Secure Door Lock
Milestone 1 Presentation

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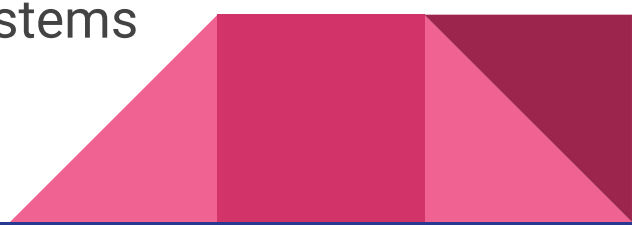
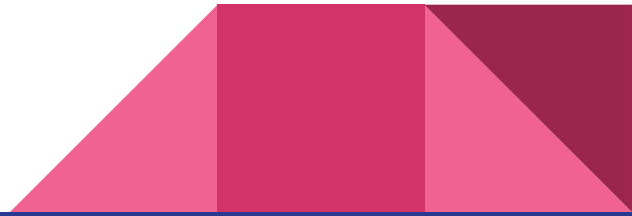
Milestone 1 Tasks

- 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

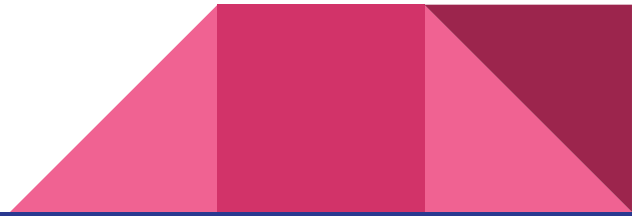


Setting Up a Jira Board

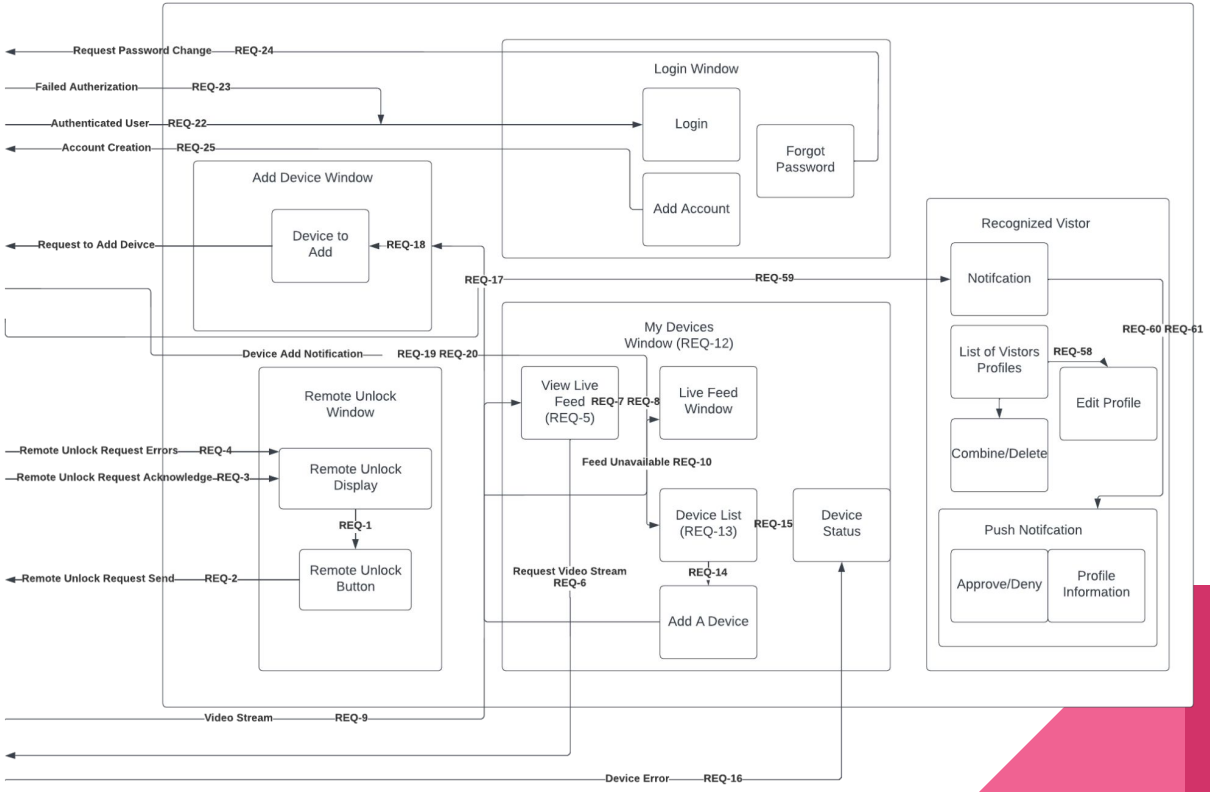
- Tasking was derived from itemized requirements
- High level requirements are categorized as User Stories
- Average expected work time requirement per User Story is 4 hours
- Each Itemized requirement is has lower level tasking that is generated

