

# Modular Smart Home System

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23. Oktober 2024

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# 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

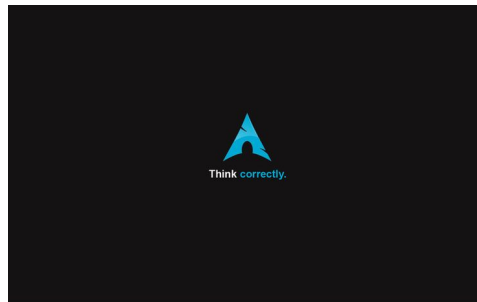
### 5.2 ESP NOW

# 6 Raspberry Pi

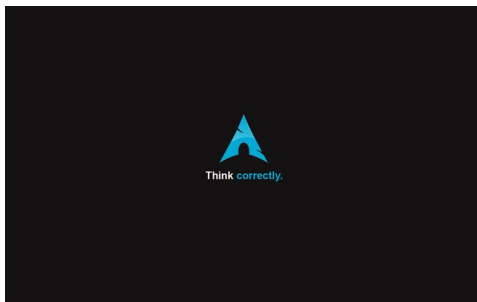
## 6.1 Raspberry to ESP Communication

## 6.2 Database

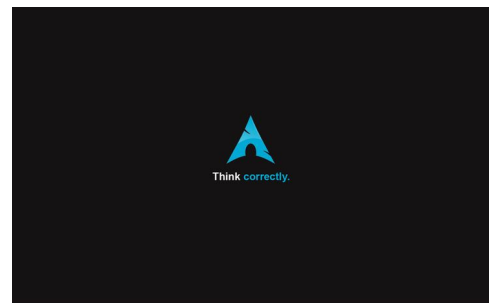
## 6.3 Web Server



(a)



(b)



(c)



# Abbildungsverzeichnis