import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

from sklearn.decomposition import PCA

from sklearn.preprocessing import StandardScaler

from sklearn import datasets

%matplotlib inline

plt.style.use('seaborn')

……..

iris = datasets.load\_iris()

X = pd.DataFrame(iris.data, columns=iris.feature\_names)

y = pd.Series(iris.target, name='FlowerType')

X.head()

……..

plt.figure(4, figsize=(8, 6))

plt.clf()

# Plot the training points

plt.scatter(X['sepal length (cm)'], X['sepal width (cm)'], s=35, c=y, cmap=plt.cm.brg)

plt.xlabel('Sepal length')

plt.ylabel('Sepal width')

plt.title('Sepal length vs. Sepal width')

plt.show()

…….

x = StandardScaler().fit\_transform(X)

…….

pd.DataFrame(data = x, columns = features).head()

…..

pca = PCA(n\_components=2)

principalComponents = pca.fit\_transform(x)

principalDf = pd.DataFrame(data = principalComponents,columns = ['principal component 1', 'principal component 2'])

principalDf.head(5)

……..

principalDf.shape

……….

colors = ['r', 'g', 'b']

plt.scatter(principalComponents[:,0],principalComponents[:,1],c=y)