

Autonomous Door locking System

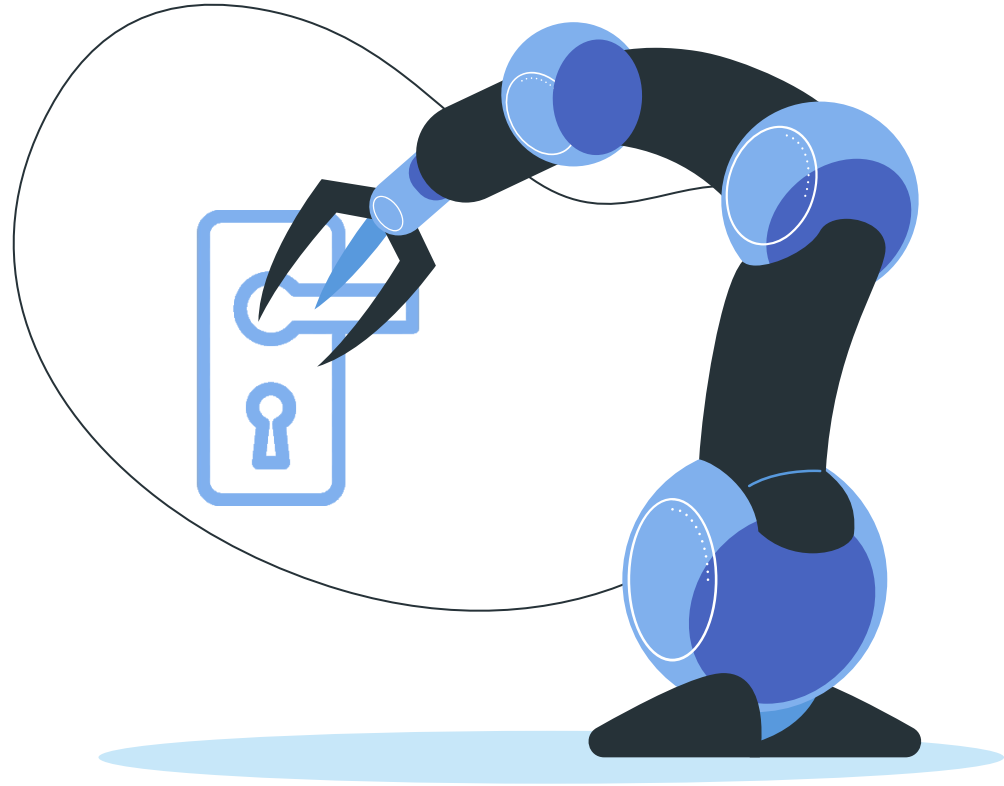


Table of Contents

1

Problem Definition

3

Progression & Plan

2

Proposing Solution

4

Scope



1

Problem Definition

Problem Definition

Lock/Unlock the door in Learning Lab with the help of an authentication server.

Technical Challenges

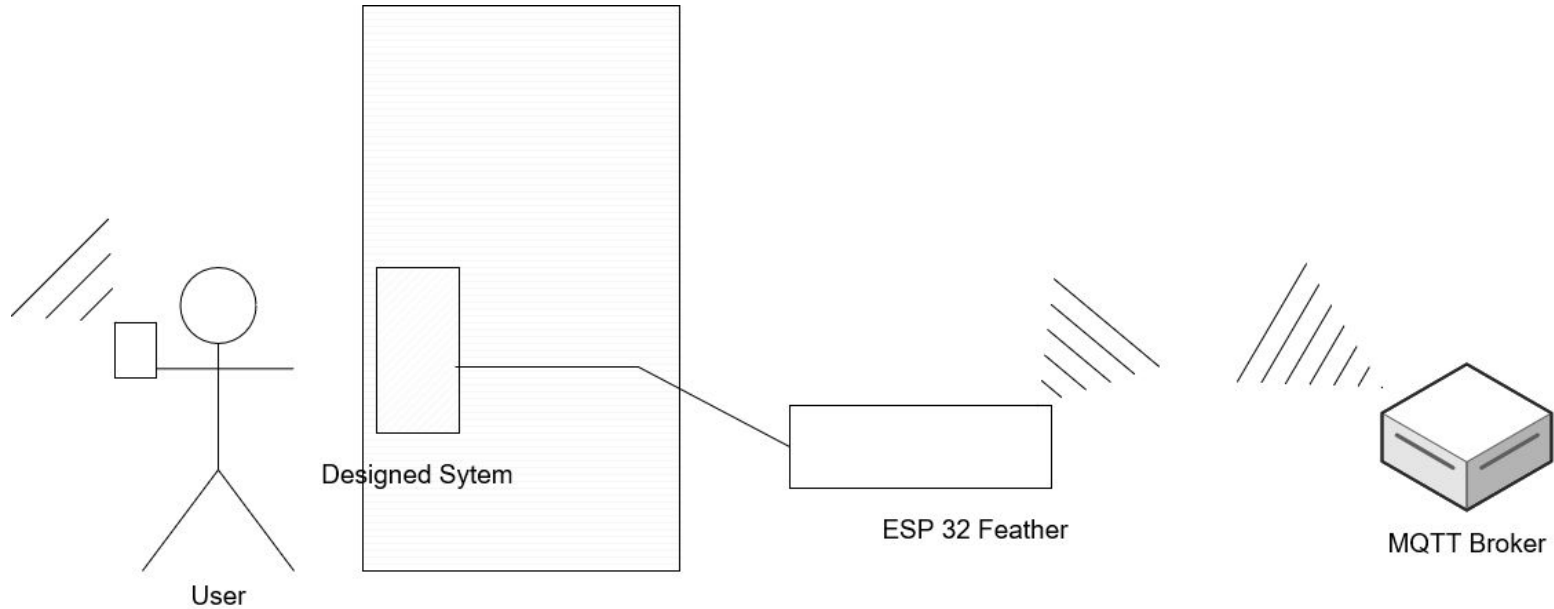
1. Detecting door state
 - a. Door position - no more necessary
 - b. Lock position
2. Motorised lock
 - a. Opening and closing - Opening mostly
3. Manual override - Quite easy with the right motor
 - a. Normal exit
 - b. In case of emergency



