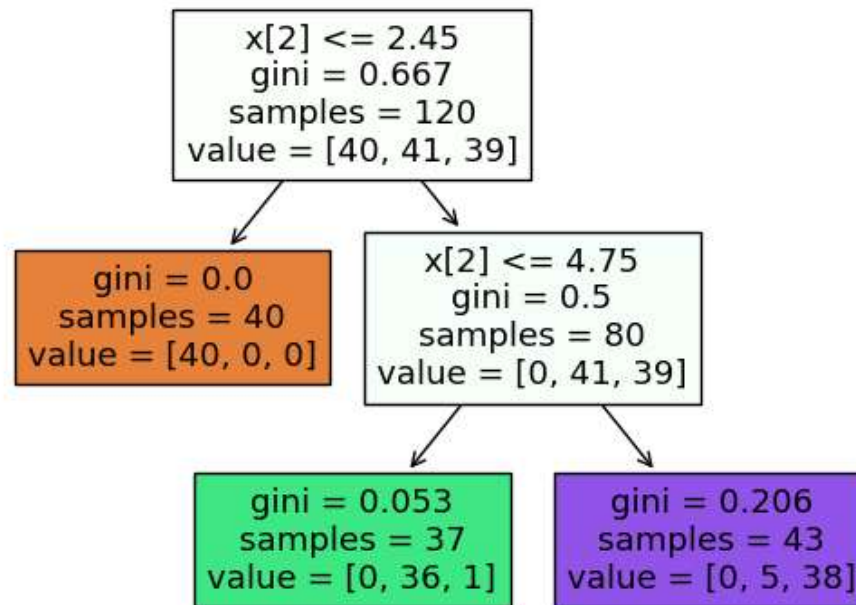



```
In [10]: import matplotlib.pyplot as plt
from sklearn import tree
plt.figure()
tree.plot_tree(model,filled = True)
```

```
Out[10]: [Text(0.4, 0.8333333333333334, 'x[2] <= 2.45\ngini = 0.667\nsamples = 120\nvalue = [40, 41, 39]'),
Text(0.2, 0.5, 'gini = 0.0\nsamples = 40\nvalue = [40, 0, 0]'),
Text(0.6, 0.5, 'x[2] <= 4.75\ngini = 0.5\nsamples = 80\nvalue = [0, 41, 39]'),
Text(0.4, 0.16666666666666666, 'gini = 0.053\nsamples = 37\nvalue = [0, 36, 1]'),
Text(0.8, 0.16666666666666666, 'gini = 0.206\nsamples = 43\nvalue = [0, 5, 38]')]
```



Regression

```
In [11]: from sklearn.tree import DecisionTreeRegressor
```

```
In [12]: model1 = DecisionTreeRegressor(ccp_alpha=0.01,max_depth=2, min_samples_split=3, min_samples_leaf=2)
model1.fit(X_train,y_train)
```

```
Out[12]: DecisionTreeRegressor
DecisionTreeRegressor(ccp_alpha=0.01, max_depth=2, min_samples_leaf=2,
min_samples_split=3)
```

```
In [13]: y_pred = model1.predict(X_test)
```

```
In [14]: from sklearn.metrics import r2_score
```

```
In [15]: r2_score(y_test,y_pred)
```

```
Out[15]: 0.9553798693111485
```

```
In [16]: import matplotlib.pyplot as plt
from sklearn import tree
plt.figure()
tree.plot_tree(model1,filled = True)
```

```
Out[16]: [Text(0.4, 0.8333333333333334, 'x[3] <= 0.8\nsquared_error = 0.658\nsamples = 120\nvalue = 0.992'),
Text(0.2, 0.5, 'squared_error = 0.0\nsamples = 40\nvalue = 0.0'),
Text(0.6, 0.5, 'x[2] <= 4.75\nsquared_error = 0.25\nsamples = 80\nvalue = 1.488'),
Text(0.4, 0.16666666666666666, 'squared_error = 0.026\nsamples = 37\nvalue = 1.027'),
Text(0.8, 0.16666666666666666, 'squared_error = 0.103\nsamples = 43\nvalue = 1.884')]
```

