import matplotlib.pyplot as plt

from sklearn.model\_selection import train\_test\_split

from sklearn.datasets import fetch\_lfw\_people

from sklearn.decomposition import PCA

from sklearn.discriminant\_analysis import LinearDiscriminantAnalysis

from sklearn.neural\_network import MLPClassifier

import numpy as np

import os,cv2

def plot\_gallery(images, titles, h, w, n\_row=3, n\_col=4):

    """Helper function for plotting gallery """

    plt.figure(figsize=(1.8\* n\_col, 2.4 \* n\_row))

    plt.subplots\_adjust(bottom=0, left=.01, right=.99, top=.90, hspace=.35)

    for i in range(n\_row \* n\_col):

        plt.subplot(n\_row, n\_col, i + 1)

        plt.imshow(images[i].reshape((h, w)), cmap=plt.cm.gray)

        plt.title(titles[i], size=12)

        plt.xticks(())

        plt.yticks(())