In [ ]:
```
import pandas as pd
import seaborn as sns
```

In [ ]:
```
df=pd.read_csv("Admission_Predict.csv")
```

In [ ]:
```
df.columns
```

Out[ ]:
```
Index(['Serial No.', 'GRE Score', 'TOEFL Score', 'University Rating', 'SOP',
       'LOR ', 'CGPA', 'Research', 'Chance of Admit '],
      dtype='object')
```

In [ ]:
```
df.shape
```

Out[ ]:
```
(400, 9)
```

In [ ]:
```
df.head()
```

Out[ ]:

	Serial No.	GRE Score	TOEFL Score	University Rating	SOP	LOR	CGPA	Research	Chance of Admit
0	1	337	118	4	4.5	4.5	9.65	1	0.92
1	2	324	107	4	4.0	4.5	8.87	1	0.76
2	3	316	104	3	3.0	3.5	8.00	1	0.72
3	4	322	110	3	3.5	2.5	8.67	1	0.80
4	5	314	103	2	2.0	3.0	8.21	0	0.65

In [ ]:
```
from sklearn.preprocessing import Binarizer
bi= Binarizer(threshold=0.75)
df['Chance of Admit ']=bi.fit_transform(df[['Chance of Admit ']])
```

In [ ]:
```
df.head()
```

Out[ ]:

	Serial No.	GRE Score	TOEFL Score	University Rating	SOP	LOR	CGPA	Research	Chance of Admit
0	1	337	118	4	4.5	4.5	9.65	1	1.0
1	2	324	107	4	4.0	4.5	8.87	1	1.0
2	3	316	104	3	3.0	3.5	8.00	1	0.0
3	4	322	110	3	3.5	2.5	8.67	1	1.0
4	5	314	103	2	2.0	3.0	8.21	0	0.0

In [ ]:
```
x=df.drop('Chance of Admit ',axis=1)
y=df['Chance of Admit ']
```

In [ ]:
```
x
```

Out[ ]:

	Serial No.	GRE Score	TOEFL Score	University Rating	SOP	LOR	CGPA	Research
0	1	337	118	4	4.5	4.5	9.65	1
1	2	324	107	4	4.0	4.5	8.87	1
2	3	316	104	3	3.0	3.5	8.00	1
3	4	322	110	3	3.5	2.5	8.67	1
4	5	314	103	2	2.0	3.0	8.21	0
...	...	...	...	...	...	...	...	...
395	396	324	110	3	3.5	3.5	9.04	1
396	397	325	107	3	3.0	3.5	9.11	1
397	398	330	116	4	5.0	4.5	9.45	1
398	399	312	103	3	3.5	4.0	8.78	0
399	400	333	117	4	5.0	4.0	9.66	1

400 rows × 8 columns

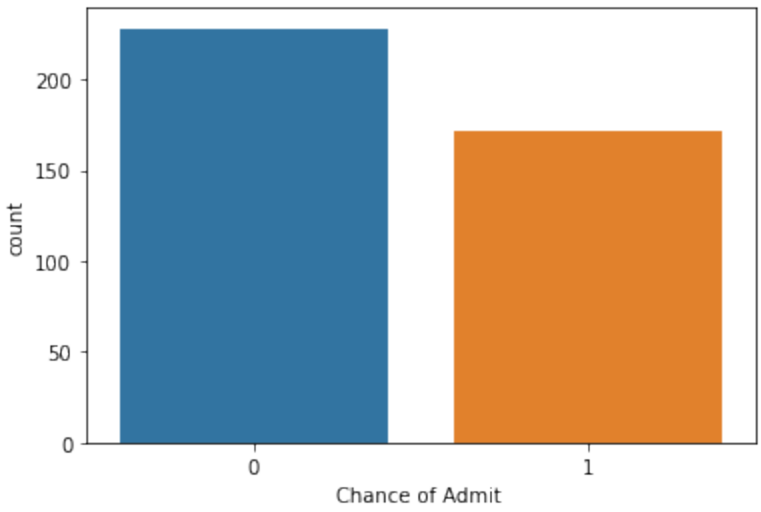
In [ ]:
```
y
```

Out[ ]:
```
0      1.0
1      1.0
2      0.0
3      1.0
4      0.0
      ...
395    1.0
396    1.0
397    1.0
398    0.0
399    1.0
Name: Chance of Admit , Length: 400, dtype: float64
```

In [ ]:
```
y=y.astype('int')
```

In [ ]:
```
sns.countplot(x = y)
```

Out[ ]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x7f8b7413f290>
```



In [ ]:
```
y.value_counts()
```

Out[ ]:
```
0    228
1    172
Name: Chance of Admit , dtype: int64
```

In [ ]:
```
#Cross Validation
from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test=train_test_split(x,y,random_state=0,test_size=0.
```

In [ ]:
```
x_train.shape
```

Out[ ]:
```
(300, 8)
```

In [ ]:
```
x_test.shape
```

Out[ ]:
```
(100, 8)
```

In [ ]:
```
x_test
```

Out[ ]:

	Serial No.	GRE Score	TOEFL Score	University Rating	SOP	LOR	CGPA	Research
132	133	309	105	5	3.5	3.5	8.56	0
309	310	308	110	4	3.5	3.0	8.60	0
341	342	326	110	3	3.5	3.5	8.76	1
196	197	306	105	2	3.0	2.5	8.26	0
246	247	316	105	3	3.0	3.5	8.73	0
...	...	...	...	...	...	...	...	...
146	147	315	105	3	2.0	2.5	8.48	0
135	136	314	109	4	3.5	4.0	8.77	1
390	391	314	102	2	2.0	2.5	8.24	0
264	265	325	110	2	3.0	2.5	8.76	1
364	365	313	102	3	3.5	4.0	8.90	1

100 rows × 8 columns

In [ ]:
```
from sklearn.tree import DecisionTreeClassifier
classifier=DecisionTreeClassifier(random_state=0)
```

In [ ]:
```
classifier.fit(x_train,y_train)
```

Out[ ]:
```
DecisionTreeClassifier(random_state=0)
```

In [ ]:
```
y_pred=classifier.predict(x_test)
```

In [ ]:
```
result=pd.DataFrame({'actual': y_test,'predicted': y_pred})
```

In [ ]:
```
result
```

Out[ ]:

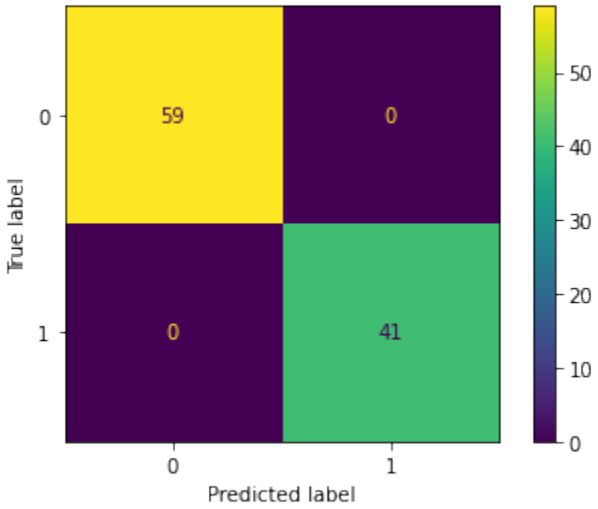
	actual	predicted
132	0	0
309	0	0
341	1	1
196	0	0
246	0	1
...	...	...
146	0	0
135	1	1
390	0	0
264	0	0
364	1	1

100 rows × 2 columns

In [ ]:
```
from sklearn.metrics import ConfusionMatrixDisplay,accuracy_score
from sklearn.metrics import classification_report
```

In [ ]:
```
ConfusionMatrixDisplay.from_predictions(y_test,y_test)
```

Out[ ]:
```
<sklearn.metrics._plot.confusion_matrix.ConfusionMatrixDisplay at 0x7f8b741df
390>
```



In [ ]:
```
accuracy_score(y_test,y_pred)
```

Out[ ]:
```
0.9
```

In [ ]:
```
print(classification_report(y_test,y_pred))
```

	precision	recall	f1-score	support
0	0.92	0.92	0.92	59
1	0.88	0.88	0.88	41
accuracy			0.90	100
macro avg	0.90	0.90	0.90	100
weighted avg	0.90	0.90	0.90	100