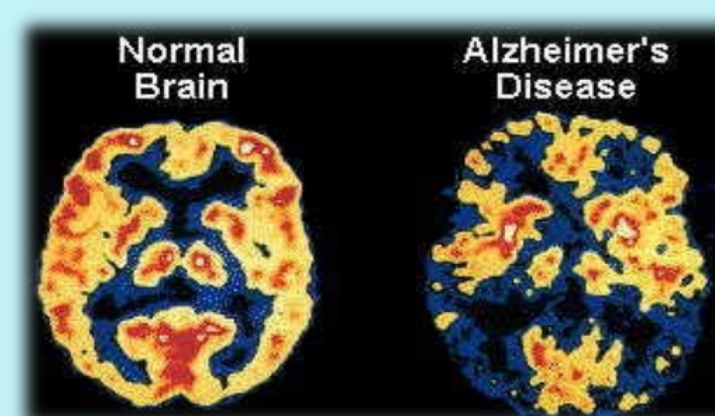


About Alzheimer's Disease

- Alzheimer's Disease affects 5 million Americans over the age of 65
- Since disease has no cure, it is the sixth leading cause of death in America
- The number of people affected by this disease is expected to augment to 7 million by 2025
- In 2013, 15.5 million family and friends provided 17.7 billion hours of unpaid care to those with Alzheimer's and other dementias



Goal

To create a new type of reminiscence technology to slow the progression of Alzheimer's Disease in patients and improve their quality of life

