|  |  |
| --- | --- |
| Name: | Edward Eisenberger |
| ID# | 1066164 |
| Assignment 8 | |
| Due Date | April 14, 2019 |
| Date of Submission | April 14, 2019 |

# Overview

Assignment 8 consisted of implementing Principal Component Analysis (PCA) and testing the implementation on the ATT Dataset. The PCA algorithm was trained with 200 images of 40 different people. The application allows the user to select the number of Eigen faces (e.g. 20, 30, 40, 50) to initialize the PCA algorithm with, then test it on any image as well as determine accuracy against the entire test set.

# Output

The implementation was tested for face recognition accuracy with the number of Eigen faces ranging from 20 to 100. The following table illustrates the effect the number of Eigen faces has on the accuracy of the implementation.

| **Eigen Faces** | **Accuracy** |
| --- | --- |
| 20 |  |
| 30 |  |
| 40 |  |
| 50 |  |
| 60 |  |
| 70 |  |
| 78 |  |
| 80 |  |
| 90 |  |
| 100 |  |

The following images are examples of test a single image using 78 eigen faces.







