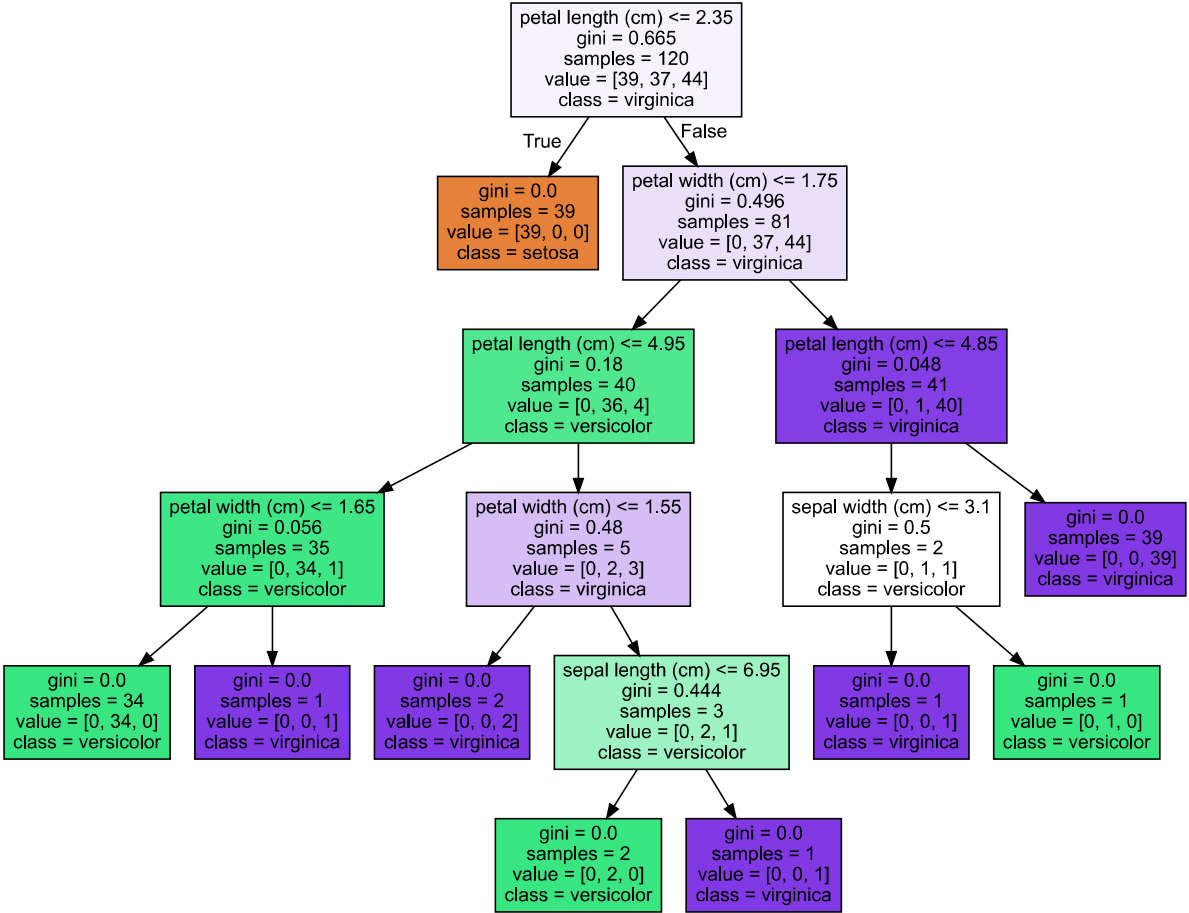
```
In [ ]: score = accuracy_score(tree_predictions, y_test)
print(score)
```

1.0

```
In [ ]: tree_formed = export_graphviz(tree, out_file = None, feature_names = iris.feature_n
graph = graphviz.Source(tree_formed, format="png")
```

```
In [ ]: graph
```

Out[ ]:



In [ ]: