

Test KNN on Iris dataset and visualize the results

```
from sklearn import datasets

from sklearn.model_selection import train_test_split

from sklearn.metrics import classification_report, confusion_matrix

import numpy as np

import matplotlib.pyplot as plt


#User defined module import

from KNN import k_nearest_neighbors


#Loading dataset

iris_data = datasets.load_iris()

data = iris_data.data

target = iris_data.target


# Train/Test splits

X_train, X_test, y_train, y_test = train_test_split(data, target, test_size=0.2)

print("training instances: ", len(X_train))

print("Test instances: ", len(X_test))


#Train KNN model

my_model = k_nearest_neighbors(k = 3)

model = my_model.knn_fit(X_train, y_train)

predictions = my_model.knn_predict(X_test)


#Evaluation report

print("confusion Matrix:")

print(confusion_matrix(y_test, predictions))
```

```
print("Classification report:", classification_report(y_test, predictions))
```

```
#Visualize the predictions
```

```
for class_value in range(3):
```

```
    row_ix = np.where(predictions== class_value)
```

```
    row_px = np.where(y_test== class_value)
```

```
        # create scatter of these samples
```

```
    if(class_value==0):
```

```
        m='*'
```

```
        c='red'
```

```
    elif(class_value==1):
```

```
        m="o"
```

```
        c='green'
```

```
    elif(class_value==2):
```

```
        m='x'
```

```
        c='blue'
```

```
plt.scatter(X_test[row_ix, 1], X_test[row_ix, 0],marker=m,color=c)
```