Decision Tree Visualization Macro

1. Macro Name: DecisionTree

2.Input: Dot. File output from [pydotplus] module
(#Warning: This tool only applies to balanced binary tree)

3.Output: DecisionTree with Lift Rate on Excel

Simple Code of pydotplus module

```
# Create DOT data
tree.export_graphviz(mod, out_file='tree.dot',
                                feature_names=data_all.columns[:-1],
                                class_names=None,
                                impurity=True,
                                filled=False,
                                proportion=None)

# Convert to png
graph = pydotplus.graphviz.graph_from_dot_file('tree.dot')

# Show graph
graph.write_png('tree.png')
```

2. Simple Use Case

Input: tree.dot

```
digraph Tree {

node [shape=box] ;

0 [label="スイーツ・お菓子 <= 2311.5¥ngini = 0.031¥nsamples = 199864¥nvalue = [196719, 3145]"] ;

1 [label="家電 <= 97.5¥ngini = 0.027¥nsamples = 178648¥nvalue = [176170, 2478]"] ;

0 -> 1 [labeldistance=2.5, labelangle=45, headlabel="True"] ;

2 [label="reg_gender_cd <= 0.5¥ngini = 0.022¥nsamples = 145100¥nvalue = [143451, 1649]"] ;

1 -> 2 ;

3 [label="gini = 0.0¥nsamples = 23106¥nvalue = [23104, 2]"] ;

2 -> 3 ;

4 [label="gini = 0.027¥nsamples = 121994¥nvalue = [120347, 1647]"] ;

2 -> 4 ;

5 [label="パソコン・周辺機器 <= 95.0¥ngini = 0.048¥nsamples = 33548¥nvalue = [32719, 829]"] ;

1 -> 5 ;

6 [label="gini = 0.037¥nsamples = 26666¥nvalue = [26166, 500]"] ;

5 -> 6 ;

.....
```

Sample output:

					Proportion	Lift Rate	Population
nsamples = 199864,nvalue = 3145,yprob = 1.57%	スイーツ・お菓子 <= 2311.5,nsamples = 178648,nvalue = 2478,yprob = 1.39%	家電 <= 97.5,nsamples = 145100,nvalue = 1649,yprob = 1.14%	reg_gender_cd <= 0.5,samples = 23106,nvalue = 2,yprob = 0.01%	samples = 23106,nvalue = 2	0.01%	0.01	2
			reg_gender_cd >= 0.5,samples = 121994,nvalue = 1647,yprob = 1.35%	samples = 121994,nvalue = 1647	1.35%	0.86	1647
		家電 >= 97.5,nsamples = 33548,nvalue = 829,yprob = 2.47%	パソコン・周辺機器 <= 95.0,samples = 26666,nvalue = 500,yprob = 1.88%	samples = 26666,nvalue = 500	1.88%	1.2	500
			パソコン・周辺機器 >= 95.0,samples = 6882,nvalue = 329,yprob = 4.78%	samples = 6882,nvalue = 329	4.78%	3.04	329
	スイーツ・お菓子 >= 2311.5,nsamples = 21216,nvalue = 667,yprob = 3.14%	日用品雑貨・文房具・手芸 <= 5039.0,nsamples = 14212,nvalue = 378,yprob = 2.66%	本・雑誌・コミック <= 539.5,samples = 10590,nvalue = 203,yprob = 1.92%	samples = 10590,nvalue = 203	1.92%	1.22	203
			本・雑誌・コミック >= 539.5,samples = 3622,nvalue = 175,yprob = 4.83%	samples = 3622,nvalue = 175	4.83%	3.08	175
		日用品雑貨・文房具・手芸 >= 5039.0,nsamples = 7004,nvalue = 289,yprob = 4.13%	ダイエット・健康 <= 5060.0,samples = 3823,nvalue = 121,yprob = 3.17%	samples = 3823,nvalue = 121	3.17%	2.02	121
			ダイエット・健康 >= 5060.0,samples = 3181,nvalue = 168,yprob = 5.28%	samples = 3181,nvalue = 168	5.28%	3.36	168