

```

In [5]: import numpy as np
import pandas as pd
from sklearn.neighbors import KNeighborsClassifier
from sklearn.model_selection import train_test_split
from sklearn import metrics
names = ['Sepal_Length', 'Sepal_Width', 'Petal_Length', 'Petal_Width', 'Class']
dataset = pd.read_csv("irrrrrriiiiissssss.csv", names=names)
X = dataset.iloc[:, :-1]
y = dataset.iloc[:, -1]
print(X.head())
Xtrain, Xtest, ytrain, ytest = train_test_split(X, y, test_size=0.10)
classifier = KNeighborsClassifier(n_neighbors=5).fit(Xtrain, ytrain)
ypred = classifier.predict(Xtest)
i = 0
print ("\n -----")
print ('%-25s %-25s %-25s' % ('Original Label', 'Predicted Label', 'Correct/Wrong'))
print (" -----")
for label in ytest:
    print ('%-25s %-25s' % (label, ypred[i]), end="")
    if (label == ypred[i]):
        print (' %-25s' % ('Correct'))
    else:
        print (' %-25s' % ('Wrong'))
    i = i + 1
print (" -----")
print("\nConfusion      Matrix:\n",metrics.confusion_matrix(ytest,ypred))
print (" -----")

print("\nClassification Report:\n",metrics.classification_report(ytest, ypred))
print (" -----")
print('Accuracy of the classifer is %0.2f' % metrics.accuracy_score(ytest,ypred))
print (" -----")

```

	Sepal_Length	Sepal_Width	Petal_Length	Petal_Width
0	5.1	3.5	1.4	0.2
1	4.9	3.0	1.4	0.2
2	4.7	3.2	1.3	0.2
3	4.6	3.1	1.5	0.2
4	5.0	3.6	1.4	0.2

Original Label	Predicted Label	Correct/Wrong
Iris-virginica	Iris-virginica	Correct
Iris-versicolor	Iris-versicolor	Correct
Iris-versicolor	Iris-versicolor	Correct
Iris-versicolor	Iris-versicolor	Correct
Iris-virginica	Iris-virginica	Correct
Iris-virginica	Iris-virginica	Correct
Iris-versicolor	Iris-versicolor	Correct
Iris-versicolor	Iris-versicolor	Correct
Iris-virginica	Iris-virginica	Correct
Iris-virginica	Iris-virginica	Correct
Iris-setosa	Iris-setosa	Correct
Iris-virginica	Iris-virginica	Correct
Iris-virginica	Iris-versicolor	Wrong
Iris-setosa	Iris-setosa	Correct
Iris-setosa	Iris-setosa	Correct

Confusion Matrix:

```
[[3 0 0]
 [0 5 0]
 [0 1 6]]
```

Classification Report:

	precision	recall	f1-score	support
Iris-setosa	1.00	1.00	1.00	3
Iris-versicolor	0.83	1.00	0.91	5
Iris-virginica	1.00	0.86	0.92	7
accuracy			0.93	15
macro avg	0.94	0.95	0.94	15
weighted avg	0.94	0.93	0.93	15

Accuracy of the classifier is 0.93

C:\ProgramData\Anaconda3\lib\site-packages\sklearn\neighbors\\_classification.py:228: FutureWarning: Unlike other reduction functions (e.g. `skew`, `kurtosis`), the default behavior of `mode` typically preserves the axis it acts along. In SciPy 1.11.0, this behavior will change: the default value of `keepdims` will become False, the `axis` over which the statistic is taken will be eliminated, and the value None will no longer be accepted. Set `keepdims` to True or False to avoid this warning.

```
mode, _ = stats.mode(_y[neigh_ind, k], axis=1)
```

In [ ]: