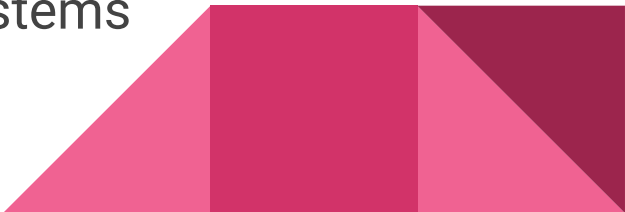



# Secure Door Lock Milestone 1 Presentation

Luke Butcher, Christopher Kiefer, James Pabisz, Warren Smith

# Milestone 1 Tasks

- Compare and select a Tech Stack
  - Design a proper IOT acceptance criteria
  - Set up Jira board
  - Requirements documentation
  - Design documents for subsystems
  - Integration documentation for subsystems
  - Design solution for lightweight facial recognition system
  - Design needed infrastructure to integrate all systems
- 

# Comparing and Selecting a Tech Stack

- Multiple technologies were examined
  - Research was split up by subsystems
    - App development, Network and Server interfacing, Hardware
  - Native Android development tools will be used
  - Kotlin will be used for application development
  - Android Studio will be used as the IDE
  - A react stack with AWS will be used
  - For hardware a Raspberry Pi and 2k camera will be used
  - Jira will be used as a project management tool
- 

# Setting Up a Jira Board

- Tasking was derived from itemized requirements
- High level requirements are categorized as User Stories
- Average expected work time requirement per User Story is 4 hours
- Each Itemized requirement is has lower level tasking that is generated

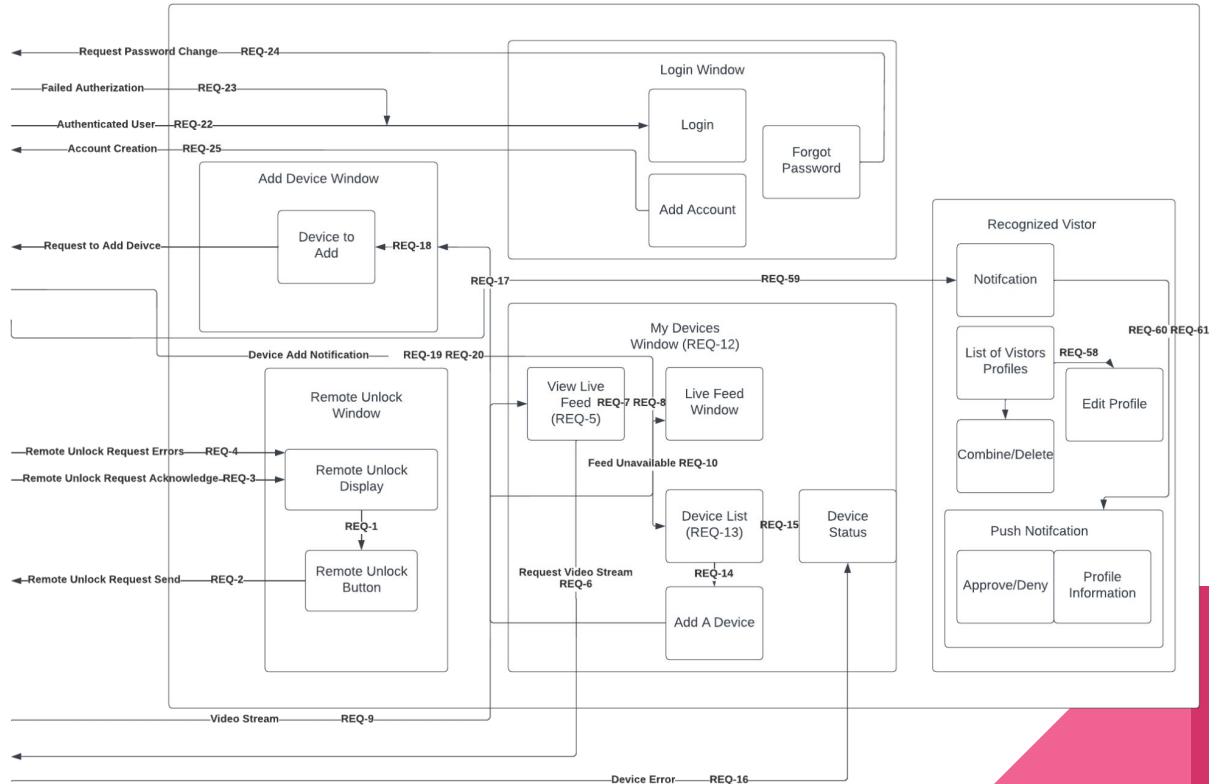


# Requirements Documentation

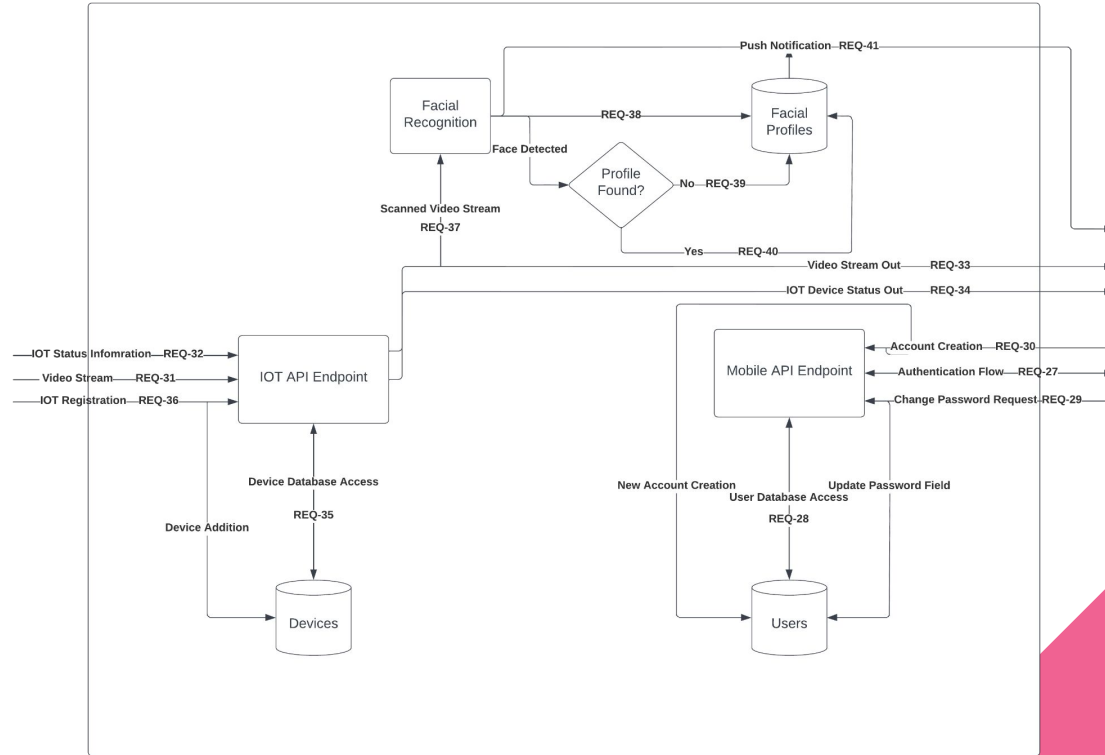
- **Mobile Application**
  - Remote Unlock
  - Remote Video Feed
  - User Authentication
- **Server**
  - Authentication
  - IOT Persistent Endpoint
  - Device Database
  - Facial Recognition
- **Firmware**
  - Unlock/Lock
  - Video Stream
  - IOT Adoption



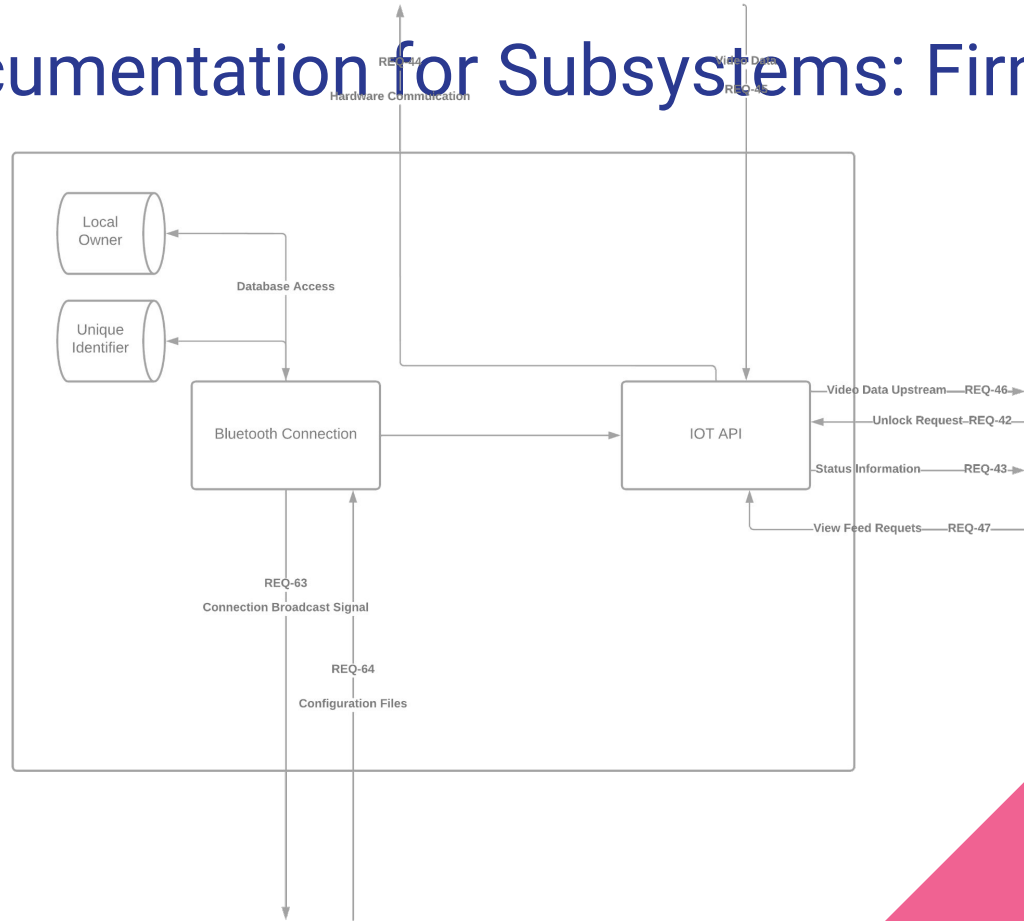
# Design Documentation for Subsystems-Mobile App