Requirements Documentation

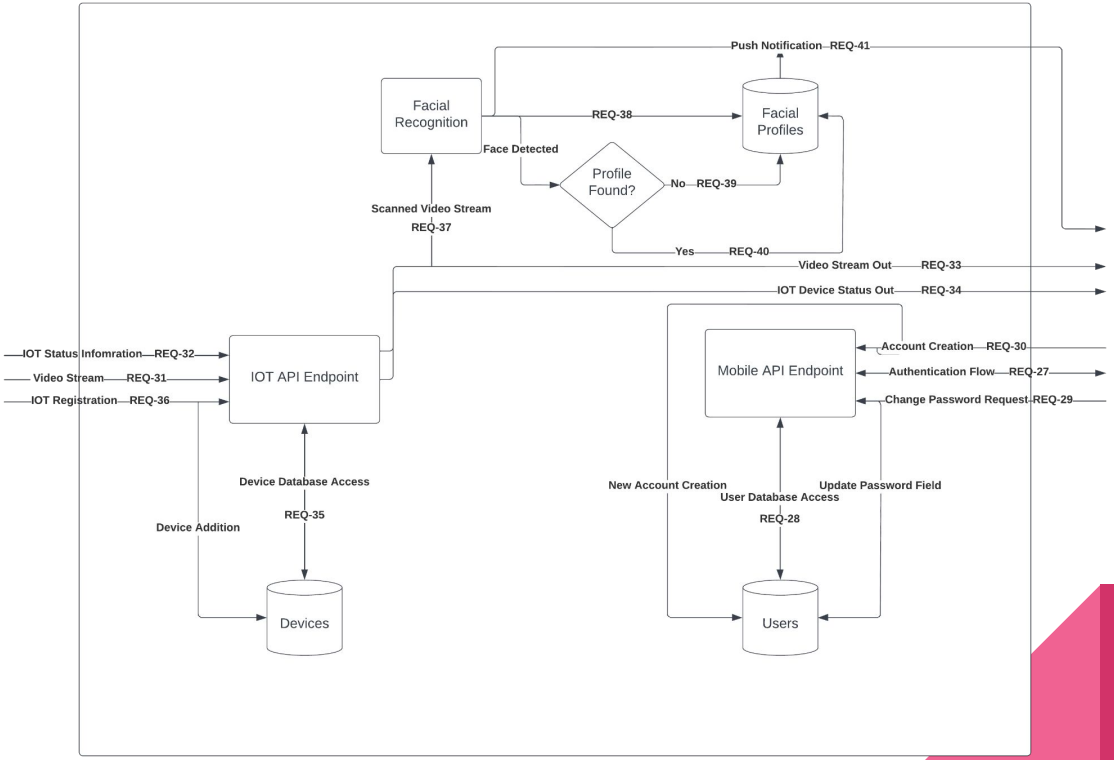
- Mobile Application
  - Remote Unlock
  - Remote Video Feed
  - User Authentication
- Server
  - Authentication
  - IOT Persistent Endpoint
  - Device Database
  - Facial Recognition
- Firmware
  - Unlock/Lock
  - Video Stream
  - IOT Adoption



