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Run | Code

In [1]:
```
import numpy as np # linear algebra
```

In [2]:
```
import pandas as pd
```

In [3]:
```
import matplotlib.pylot as plt
```

```
---------------------------------------------------------------------------
ModuleNotFoundError                       Traceback (most recent call last)
Input In [3], in <cell line: 1>()
----> 1 import matplotlib.pylot as plt

ModuleNotFoundError: No module named 'matplotlib.pylot'
```

In [4]:
```
import matplotlib.pyplot as plt
```

In [5]:
```
df = pd.read_csv("Admission_Predict_Ver1.1.csv")
```

In [6]:
```
df.isnull().sum()
```

Out[6]:
```
Serial No.          0
GRE Score           0
TOEFL Score         0
University Rating   0
SOP                 0
LOR                 0
CGPA                0
Research            0
Chance of Admit     0
dtype: int64
```

In [20]:
```
df.head()
```

Out[20]:

	Serial No.	GRE Score	TOEFL Score	University Rating	SOP	LOR	CGPA	Research	Chance of Admit

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Run | Code

In [20]:
```
df.head()
```

Out[20]:

	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	0.0
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 [10]:
```
df.loc[df['Chance of Admit '] < 0.8, 'Chance of Admit '] = 0
df.loc[df['Chance of Admit '] >= 0.8, 'Chance of Admit '] = 1
```

In [11]:
```
X = df.drop(['Chance of Admit ', 'Serial No.'], axis=1)
Y = df['Chance of Admit ']
```

In [21]:
```
df.head()
```

Out[21]:

	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	0.0
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 [12]:
```
from sklearn.model_selection import train_test_split
X_train,X_test,Y_train,Y_test = train_test_split(X,Y,test_size=0.25,random_state=123)
```

In [13]:
```
from sklearn.tree import DecisionTreeClassifier
from sklearn import metrics
```

In [14]:
```
clf = DecisionTreeClassifier()
```

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In [14]:
```
clf = DecisionTreeClassifier()
```

In [15]:
```
clf = clf.fit(X_train, Y_train)
```

In [16]:
```
y_pred = clf.predict(X_test)
```

In [17]:
```
print("Confusion matrix:\n")
print(metrics.confusion_matrix(Y_test, y_pred))
```

```
Confusion matrix:

[[78  4]
 [ 3 40]]
```

In [18]:
```
print("1. Accuracy Score:", metrics.accuracy_score(Y_test, y_pred))
print("2. Precision Score:", metrics.precision_score(Y_test, y_pred))
print("3. Recall Score:", metrics.recall_score(Y_test, y_pred))
print("4. f1 Score:", metrics.f1_score(Y_test, y_pred))
```

```
1. Accuracy Score: 0.944
2. Precision Score: 0.9090909090909091
3. Recall Score: 0.9302325581395349
4. f1 Score: 0.9195402298850575
```

In [19]:
```
df.head()
```

Out[19]:

	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	0.0
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 [22]:
```
X
```

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In [22]:
```
X
```

Out[22]:

	GRE Score	TOEFL Score	University Rating	SOP	LOR	CGPA	Research
0	337	118	4	4.5	4.5	9.65	1
1	324	107	4	4.0	4.5	8.87	1
2	316	104	3	3.0	3.5	8.00	1
3	322	110	3	3.5	2.5	8.67	1
4	314	103	2	2.0	3.0	8.21	0
...	...	...	...	...	...	...	...
495	332	108	5	4.5	4.0	9.02	1
496	337	117	5	5.0	5.0	9.87	1
497	330	120	5	4.5	5.0	9.56	1
498	312	103	4	4.0	5.0	8.43	0
499	327	113	4	4.5	4.5	9.04	0

500 rows × 7 columns

In [23]:
```
X_train
```

Out[23]:

	GRE Score	TOEFL Score	University Rating	SOP	LOR	CGPA	Research
455	305	102	2	1.5	2.5	7.64	0
384	340	113	4	5.0	5.0	9.74	1
293	312	98	1	3.5	3.0	8.18	1
421	321	112	3	3.0	4.5	8.95	1
374	315	105	2	2.0	2.5	7.65	0
...	...	...	...	...	...	...	...
98	332	119	4	5.0	4.5	9.24	1
476	304	104	3	2.5	2.0	8.12	0

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Run Code

Out[23]:

