Modular Smart Home System

Fabian Schätzschock

Richard Krammer

November 5, 2024

Contents

1 Introduction

1.1 Our Goal

The goal of this Project is to provide a open source all in one smart home solution that comes with a modular design and enables the user to easily modify and extend the system.

2 Executive Summary

3 Requirements

3.1 Hardware

3.2 Software

3.2.1 Microcontroller

3.2.2 Backend

3.2.3 Frontend

4 Concept

4.1 Networking Structure

4.1.1 MQTT

4.1.2 ESP NOW

5 ESP32

5.1 Project Structure

5.2 ESP NOW

[1]

6 Raspberry Pi

6.1 Raspberry to ESP Communication

6.2 Database

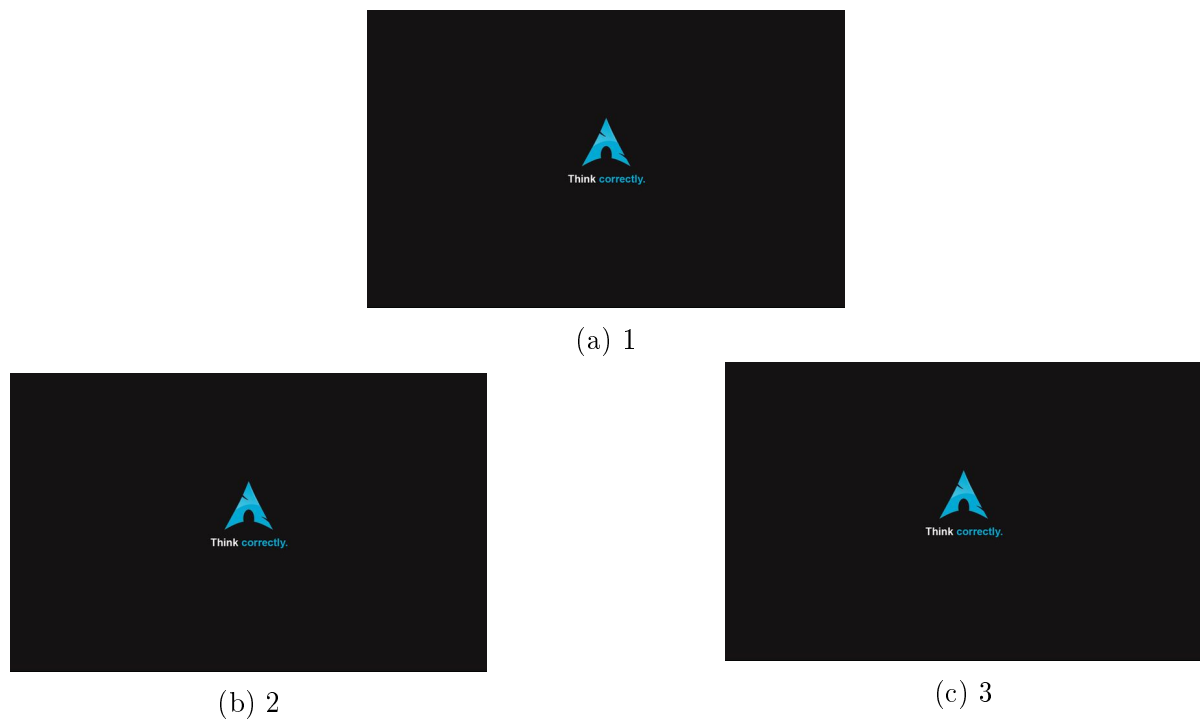## 6.3 Web Server

(a) 1

(b) 2

(c) 3

Figure 6.1: Figure

List of Figures

Bibliography

[1] Wikipedia. Wikipedia.