

```
In [2]: # --face recognition using eigenface--

#code: http://scikit-learn.org/stable/auto\_examples/applications/plot\_f

# references: 1. https://github.com/bugra/EigenFace
#              2. https://github.com/junzis/memeit/blob/master/ref/face\_
#              3. https://onionesquereality.wordpress.com/2009/02/11/fa
#              4. http://bugra.github.io/work/notes/2013-07-27/PCA-Eigen
```

```
In [4]: from __future__ import print_function      #allows incompatible function
                                                # printing way
```

```
In [30]: from time import time                    #will display logging time/warning
import logging
```

```
In [7]: import matplotlib.pyplot as plt
        #plotting the graph
```

```
In [9]: from sklearn.cross_validation import train_test_split
        #splitting the input set
```

```
In [14]: from sklearn.model_selection import GridSearchCV
         #exhaustive searching over a grid of parameters
```

```
In [16]: from sklearn.metrics import classification_report
         #generates matrix of target values
         #precision, recall, f1-score ,support (read sklearn)
```

```
In [18]: from sklearn.metrics import confusion_matrix
         # for debugging confusion matrix
```

```
In [19]: from sklearn.datasets import fetch_lfw_people
         # taking dataset of people from sklearn dataset
```

```
In [21]: from sklearn.decomposition import PCA
         #principal component analysis
         #linear dimension reduction using decomposition
```

```
In [23]: from sklearn.svm import SVC
         #support vector classification
         #svm part : fails for large datasets
```