

```
In [30]: import numpy as np
import pandas as pd
from sklearn.preprocessing import LabelEncoder
from sklearn.metrics import confusion_matrix, classification_report
import seaborn as sn
import matplotlib.pyplot as plt
```

```
In [16]: dataset = pd.read_csv("decision_Tree_dataset.csv")

labelencoder_x = LabelEncoder()
dataset = dataset.apply(LabelEncoder().fit_transform)
print(dataset)
```

	AGE	INCOME	Gender	Marital	Buys
0	1	0	1	1	0
1	1	0	1	0	0
2	0	0	1	1	1
3	2	2	1	1	1
4	2	1	0	1	1
5	2	1	0	0	0
6	0	1	0	0	1
7	1	2	1	1	0
8	1	1	0	0	1
9	2	2	0	1	1
10	1	2	0	0	1
11	0	2	1	0	1
12	0	0	0	1	1
13	2	2	1	0	0

```
In [11]: x = dataset.iloc[:, :-1].values
y = dataset['Buys'].values
print(x)
print(y)
```

```
[[1 0 1 1]
 [1 0 1 0]
 [0 0 1 1]
 [2 2 1 1]
 [2 1 0 1]
 [2 1 0 0]
 [0 1 0 0]
 [1 2 1 1]
 [1 1 0 0]
 [2 2 0 1]
 [1 2 0 0]
 [0 2 1 0]
 [0 0 0 1]
 [2 2 1 0]]
[0 0 1 1 1 0 1 0 1 1 1 1 1 0]
```

```
In [17]: # applying decision tree classifier
from sklearn.tree import DecisionTreeClassifier as DTC

c = DTC()
c = c.fit(x, y)
```

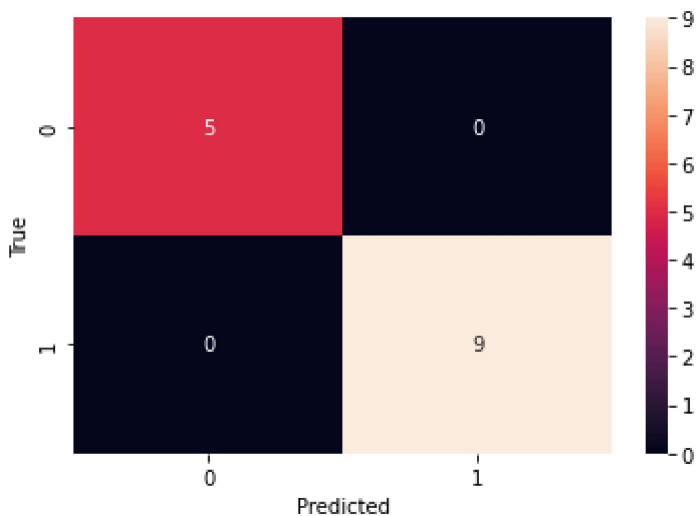
```
#predicting
print(c.predict([[2, 0, 1, 0],[1,0,0,0]]))
print(c.score(x,y))

#output
# array([0, 1]) --> 0=No , 1=Yes
```

```
[0 1]
1.0
```

```
In [32]: cm= confusion_matrix(y, c.predict(x))
sn.heatmap(cm, annot=True)
plt.xlabel("Predicted")
plt.ylabel("True")
```

```
Out[32]: Text(33.0, 0.5, 'True')
```



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In [ ]:
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