LP3 Assignment 2

Decision Tree Classifier

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In [23]:

```
import pandas as pd
import numpy as np
```

In [24]:

```
#reading Dataset
dataset=pd.read_csv("dataset.csv")
```

In [25]:

```
dataset.head(5)
```

Out[25]:

	ID	Age	Income	Gender	Marital Status	Buys
0	1	<21	High	Male	Single	No
1	2	<21	High	Male	Married	No
2	3	21-35	High	Male	Single	Yes
3	4	>35	Medium	Male	Single	Yes
4	5	>35	Low	Female	Single	Yes

In [26]:

```
X=dataset.iloc[:,:-1]
y=dataset.iloc[:,5]
```

In [27]:

```
#Perform Label encoding
from sklearn.preprocessing import LabelEncoder
le=LabelEncoder()
```

In [28]:

```
X=X.apply(le.fit_transform)
print("X",X)
```

```
X     ID  Age  Income  Gender  Marital Status
0     0    1       0       1               1
1     1    1       0       1               0
2     2    0       0       1               1
3     3    2       2       1               1
4     4    2       1       0               1
5     5    2       1       0               0
6     6    0       1       0               0
7     7    1       2       1               1
8     8    1       1       0               0
9     9    2       2       0               1
10   10    1       2       0               0
11   11    0       2       1               0
12   12    0       0       0               1
13   13    2       2       1               0
```

In [29]:

```
from sklearn.tree import DecisionTreeClassifier
regressor=DecisionTreeClassifier()
regressor.fit(X.iloc[:,1:5],y)
```

Out[29]:

```
DecisionTreeClassifier()
```

In [31]:

```
#Predict value for the given Expression
X_in=np.array([0,0,1,1])
y_pred=regressor.predict([[0,0,1,1]])
print("Prediction:", y_pred)
```

```
Prediction: ['Yes']
```

In [ ]:

```
from six import StringIO
from IPython.display import Image
from sklearn.tree import export_graphviz
import pydotplus
```

In [ ]:

```
dot_data=StringIO()
```

In [ ]:

```
export_graphviz(regressor,out_file=dot_data,filled=True,rounded=True,special_characters=Tru
```

In [ ]:

```
graph=pydotplus.graph_from_dot_data(dot_data.getvalue())
```

In [ ]:

```
graph.write_png('d_tree.png')
```

In [ ]:

```
from IPython.display import Image
Image(filename='d_tree.png')
```

In [ ]:

```

```