Homework 3 (Due: Jan 1, 2016)

1. Each student must take 20 pictures of your face with white background. All face images should include 4 expressions: normal, smile, cry, and frown. Each class has 5 images, taken from 5 different view angles: front view, left and right sides (around 30 degree), upper and lower views (around 30 degree).

Please preprocess (eg. crop) your pictures to keep only the face area. And resize the preprocessed image to 200*200*3. Email all of your face images to TA.

1) Compute your first 10 eigenfaces with your image sand reconstruct your faces with these eigenfaces. Analyze how many eigenfaces can best reconstruct your face.

Divide all images (yours and others) into training (30 classes, 10 images for each) and test sets (30 classes, 10 images for each).
2) Compute the first 10 eigenfaces with the training set and classify the test set with 1-NN classifier in the feature space and compute the accuracy.

3) Compute the first 10 fisherfaces with the training set and classify the test set with 1-NN classifier in the feature space and compute the accuracy.