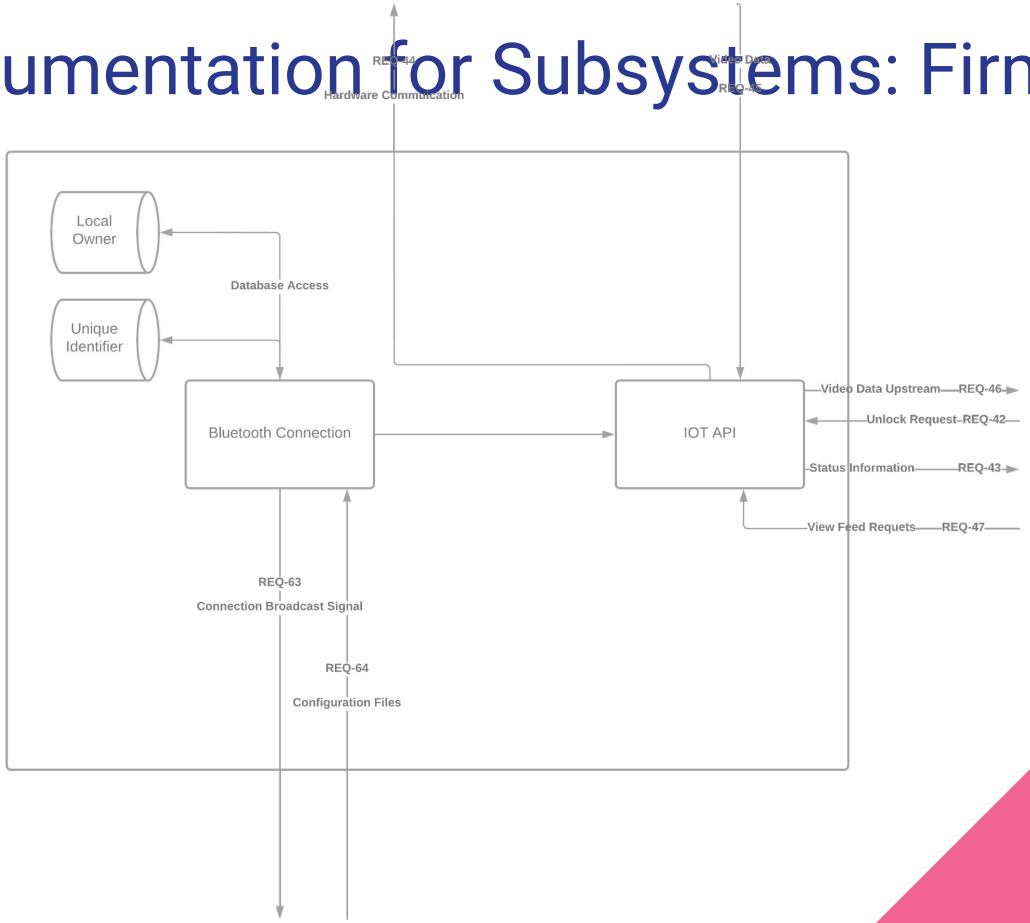
Design Documentation for Subsystems-Mobile App



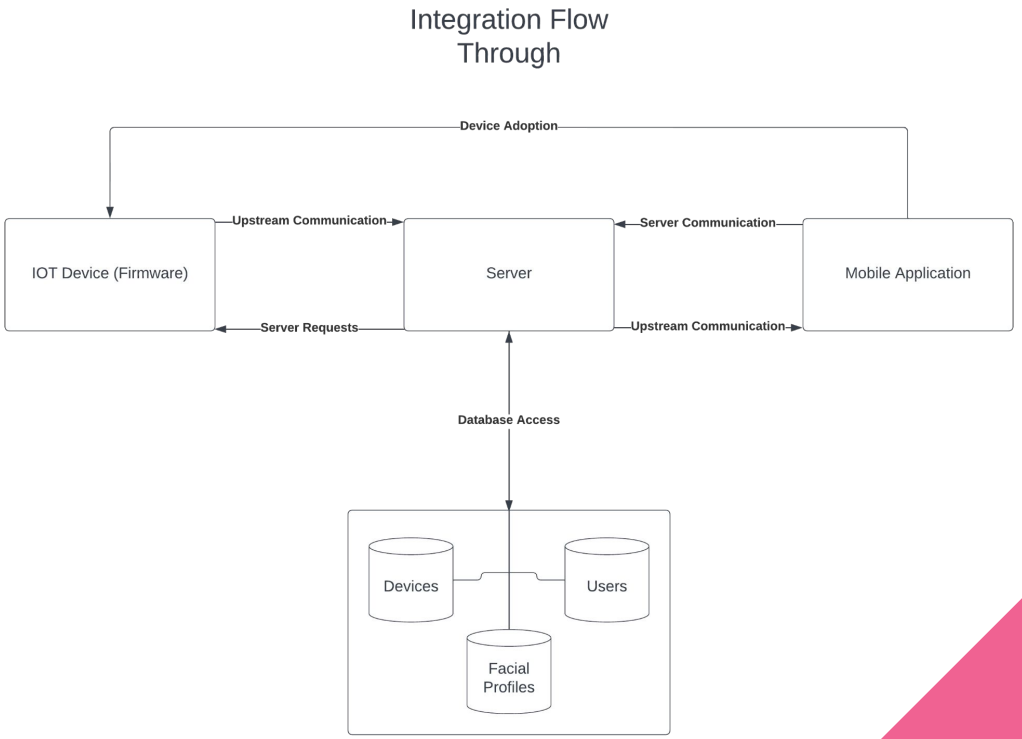
Design Documentation for Subsystems: Server



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

Thank you. Questions?