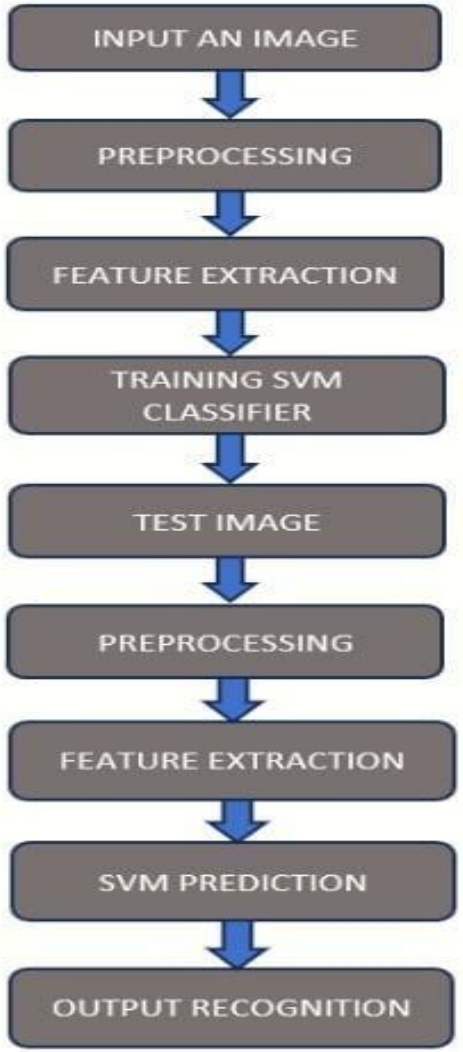
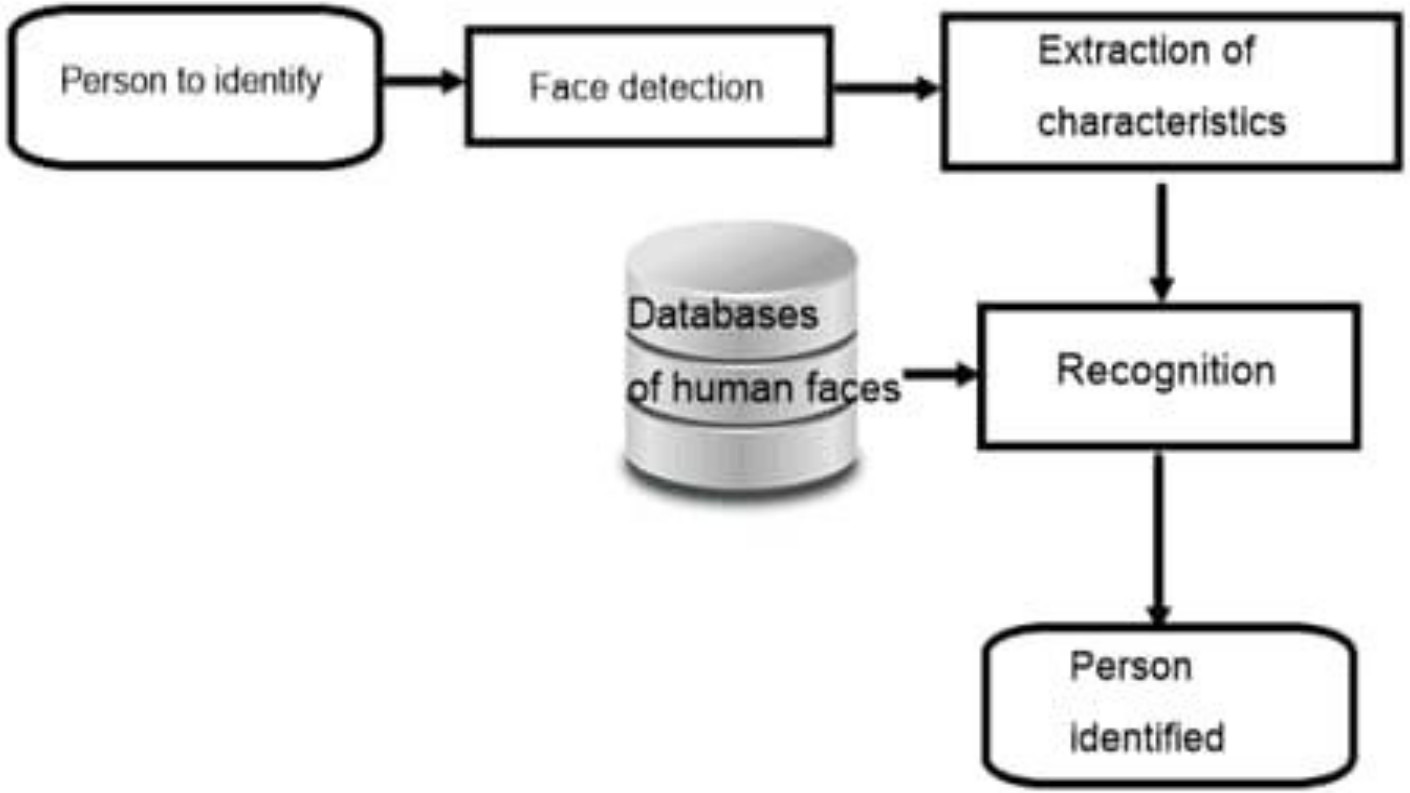
Face Recognition Using SVM

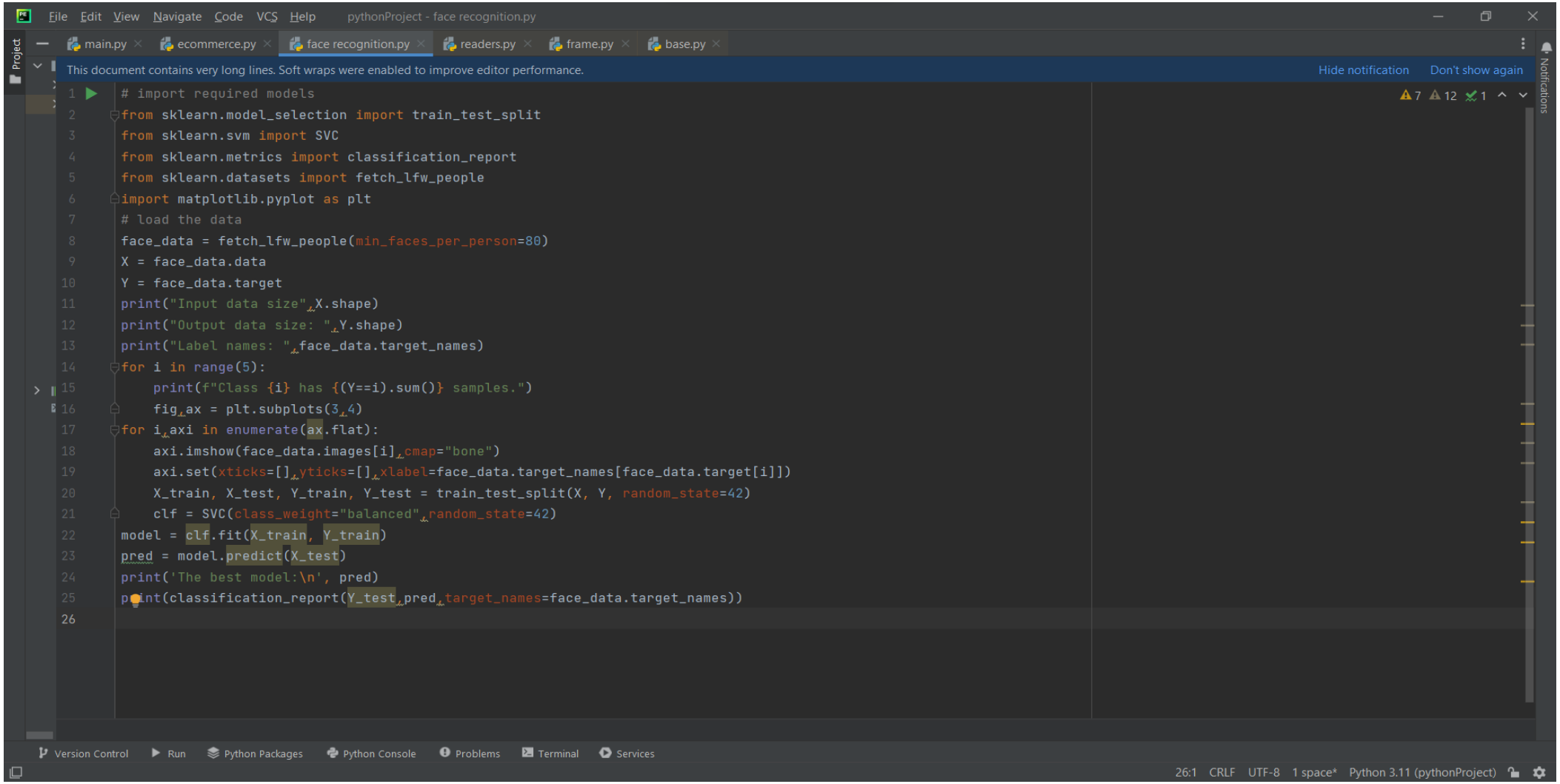
Flow Chart


INPUT AN IMAGE
PREPROCESSING
FEATURE EXTRACTION
TRAINING SVM CLASSIFIER
TEST IMAGE
PREPROCESSING
FEATURE EXTRACTION
SVM PREDICTION
OUTPUT RECOGNITION

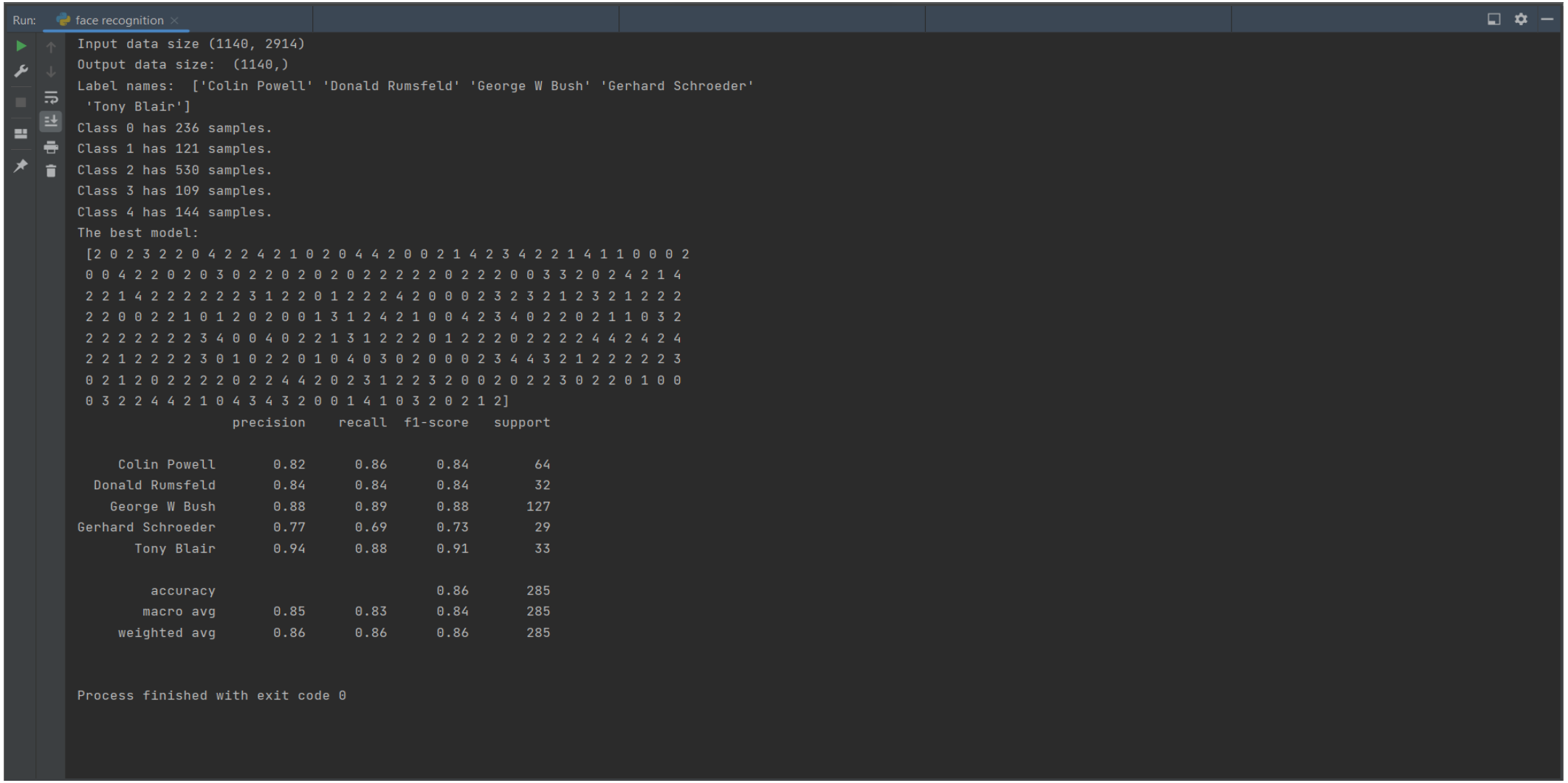
Architecture Diagram



Program Code



Output


Run:
face recognition
Input data size (1140, 2914)
Output data size: (1140,)
Label names: ['Colin Powell' 'Donald Rumsfeld' 'George W Bush' 'Gerhard Schroeder'
'Tony Blair']
Class 0 has 236 samples.
Class 1 has 121 samples.
Class 2 has 530 samples.
Class 3 has 109 samples.
Class 4 has 144 samples.
The best model:
[2 0 2 3 2 2 0 4 2 2 4 2 1 0 2 0 4 4 2 0 0 2 1 4 2 3 4 2 2 1 4 1 1 0 0 0 2
0 0 4 2 2 0 2 0 3 0 2 2 0 2 0 2 0 2 2 2 2 2 0 2 2 2 0 0 3 3 2 0 2 4 2 1 4
2 2 1 4 2 2 2 2 2 2 3 1 2 2 0 1 2 2 2 4 2 0 0 0 2 3 2 3 2 1 2 3 2 1 2 2 2
2 2 0 0 2 2 1 0 1 2 0 2 0 0 1 3 1 2 4 2 1 0 0 4 2 3 4 0 2 2 0 2 1 1 0 3 2
2 2 2 2 2 2 2 3 4 0 0 4 0 2 2 1 3 1 2 2 2 0 1 2 2 2 0 2 2 2 2 4 4 2 4 2 4
2 2 1 2 2 2 2 3 0 1 0 2 2 0 1 0 4 0 3 0 2 0 0 0 2 3 4 4 3 2 1 2 2 2 2 2 3
0 2 1 2 0 2 2 2 2 0 2 2 4 4 2 0 2 3 1 2 2 3 2 0 0 2 0 2 2 3 0 2 2 0 1 0 0
0 3 2 2 4 4 2 1 0 4 3 4 3 2 0 0 1 4 1 0 3 2 0 2 1 2]
precision recall f1-score support
Colin Powell 0.82 0.86 0.84 64
Donald Rumsfeld 0.84 0.84 0.84 32
George W Bush 0.88 0.89 0.88 127
Gerhard Schroeder 0.77 0.69 0.73 29
Tony Blair 0.94 0.88 0.91 33
accuracy 0.86 285
macro avg 0.85 0.83 0.84 285
weighted avg 0.86 0.86 0.86 285
Process finished with exit code 0