```python
import pandas
from sklearn import tree
import pydotplus
from sklearn.tree import DecisionTreeClassifier
import matplotlib.pyplot as plt
import matplotlib.image as pltimg

df = pandas.read_csv("Sample100.csv")

print(df)
```

	Serial Number	Company Name	Employee Markme	Description	Leave
0	1	110	0	Mark	1
1	2	220	1	Mark	3
2	3	330	0	Mark	0
3	4	440	2	4TH HARPER COLLINS	2
4	5	550	0	4TH HARPER COLLINS	3
5	6	660	0	4TH HARPER COLLINS	0
6	7	770	0	4TH HARPER COLLINS	2
7	8	880	0	4TH HARPER COLLINS	0
8	9	990	0	A & A PUBLISHER	1
9	10	1100	4	A & A PUBLISHER	3
10	11	1210	0	A & A PUBLISHER	0
11	12	1320	0	A & A PUBLISHER	0
12	13	1430	1	4TH HARPER COLLINS	1
13	14	1540	0	Mark	2
14	15	1650	0	A & A PUBLISHER	2

	Performance
0	good
1	bad
2	good
3	average
4	bad
5	good

```
6        average
7           good
8           good
9            bad
10          good
11          good
12          good
13       average
14       average
```

```python
d = {'Mark': 0, '4TH HARPER COLLINS': 1, 'A & A PUBLISHER': 2}
df['Description'] = df['Description'].map(d)
d = {'good': 1, 'average': 2, 'bad': 3}
df['Performance'] = df['Performance'].map(d)

print(df)
```

	Serial Number	Company Name	Employee Markme	Description	Leave
0	1	110	0	0	1
1	2	220	1	0	3
2	3	330	0	0	0
3	4	440	2	1	2
4	5	550	0	1	3
5	6	660	0	1	0
6	7	770	0	1	2
7	8	880	0	1	0
8	9	990	0	2	1
9	10	1100	4	2	3
10	11	1210	0	2	0
11	12	1320	0	2	0
12	13	1430	1	1	1
13	14	1540	0	0	2
14	15	1650	0	2	2

```
     Performance
0              1
1              3
2              1
3              2
4              3
5              1
6              2
7              1
8              1
9              3
10             1
11             1
12             1
13             2
14             2
```

```python
features = ['Serial Number', 'Company Name', 'Employee Markme',
'Description', 'Leave']

X = df[features]
Y = df['Performance']

print(X)
print(Y)
```

```
     Serial Number  Company Name  Employee Markme  Description  Leave
0                1           110                0            0      1
1                2           220                1            0      3
2                3           330                0            0      0
3                4           440                2            1      2
4                5           550                0            1      3
5                6           660                0            1      0
6                7           770                0            1      2
7                8           880                0            1      0
8                9           990                0            2      1
9               10          1100                4            2      3
10              11          1210                0            2      0
11              12          1320                0            2      0
12              13          1430                1            1      1
13              14          1540                0            0      2
14              15          1650                0            2      2
0      1
1      3
2      1
3      2
4      3
5      1
6      2
7      1
```

```
8      1
9      3
10     1
11     1
12     1
13     2
14     2
Name: Performance, dtype: int64

dtree = DecisionTreeClassifier()
dtree = dtree.fit(X, Y)
data = tree.export_graphviz(dtree, out_file=None,
feature_names=features)
graph = pydotplus.graph_from_dot_data(data)
graph.write_png('mydecisiontree.png')

True

img=pltimg.imread('mydecisiontree.png')
imgplot = plt.imshow(img)
plt.show()
```