# Design Documentation for Subsystems: Server

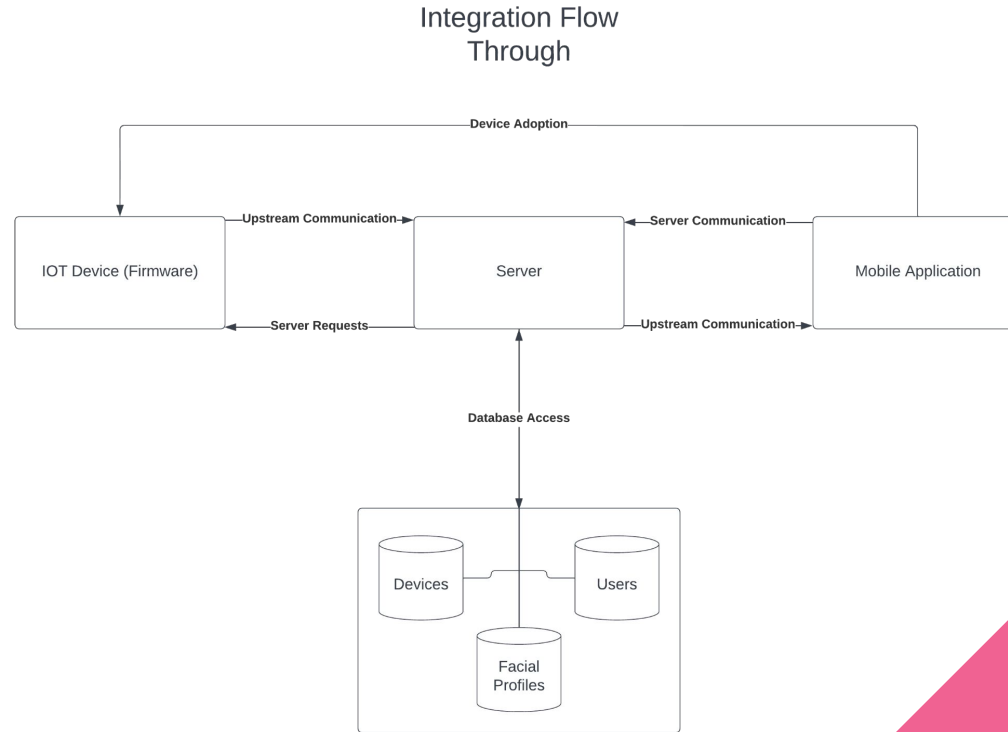


# Design Documentation for Subsystems: Firmware





# Integration Documentation for Subsystems

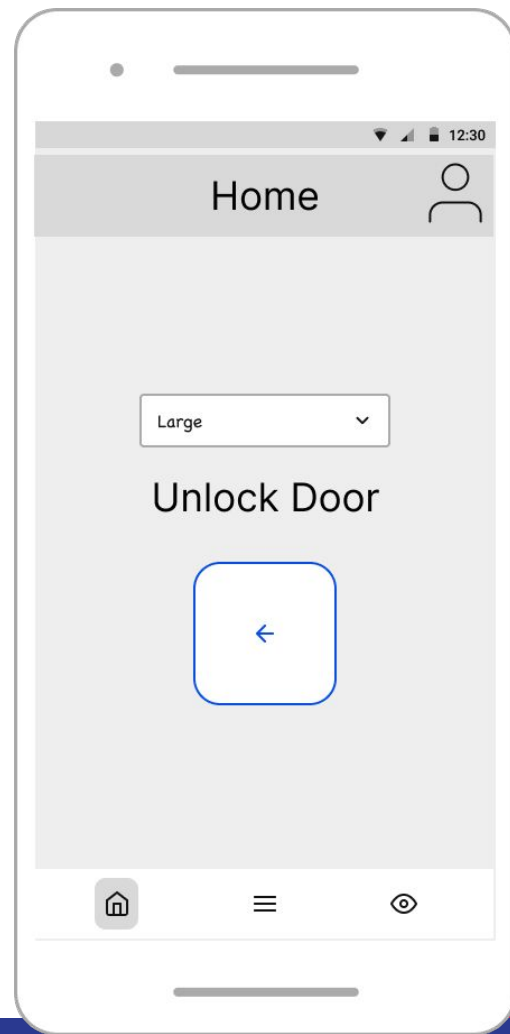


# Design Solution for Lightweight Facial Recognition System

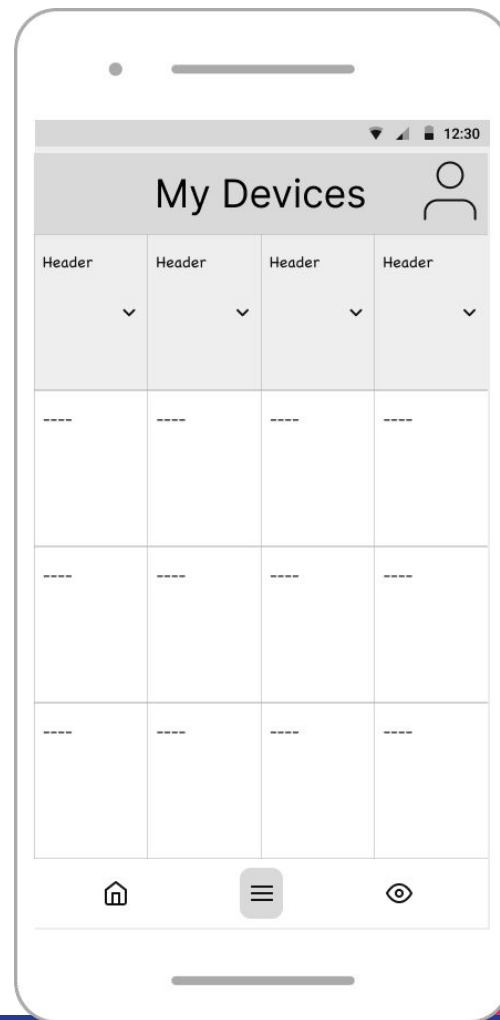
- Amazon Rekognition
- Raspberry Pi Solution
- Self Hosted solutions
  - [Ageitgey/face\\_recognition](#)
  - [InsightFace](#)
  - [DeepFace](#)



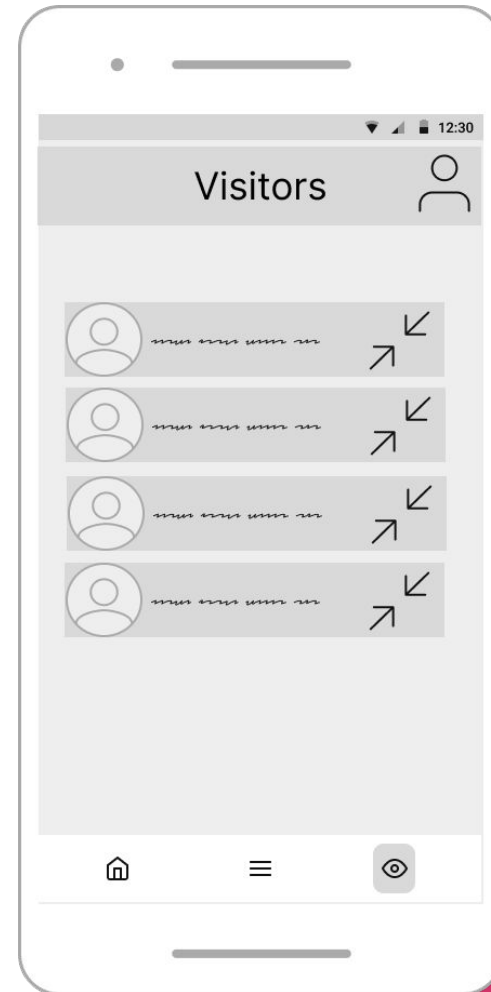
# UI Mockup: Home Page



# UI Mockup: My Devices



# UI Mockup: Facial Profiles



# Testing

## Major Tests

- Create An account
- Unlock a Door
- Receive A Push Notification
- Update A Visitor Profile
- View a Live Feed





Thank you. Questions?