[Computer Science]

Project Name	**Secure Door Lock**
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Faculty Advisor(s):	Dr. Marius Silaghi, Dept. Of Computer Science, Florida Institute of Technology

Project Description:

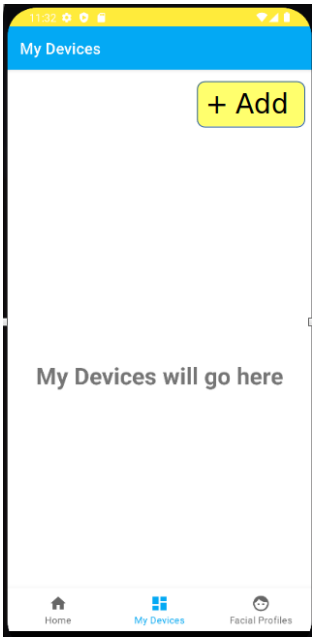
Give users access to an Internet-connected door lock that uses facial recognition technology to allow or disallow people from entering their homes. The accompanying mobile application allows users to access the functions of the door lock from anywhere in the world.

Features:

The user will be able to remotely lock and unlock the door from within the mobile application. The user will also be able to view whether or not the door is locked or unlocked from within the mobile application. The user will be able to view a live camera feed from the door lock within the mobile application. The mobile application will display a list of currently adopted door locks that are available for the user to interact with. The mobile application will allow the user to add additional door locks if they are available to be adopted. The door locks that a user has adopted will be available through their account, which can be accessed with a valid username and password entered through the mobile application. The user will be able to reset the password if they have forgotten it, as well as have the mobile application remember their account so they will not have to log in every time. The user will be able to view a list of recognized visitors from the mobile application. Recognized visitors are visitors that the facial recognition software of the door lock has seen before. Users will be able to add and delete recognized visitors from the mobile application. Users will also be able to customize the photos of recognized visitors. If the user does not choose a custom photo, the photo of the recognized visitor will be the last photo the door lock has taken of them. If a visitor is recognized, a push notification will be sent to the user's smartphone, allowing them to grant or deny entry through the door. This is to add an extra layer of security to the door lock, as the facial recognition technology in the door lock is not always accurate.

Evaluation:

Our project will be evaluated primarily through whether or not our requirements laid out in our requirements document were satisfied. The requirements document contains a comprehensive list of everything we would like to complete during this project. If a majority of the requirements contained in the requirements document were met, then we know that our project was a success. We will also utilize usability and security testing. Usability testing will involve conducting testing with end-users to ensure that the door lock is intuitive to use and meets the end-users' needs. Security testing will involve conducting testing to ensure that the door lock is secure and protected against cyber threats.



Major Challenges:

Major challenges of this project included ensuring the facial recognition is accurate and secure and ensuring the mobile application and the door lock were working together properly. The facial recognition not only needed to recognize there was a face, it also needed to compare that face to the other faces in the recognized visitors database to see if the visitor should be allowed access to the door or not. It was also imperative for our project that the software of the mobile application and the hardware of the door lock worked seamlessly to ensure the best user experience. This turned out to be a challenge for our team as we had to learn how to most effectively communicate with the physical hardware of the door lock.