IMPORT LIBRARIES

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

LOAD DATA SET

```
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 OUTOUT

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

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:
  y = column_or_1d(y, warn=True)
```

GaussianNB()

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=0.2,random_state=0)
```

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:
  y = column_or_1d(y, warn=True)
```

GaussianNB()

```
y_pred = model.predict(X_test)
y_pred
```

```
array(['virginica', 'versicolor', 'setosa', 'virginica', 'setosa',
       'virginica', 'setosa', 'versicolor', 'versicolor', 'versicolor',
       'versicolor', 'versicolor', 'versicolor', 'versicolor',
```

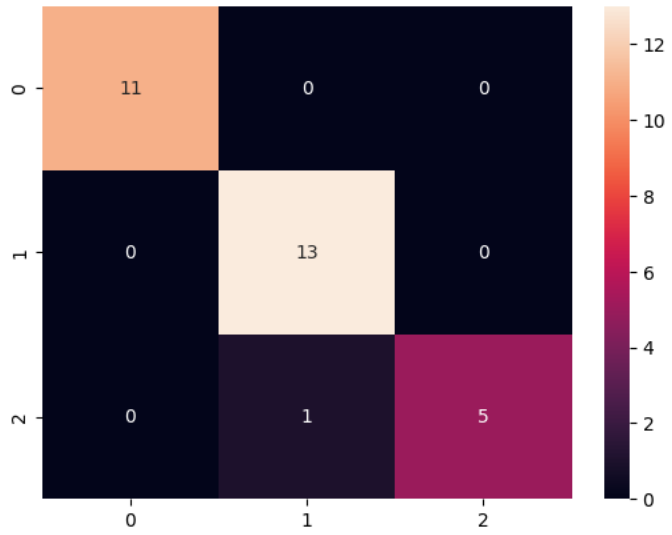
```
       'versicolor', 'setosa', 'versicolor', 'versicolor', 'setosa',
       'setosa', 'virginica', 'versicolor', 'setosa', 'setosa',
       'virginica', 'setosa', 'setosa', 'versicolor', 'versicolor',
       'setosa'], dtype='<U10')
```

```
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 96.66666666666667
```

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

```
<Axes: >
```



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