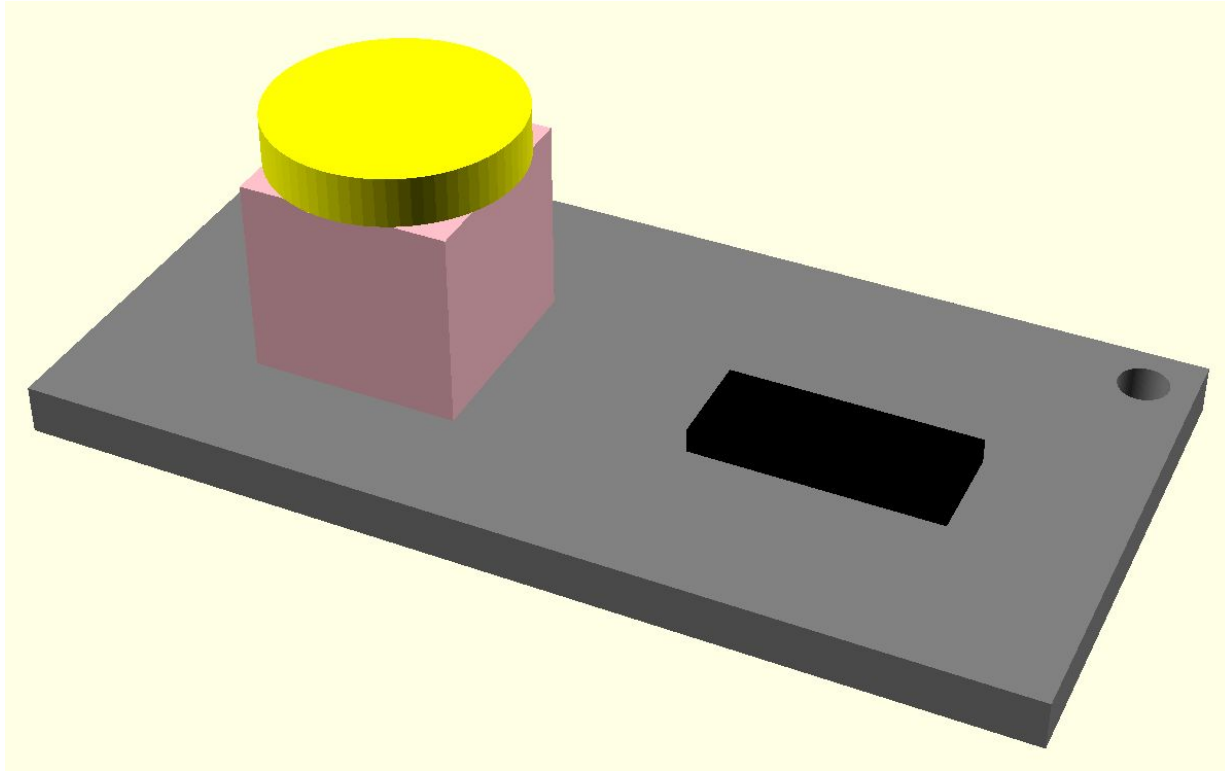
Technology Components

- Arduino ESP32
- MQTT server for authentication – Is it secure enough ?
- Step up motor
- 3D printing for the lock
- Metal detecting sensor for the lock position

High Level Architecture



Design for the system



3

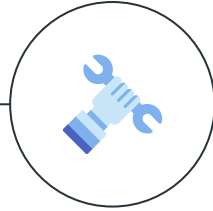
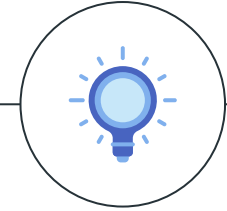
Project Plan



Project Timeline

Week 1-8

Research /
Brainstorming & Design

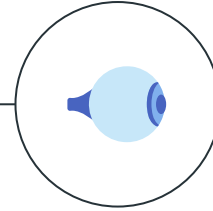
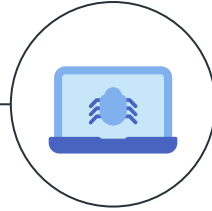


Week 9-12

Prototyping &
Iteration

Week 13

Testing & Finalize



Week 14

Final presentation

Project Timeline up to now

Done

- Choosing Motor + motor shield
- Main design

Ongoing

- Refractor design with actual motor
- Code limit on sensor

4

Scope



Inscope

- Detection of lock/open position of the door
- Proposed motorized locking system
- Manual Override mechanism
- Emergency unlocking

Outscope

- Door opening & closing
- Authentication process of personnel
- Detection of Accessing personnel

Thanks!

Do you have any questions?

Components of the Design

You can delete this slide when you're done editing the presentation

<u>Fonts</u>	To view this template correctly in PowerPoint, download and install the fonts we used
<u>Used and alternative resources</u>	An assortment of graphic resources that are suitable for use in this presentation
<u>Thanks slide</u>	You must keep it so that proper credits for our design are given
<u>Colors</u>	All the colors used in this presentation
<u>Icons and infographic resources</u>	These can be used in the template, and their size and color can be edited
<u>Editable presentation theme</u>	You can edit the master slides easily. For more info, click <u>here</u>