In [7]:

```
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.naive_bayes import GaussianNB
from sklearn.metrics import accuracy_score, classification_report, confusion_matrix

# Load the dataset
data = pd.read_csv('IRIS_DATASET.csv')

# Prepare features and target variable
x = data.iloc[:, :-1]  # Features: all columns except the last one
y = data.iloc[:, -1]   # Target: last column

# Split the dataset into training and testing sets
x_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.3, random_state=42)

# Create and train the Naive Bayes classifier and make predictions
model = GaussianNB()
model.fit(x_train, y_train)
y_pred = model.predict(x_test)

# Evaluate the model
accuracy = accuracy_score(y_test, y_pred)
class_report = classification_report(y_test, y_pred)

# Print the results
print(f'Accuracy: {accuracy:.2f}')
print('Classification Report:')
print(class_report)

confusionmatrix = confusion_matrix(y_test, y_pred) # Confusion Matrix
print('Confusion Matrix:')
print(confusionmatrix)

# Predictions for unseen data
unseen_data = [[5.7, 3.5, 5.4, 0.2]]
predictions = model.predict(unseen_data)
print('Predictions for Unseen Data:')
print(predictions)
```

```
Accuracy: 0.98
Classification Report:
              precision    recall  f1-score   support

      setosa       1.00      1.00      1.00        19
  versicolor       1.00      0.92      0.96        13
   virginica       0.93      1.00      0.96        13

    accuracy                           0.98        45
   macro avg       0.98      0.97      0.97        45
weighted avg       0.98      0.98      0.98        45

Confusion Matrix:
[[19  0  0]
 [ 0 12  1]
 [ 0  0 13]]
Predictions for Unseen Data:
['versicolor']
```