```
import pandas as pd
import numpy as np
from sklearn.tree import DecisionTreeClassifier, export_graphviz
from sklearn.model_selection import train_test_split
from sklearn import metrics
import pydotplus
from IPython.display import Image
```

Załadowanie danych

```
data=pd.read_csv('tennis.csv')
data.head()
```

	Day	Outlook	Temperature	Humidity	Wind	PlayTennis
0	D1	Sunny	Hot	High	Weak	No
1	D2	Sunny	Hot	High	Strong	No
2	D3	Overcast	Hot	High	Weak	Yes
3	D4	Rain	Mild	High	Weak	Yes
4	D5	Rain	Cool	Normal	Weak	Yes

Dane z tabeli (bez atrybutu **PlayTennis**) zapisujemy w kodowaniu **one-hot**

```
one_hot_data = pd.get_dummies(data[ ['Outlook','Temperature','Humidity','Wind'] ])
one_hot_data
```

Obiekt **DecisionTreeClassifier**

```
clf = DecisionTreeClassifier()
clf_train = clf.fit(one_hot_data, data['PlayTennis'])
```

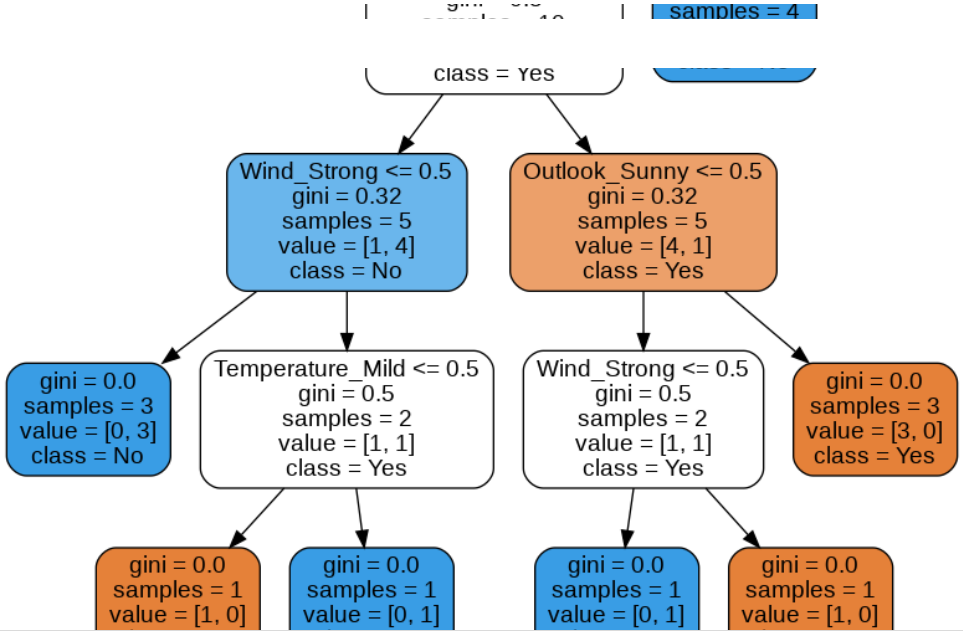
Rysujemy drzewo decyzyjne

```
#print(export_graphviz(clf_train, None))

#Create Dot Data
dot_data = export_graphviz(clf_train, out_file=None, feature_names=list(one_hot_data.columns.values),
                           class_names=['Yes', 'No'], rounded=True, filled=True)
graph = pydotplus.graph_from_dot_data(dot_data)

# Show graph
Image(graph.create_png())
```

Testujemy model dla samochodu o parametrach: **Sunny, Cool, High, Strong** (zakodowany jako one-hot)

```
prediction = clf_train.predict([[0,0,1,1,0,0,1,0,1,0]])
prediction
```

```
/usr/local/lib/python3.8/dist-packages/sklearn/base.py:450: UserWarning: X does not have valid feature names, but DecisionTreeClassifier was fitted with feature names
  warnings.warn(
array(['No'], dtype=object)
```



aj możesz anulować umowy

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