PRACTICAL NO 8

Code :

```
from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.neighbors import KNeighborsClassifier

# Load the iris dataset
iris = load_iris()

# Split the data into training and test sets
X_train,X_test,y_train,y_test = train_test_split(iris.data, iris.target
, test_size=0.2)

# Create a k-NN classifier with k=3
knn = KNeighborsClassifier(n_neighbors=3)

# Fit the classifier to the training data
knn.fit(X_train, y_train)

# Make predictions on the test set
y_pred = knn.predict(X_test)

# Print the correct and incorrect predictions
for i in range(len(y_test)):
    if y_test[i] == y_pred[i]:
        print(f"Correct prediction: {iris.target_names[y_pred[i]]}")
    else:
        print(f"Incorrect prediction: Predicted
{iris.target_names[y_pred[i]]}, Actual {iris.target_names[y_test[i]]}")
```

Output :

```
Correct prediction: versicolor
Correct prediction: virginica
Correct prediction: versicolor
Correct prediction: virginica
Correct prediction: versicolor
Correct prediction: virginica
Incorrect prediction: Predicted virginica, Actual versicolor
Correct prediction: versicolor
Correct prediction: versicolor
Correct prediction: setosa
Correct prediction: versicolor
Correct prediction: virginica
Correct prediction: setosa
Correct prediction: virginica
Correct prediction: setosa
```

```
Correct prediction: setosa
Correct prediction: setosa
Correct prediction: versicolor
Correct prediction: virginica
Correct prediction: setosa
Correct prediction: virginica
Correct prediction: setosa
Correct prediction: setosa
Correct prediction: virginica
Correct prediction: versicolor
Correct prediction: virginica
Correct prediction: versicolor
Correct prediction: virginica
Correct prediction: setosa
Correct prediction: versicolor
```