```python
from matplotlib import pyplot as plt
from sklearn import datasets
from sklearn.tree import DecisionTreeClassifier
from sklearn import tree
```

```python
[2] iris = datasets.load_iris()
    X = iris.data
    y = iris.target
```

```python
[3] clf = DecisionTreeClassifier(random_state=1234)
    model = clf.fit(X, y)
```

```python
text_representation = tree.export_text(clf)
print(text_representation)
```

```
|--- feature_2 <= 2.45
|   |--- class: 0
|--- feature_2 >  2.45
|   |--- feature_3 <= 1.75
|   |   |--- feature_2 <= 4.95
|   |   |   |--- feature_3 <= 1.65
|   |   |   |   |--- class: 1
|   |   |   |--- feature_3 >  1.65
|   |   |   |   |--- class: 2
|   |   |--- feature_2 >  4.95
|   |   |   |--- feature_3 <= 1.55
|   |   |   |   |--- class: 2
|   |   |   |--- feature_3 >  1.55
|   |   |   |   |--- feature_0 <= 6.95
|   |   |   |   |   |--- class: 1
|   |   |   |   |--- feature_0 >  6.95
|   |   |   |   |   |--- class: 2
|   |--- feature_3 >  1.75
|   |   |--- feature_2 <= 4.85
|   |   |   |--- feature_1 <= 3.10
|   |   |   |   |--- class: 2
|   |   |   |--- feature_1 >  3.10
|   |   |   |   |--- class: 1
|   |   |--- feature_2 >  4.85
|   |   |   |--- class: 2
```

```
[5]   with open("decistion_tree.log", "w") as fout:
          fout.write(text_representation)
```

```
[6]   fig = plt.figure(figsize=(25,20))
      _ = tree.plot_tree(clf,
                           feature_names=iris.feature_names,
                           class_names=iris.target_names,
                           filled=True)
```

```
      fig.savefig("decistion_tree.png")
```

```
[8]   #Cach 2
      import graphviz
      # DOT data
      dot_data = tree.export_graphviz(clf, out_file=None,
                                       feature_names=iris.feature_names,
                                       class_names=iris.target_names,
                                       filled=True)

      # Draw graph
      graph = graphviz.Source(dot_data, format="png")
      graph
```

```python
#regression
from sklearn import datasets
from sklearn.tree import DecisionTreeRegressor
from sklearn import tree
```

```python
[13] import pandas as pd
     import numpy as np

     data_url = "http://lib.stat.cmu.edu/datasets/boston"
     raw_df = pd.read_csv(data_url, sep="\s+", skiprows=22, header=None)
     X= np.hstack([raw_df.values[::2, :], raw_df.values[1::2, :2]])
     y= raw_df.values[1::2, 2]
```

```python
[14] # Fit the regressor, set max_depth = 3
     regr = DecisionTreeRegressor(max_depth=3, random_state=1234)
     model = regr.fit(X, y)
```

```python
[15] text_representation = tree.export_text(regr)
     print(text_representation)
```

```python
dot_data = tree.export_graphviz(regr, out_file=None, feature_names=boston.feature_names,
                                filled=True)
graphviz.Source(dot_data, format="png")
```

REGRESSION