from sklearn import datasets

from sklearn.datasets import load\_iris

import matplotlib.pyplot as plt

from sklearn. cluster import KMeans

iris=datasets.load\_iris()

X=iris.data

y=iris.target

plt.scatter(X[:,1],X[:,2],c=y,cmap='prism')

plt.xlabel('sepal length',fontsize=18)

plt.ylabel('sepal widtgh',fontsize=18)

km=KMeans(n\_clusters=3,init='k-means++',n\_init=10,max\_iter=3000,verbose=0,random\_state=27,tol=0.00001,copy\_x=True,algorithm="auto")

km.fit(X)

centers=km.cluster\_centers\_

print(centers)

new\_labels=km.labels\_

print(new\_labels)

print(y)

fig,axes=plt.subplots(1,2,figsize=(16,8))

axes[0].scatter(X[:,0],X[:,1],c=y, cmap='prism',edgecolors='k',s=7)

axes[1].scatter(X[:,0],X[:,1],c=new\_labels,cmap='jet',edgecolors='k',s=7)

axes[0].set\_xlabel('sepal length',fontsize=12)

axes[0].set\_ylabel('sepal width',fontsize=12)

axes[1].set\_xlabel('sepal length',fontsize=12)

axes[1].set\_ylabel('sepal width',fontsize=12)

axes[0].tick\_params(direction='in',length=10,width=5,color='k',labelsize=15)

axes[1].tick\_params(direction='in',length=10,width=5,color='k',labelsize=15)

axes[0].set\_title("acutal",fontsize=18)

axes[1].set\_title("predicted",fontsize=18)