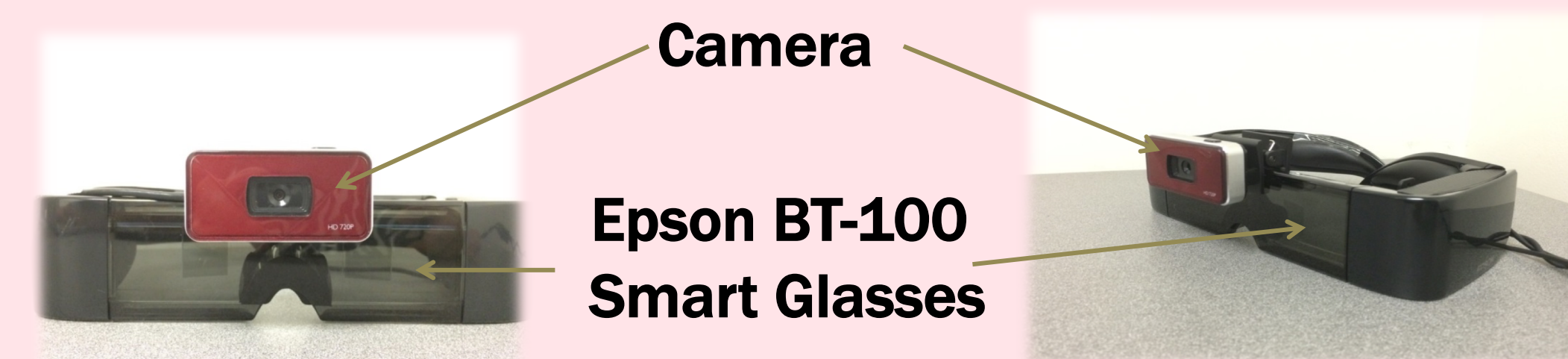


Approach

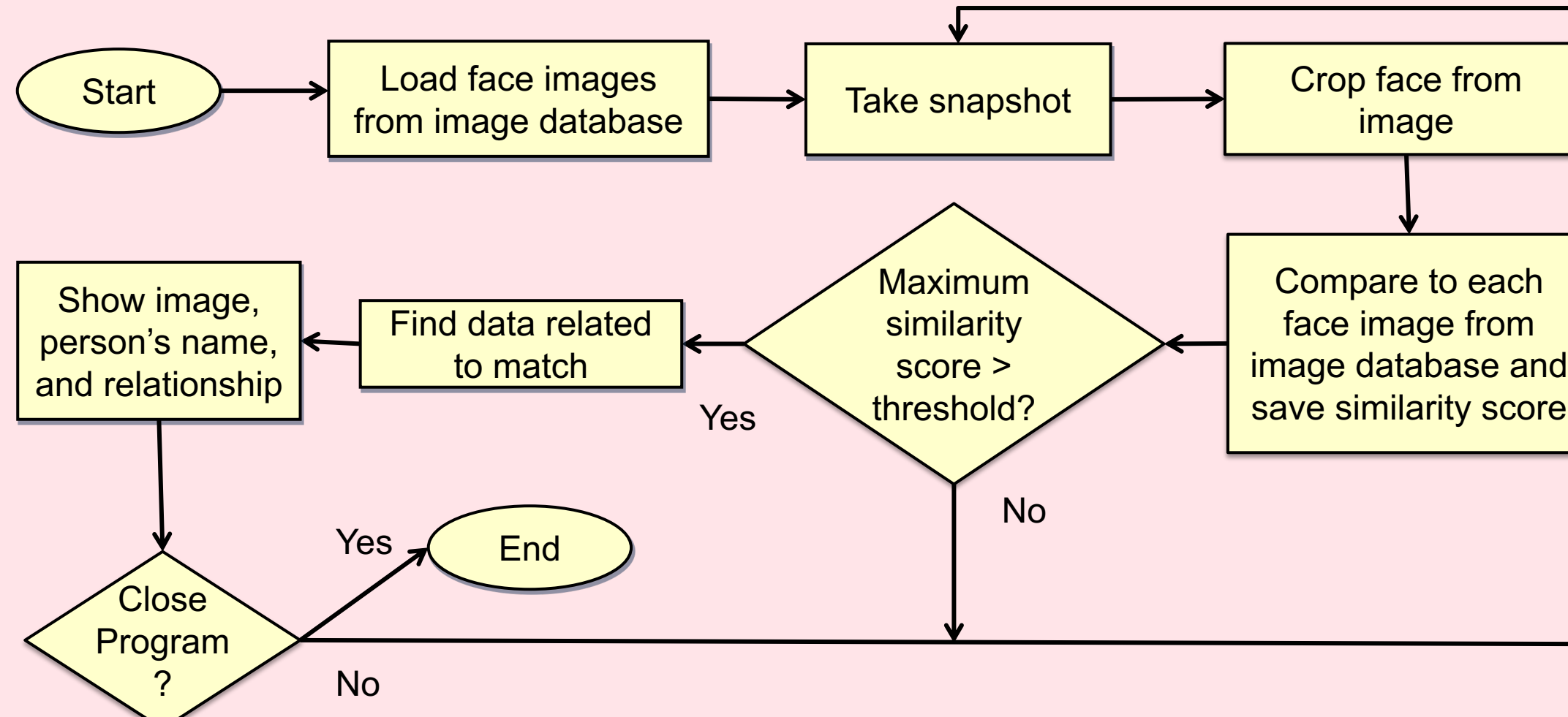
This reminiscence technology consists is a combination of Epson glasses and facial recognition technology. Uploaded pictures of loved ones are utilized for facial recognition through the glasses. Once a person is recognized through the glasses the program provides an array of photos and messages related to the person in order to remind the patient of his or her relationship with a certain person. Along with the digital "memories" through the photos, the program can provide a brief description of the person that is recognized to further assist the patient.

Design

The device is made up of a pair of Smart Glasses called the Epson BT-100, a facial recognition software, and a camera



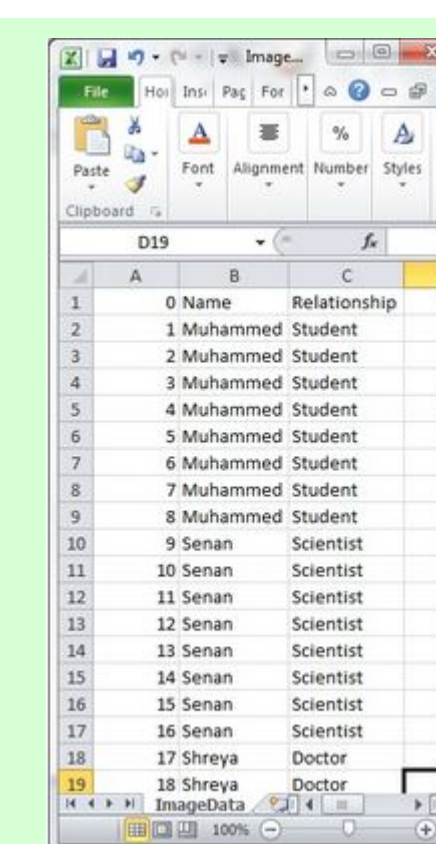
How does it work?



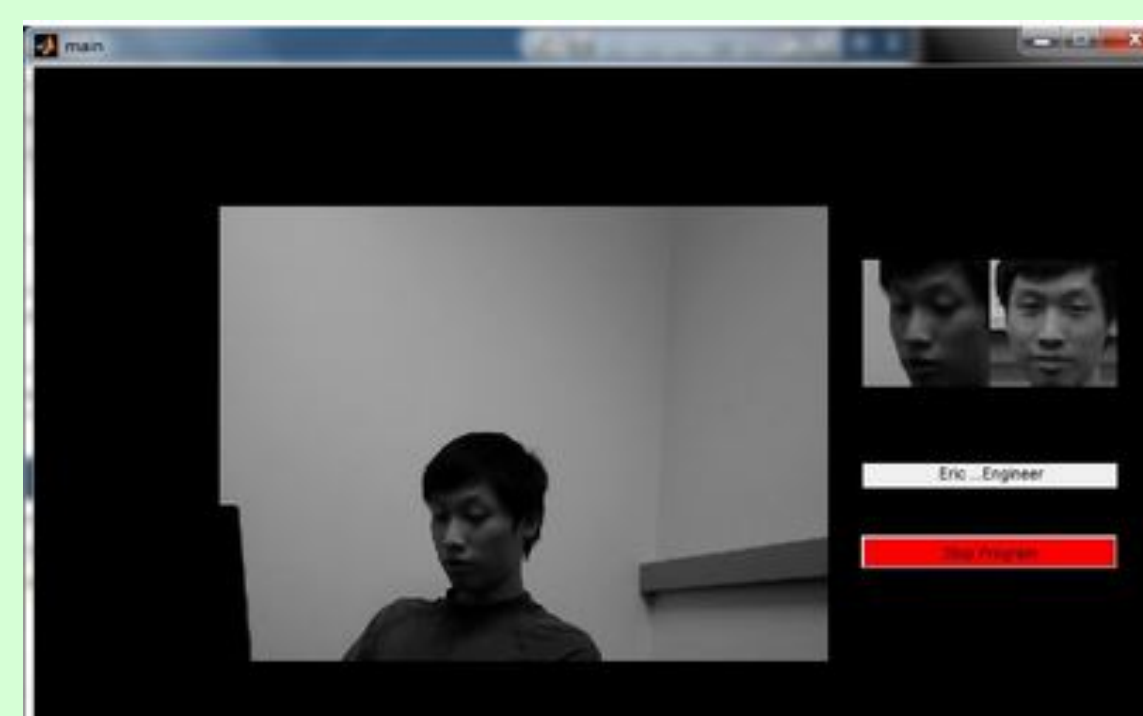
Demo



GUI for creating image database



Excel file containing information



Facial Recognition GUI

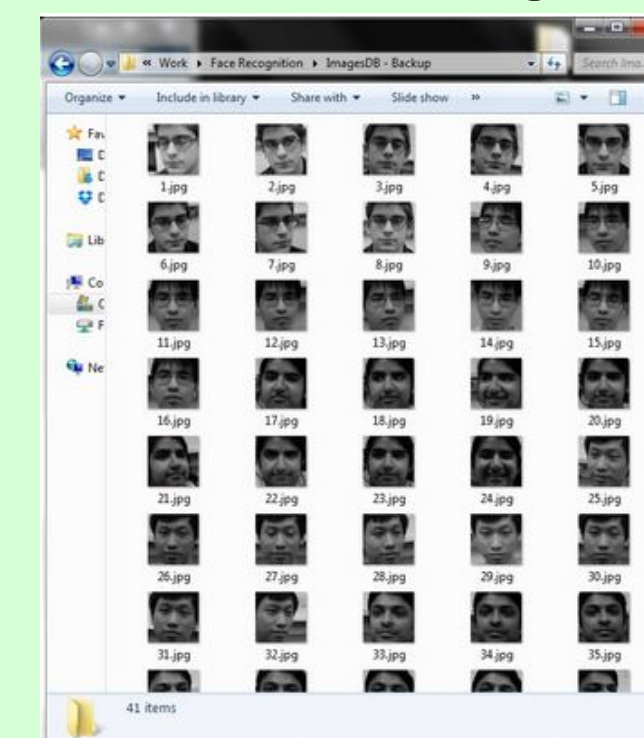
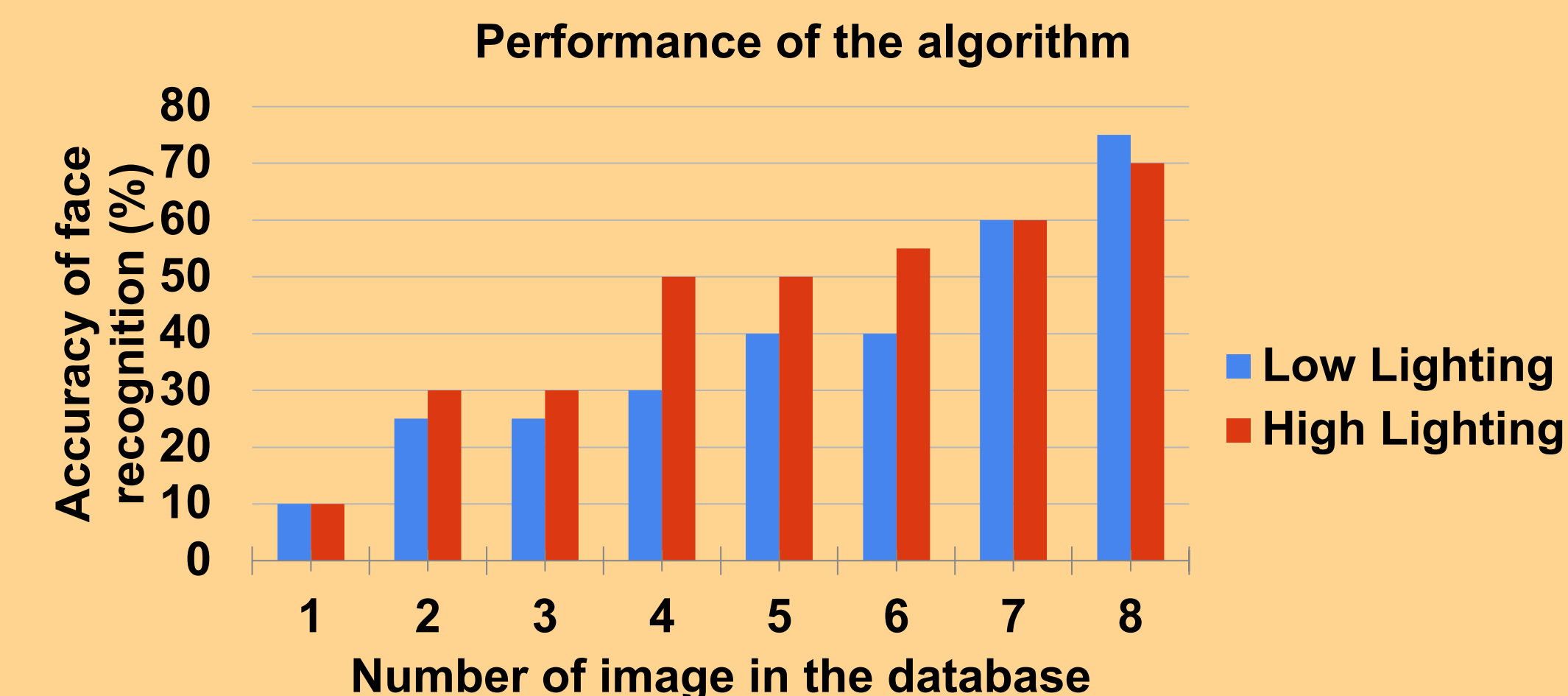


Image Database

Results and Discussions



The above graph shows the effect of different types of lighting on the accuracy of the facial recognition program. The graph demonstrates that Higher Lighting is slightly more suitable for maintaining an accurate result.

Conclusions

Based on the data we can infer that the facial recognition software can efficiently differentiate between faces. As expected the software works better when there are more photos added to the database. Overall, the Alzheimer's Glasses are now at part one of two in reaching the ultimate goal, of slowing down the progression of Alzheimer's Disease.

Future Work

Although the glasses are operable, they are not wireless, causing mobility with the glasses to be limited. To enhance these glasses, the next step would be to connect a wireless camera to a laptop. Other possibilities also include applications for smartphones, which can allow patients to easily upload pictures and be more mobile with their glasses. The glasses also do not have the capability of playing back "memories", it will be a feature that must be added later on.

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