Step-1 Impoerts Labirary

```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

Step-2

```
df=sns.load_dataset("iris")
df.head()
```

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa

Selecting input and output

+ Code + Text

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

```

Step-4 Model Creation

```
from sklearn.naive_bayes import GaussianNB
model=GaussianNB().fit(X,y)
model
```

```
/usr/local/lib/python3.10/dist-packages/sklearn/utils/validation.py:1143: DataConversionWarning: A colu
  y = column_or_1d(y, warn=True)
▾ GaussianNB
GaussianNB()
```

Training Test split

```
# train test split and checking accuracy
from sklearn.model_selection import train_test_split
X_train,X_test,y_train,y_test=train_test_split(X,y, test_size=0.3,random_state=0)
```

making Predecation on base of testing data

```
#training the model on training data
from sklearn.naive_bayes import GaussianNB
model=GaussianNB().fit(X_train,y_train)
model
```

```
/usr/local/lib/python3.10/dist-packages/sklearn/utils/validation.py:1143: DataConversior
  y = column_or_1d(y, warn=True)
▾ GaussianNB
GaussianNB()
```

```
#making prediction on testing data
y_pred=model.predict(X_test)
y_pred
```

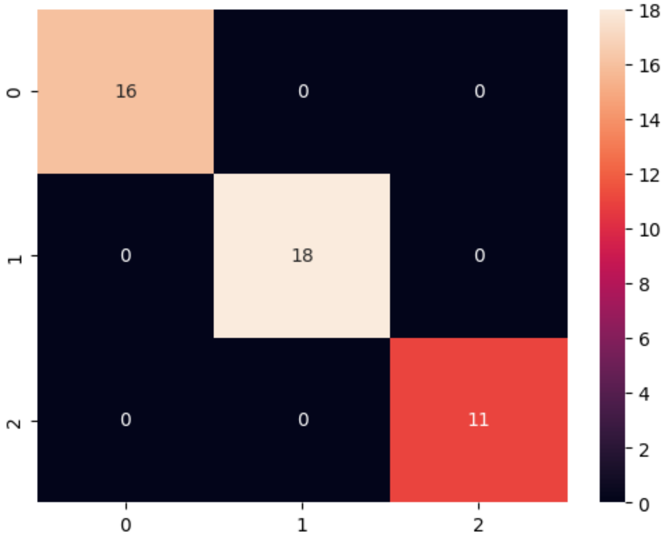
```
array(['virginica', 'versicolor', 'setosa', 'virginica', 'setosa',
       'virginica', 'setosa', 'versicolor', 'versicolor', 'versicolor',
       'virginica', 'versicolor', 'versicolor', 'versicolor',
       'versicolor', 'setosa', 'versicolor', 'versicolor', 'setosa',
       'setosa', 'virginica', 'versicolor', 'setosa', 'setosa',
       'virginica', 'setosa', 'setosa', 'versicolor', 'versicolor',
       'setosa', 'virginica', 'versicolor', 'setosa', 'virginica',
       'virginica', 'versicolor', 'setosa', 'versicolor', 'versicolor',
       'versicolor', 'virginica', 'setosa', 'virginica', 'setosa',
       'setosa'], dtype='<U10')
```

```
from sklearn.metrics import accuracy_score
score=accuracy_score(y_test,y_pred)
print("Naive bayes model accuracy is",score*100)
```

```
Naive bayes model accuracy is 100.0
```

```
from sklearn.metrics import confusion_matrix
cm=confusion_matrix(y_test,y_pred)
sns.heatmap(cm,annot=True)
```

```
<Axes: >
```


16
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