	GRE Score	TOEFL Score	University Rating	SOP	LOR	CGPA	Research
455	305	102	2	1.5	2.5	7.64	0
384	340	113	4	5.0	5.0	9.74	1
293	312	98	1	3.5	3.0	8.18	1
421	321	112	3	3.0	4.5	8.95	1
374	315	105	2	2.0	2.5	7.65	0
...	...	...	...	...	...	...	...
98	332	119	4	5.0	4.5	9.24	1
476	304	104	3	2.5	2.0	8.12	0
322	314	107	2	2.5	4.0	8.27	0
382	324	110	4	4.5	4.0	9.15	1
365	330	114	4	4.5	3.0	9.17	1

375 rows × 7 columns

In [24]:
```
X_test
```

Out[24]:

	GRE Score	TOEFL Score	University Rating	SOP	LOR	CGPA	Research
229	324	111	4	3.0	3.0	9.01	1
337	332	118	5	5.0	5.0	9.47	1
327	295	101	2	2.5	2.0	7.86	0
416	315	104	3	4.0	2.5	8.10	0
306	323	110	3	4.0	3.5	9.10	1
...	...	...	...	...	...	...	...
191	323	110	5	4.0	5.0	8.98	1
267	314	107	3	3.0	3.5	8.17	1
20	312	107	3	3.0	2.0	7.90	1
120	335	117	5	5.0	5.0	9.56	1

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Run Code

Out[24]:

	GRE Score	TOEFL Score	University Rating	SOP	LOR	CGPA	Research
229	324	111	4	3.0	3.0	9.01	1
337	332	118	5	5.0	5.0	9.47	1
327	295	101	2	2.5	2.0	7.86	0
416	315	104	3	4.0	2.5	8.10	0
306	323	110	3	4.0	3.5	9.10	1
...	...	...	...	...	...	...	...
191	323	110	5	4.0	5.0	8.98	1
267	314	107	3	3.0	3.5	8.17	1
20	312	107	3	3.0	2.0	7.90	1
120	335	117	5	5.0	5.0	9.56	1
226	306	110	2	3.5	4.0	8.45	0

125 rows × 7 columns

In [25]:
```
Y
```

Out[25]:
```
0      1.0
1      0.0
2      0.0
3      1.0
4      0.0
      ...
495    1.0
496    1.0
497    1.0
498    0.0
499    1.0
Name: Chance of Admit , Length: 500, dtype: float64
```

In [26]:
```
Y_train
```

Out[26]:
```
455    0.0
384    1.0
```

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Run Code

In [26]:
```
Y_train
```

Out[26]:
```
455    0.0
384    1.0
293    0.0
421    0.0
374    0.0
      ...
98     1.0
476    0.0
322    0.0
382    1.0
365    1.0
Name: Chance of Admit , Length: 375, dtype: float64
```

In [27]:
```
Y_test
```

Out[27]:
```
229    1.0
337    1.0
327    0.0
416    0.0
306    0.0
      ...
191    1.0
267    0.0
20     0.0
120    1.0
226    0.0
Name: Chance of Admit , Length: 125, dtype: float64
```

In [28]:
```
X_train, Y_train
```

Out[28]:

	GRE Score	TOEFL Score	University Rating	SOP	LOR	CGPA	Research
455	305	102	2	1.5	2.5	7.64	0
384	340	113	4	5.0	5.0	9.74	1
293	312	98	1	3.5	3.0	8.18	1
421	321	112	3	3.0	4.5	8.95	1
374	315	105	2	2.0	2.5	7.65	0
..	...	...	...	...	...	...	...

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Run Code

```
226    0.0
Name: Chance of Admit , Length: 125, dtype: float64
```

In [28]:
```
X_train, Y_train
```

Out[28]:
```
(     GRE Score  TOEFL Score  University Rating  SOP  LOR   CGPA  Research
 455        305          102                  2  1.5   2.5  7.64         0
 384        340          113                  4  5.0   5.0  9.74         1
 293        312           98                  1  3.5   3.0  8.18         1
 421        321          112                  3  3.0   4.5  8.95         1
 374        315          105                  2  2.0   2.5  7.65         0
 ..         ...          ...                ...  ...   ...   ...       ...
 98         332          119                  4  5.0   4.5  9.24         1
 476        304          104                  3  2.5   2.0  8.12         0
 322        314          107                  2  2.5   4.0  8.27         0
 382        324          110                  4  4.5   4.0  9.15         1
 365        330          114                  4  4.5   3.0  9.17         1

 [375 rows x 7 columns],
 455    0.0
 384    1.0
 293    0.0
 421    0.0
 374    0.0
       ...
 98     1.0
 476    0.0
 322    0.0
 382    1.0
 365    1.0
 Name: Chance of Admit , Length: 375, dtype: float64)
```

In [ ]: