

### Program :-

```
import numpy as np
import pandas as pd
import csv
from sklearn.neighbors import KNeighborsClassifier
from sklearn.model_selection import train_test_split
from sklearn.metrics import classification_report, confusion_matrix

df = pd.read_csv(r"/home/student/Desktop/sinan/Iris.csv")
print(df.head(0))

f = ['Id','SepalLengthCm','SepalWidthCm','PetalLengthCm','PetalWidthCm']
X = df[f]
y = df.Species

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.25, random_state = 100)
clf = KNeighborsClassifier()
clf.fit(X_train, y_train)
y_pred = clf.predict(X_test)

accuracy = clf.score(X_test, y_test)

print("confusion matrix : \n", confusion_matrix(y_test, y_pred))
print("Classification report : \n", classification_report(y_test, y_pred))
print("Accuracy:", accuracy)
```

### Output :-

```
(base) student@cseadmin:~/Desktop/sinan$ python3 knn.py
Empty DataFrame
confusion matrix :
[[14  0  0]
 [ 0  9  1]
 [ 0  0 14]]
Classification report :
              precision    recall  f1-score   support

 Iris-setosa          1.00      1.00      1.00        14
 Iris-versicolor      1.00      0.90      0.95        10
 Iris-virginica        0.93      1.00      0.97        14

 accuracy                   0.97         38
 macro avg              0.98      0.97      0.97         38
 weighted avg           0.98      0.97      0.97         38

Accuracy: 0.9736842105263158
(base) student@cseadmin:~/Desktop/sinan$
```