

# Project Description

## **RFID Sensor:**

A feature for the smart lock included will be an RFID sensor. There will also be RFID cards coded to be assigned to specific users. These codes can be used to identify who is entering/leaving the home. It provides easier access to the home and has a low maintenance cost.

## **Bluetooth & Beagleboard:**

Another feature for the smart lock will be to include a Bluetooth connection that will operate through an app on the user's phone and be paired to the lock. This will allow the user to lock/unlock the door remotely.

The Beagleboard will be the feature to connect all of the components of the smart lock to each other. This will control the components used to unlock the lock and communicate with the app to notify the user who is entering/leaving the establishment.

## **Fingerprint Sensor:**

The third feature for this smart lock will include a capacitive fingerprint sensor that will be located on the exterior of the smart lock. It will be set so that only certain users may be able to unlock the lock. Capacitive fingerprint sensors are also the most durable and long lasting of the fingerprint sensors so that gives the smart lock a more desirable lifespan.

## **Switch Between Types of Locks:**

The product will be able to distinguish between the types of locks and efficiently unlock the door without error. A fail-safe will be implemented so that if the batteries die then the user can use a key in order to get into the house or room.

## **Android/ iPhone Application:**

A phone application will be used to control and monitor all components of the smart lock. This will let the user know when someone is entering/leaving the home as well as lock/unlock their homes at the comfort of their phone. This will be connected through the WiFi/Bluetooth features of the Beagleboard. This will be based on a Bluetooth connection.

The application will be created using Android Studios & the C# language.

## **Electrical Setup:**

We are intending on using double A batteries to operate the product at a low current in order to increase power efficiency. The goal is to not need to replace the batteries for a long-extended period of time. A voltage regulator and possibly amplifier will be used to control the different voltages and currents needed to operate the components in the smart lock

# Block Diagram

Keyless Entry



