knnimplementation

2019 年 3 月 1 日

1 KNN 実装

In [1]:
```
from sklearn import datasets
import numpy as np
import matplotlib.pyplot as plt
import layers
from layers import decisionregionplotfunction as drp
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.neighbors import KNeighborsClassifier
```

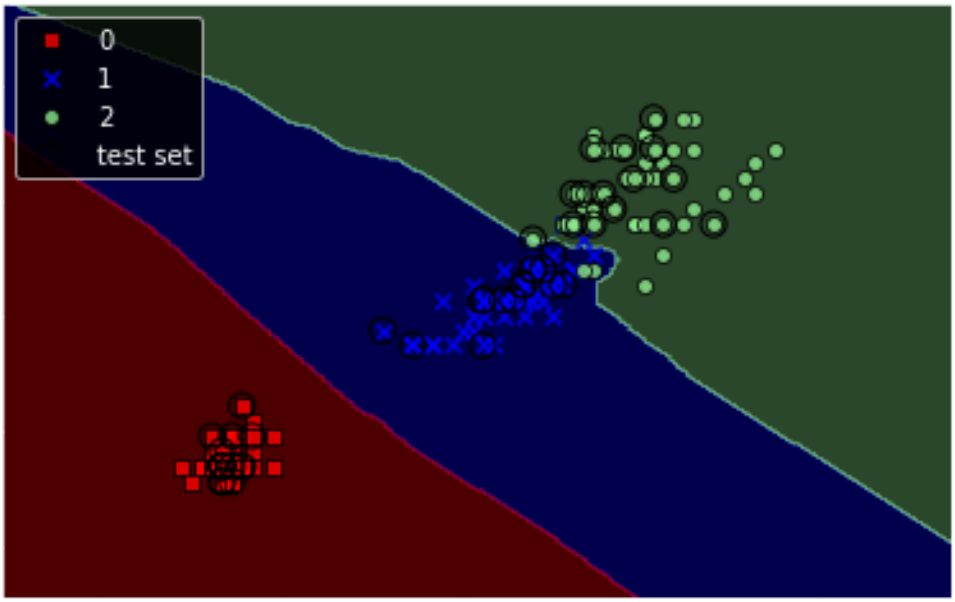
In [2]:
```
iris=datasets.load_iris()
x=iris.data[:,[2,3]]
y=iris.target
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.3,random_state=1,stratify=y)
```

In [3]:
```
sc=StandardScaler()
sc.fit(x_train)
x_train_std=sc.transform(x_train)
x_test_std=sc.transform(x_test)
x_combined_std=np.vstack((x_train_std,x_test_std))
y_combined=np.hstack((y_train,y_test))
```

In [4]:
```
knn=KNeighborsClassifier(n_neighbors=5,p=2,metric='minkowski')
knn.fit(x_train_std,y_train)
```

Out[4]:
```
KNeighborsClassifier(algorithm='auto', leaf_size=30, metric='minkowski',
                     metric_params=None, n_jobs=None, n_neighbors=5, p=2,
                     weights='uniform')
```

In [5]:
```
drp.plot_decision_regions(x=x_combined_std,y=y_combined,classifier=knn,test_idx=range(105,15
plt.xlabel('petal length [standardized]')
plt.ylabel('petal width [standardized]')
plt.legend(loc='upper left')
plt.tight_layout()
plt.show()
```



In [6]: