

```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
import sklearn
```

```
X
array([[ 'Male', 19, 19000],
       [ 'Male', 35, 20000],
       [ 'Female', 26, 43000],
       ...,
       [ 'Female', 50, 20000],
       [ 'Male', 36, 33000],
       [ 'Female', 49, 36000]], dtype=object)
```

dataset

400 rows × 5 columns

X

```
array([[1, 19, 19000],
       [1, 35, 20000],
       [0, 26, 43000],
       ...,
       [0, 50, 20000],
       [1, 36, 33000],
       [0, 49, 36000]], dtype=object)
```

```
##Train test Split
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.20, random_state = 0)
```

```
##Feature scaling
```

```
from sklearn.preprocessing import StandardScaler
sc = StandardScaler()
X_train = sc.fit_transform(X_train)
X_test = sc.transform(X_test)
```

```
##Training the Naive Bayes model on the training set
```

```
from sklearn.naive_bayes import GaussianNB
classifier = GaussianNB()
classifier.fit(X_train, y_train)
```

```
GaussianNB()
```

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

```
y_pred
```

```
array([0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 1,
       0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0,
       1, 0, 0, 1, 0, 1, 1, 0, 0, 1, 1, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 1,
       0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1])
```

```
y_test
```

```
array([0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1,
       0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0,
       1, 0, 0, 1, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 1, 0, 1, 0, 1,
       0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 1, 1])
```

```
from sklearn.metrics import confusion_matrix, accuracy_score
cm = confusion_matrix(y_test, y_pred)
ac = accuracy_score(y_test, y_pred)
```

```
ac
```

```
0.925
```

```
cm
```

```
array([[56, 2],
       [ 4, 18]])
```

```
# Single code
```

```
# Importing the libraries
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
```

```
# Importing the dataset
dataset = pd.read_csv('Social_Network_Ads.csv')
X = dataset.iloc[:, [2, 3]].values
y = dataset.iloc[:, -1].values
```

```
# Splitting the dataset into the Training set and Test set
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.20, random_state = 0)
```

```
# Feature Scaling
from sklearn.preprocessing import StandardScaler
sc = StandardScaler()
X_train = sc.fit_transform(X_train)
X_test = sc.transform(X_test)

# Training the Naive Bayes model on the Training set
from sklearn.naive_bayes import GaussianNB
classifier = GaussianNB()
classifier.fit(X_train, y_train)

# Predicting the Test set results
y_pred = classifier.predict(X_test)

# Making the Confusion Matrix
from sklearn.metrics import confusion_matrix, accuracy_score
ac = accuracy_score(y_test,y_pred)
cm = confusion_matrix(y_test, y_pred)
```

ac

0.9125

cm

```
array([[55,  3],
       [ 4, 18]])
```