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

```
dataset = pd.read_csv('https://raw.githubusercontent.com/mk-gurucharan/Classification/master/
X = dataset.iloc[:,:4].values
y = dataset['species'].values
dataset.head(5)
```

| | 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 |

```
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)
```

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

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

```
GaussianNB()
```

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

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

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

```
from sklearn.metrics import accuracy_score
print ("Accuracy : ", accuracy_score(y_test, y_pred))
cm
```

```
Accuracy :  0.9333333333333333
array([[ 8,  0,  0],
       [ 0, 12,  1],
       [ 0,  1,  8]])
```

```
df = pd.DataFrame({'Real Values':y_test, 'Predicted Values':y_pred})
df
```

| | Real Values | Predicted Values |
|---|---|---|
| **0** | setosa | setosa |
| **1** | versicolor | versicolor |
| **2** | virginica | virginica |
| **3** | versicolor | versicolor |
| **4** | setosa | setosa |
| **5** | versicolor | versicolor |
| **6** | setosa | setosa |
| **7** | setosa | setosa |
| **8** | versicolor | versicolor |
| **9** | virginica | versicolor |
| **10** | setosa | setosa |
| **11** | versicolor | versicolor |
| **12** | versicolor | versicolor |
| **13** | versicolor | versicolor |
| **14** | versicolor | versicolor |
| **15** | virginica | virginica |
| **16** | virginica | virginica |
| **17** | versicolor | versicolor |
| **18** | virginica | virginica |
| **19** | virginica | virginica |