**REAL TIME SYSTEM AND INTERNET OF THINGS FINAL PROJECT REPORT**
**DEPARTMENT OF ELECTRICAL ENGINEERING**
**UNIVERSITAS INDONESIA**

**IOT-BASED SHARED KITCHEN MANAGEMENT**

**ANDI FARHAN**            **2006521616**

# PREFACE

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Morbi ornare accumsan nisl sit amet sodales. Suspendisse sed dictum velit, in suscipit sem. Vestibulum egestas neque vel velit tristique, id venenatis nunc fringilla. Mauris condimentum diam consequat egestas tincidunt. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Vivamus semper pharetra commodo. Integer hendrerit ultricies lacus. Nullam id magna sed risus placerat luctus sed at mauris. Curabitur ligula urna, pharetra eget mi sit amet, sagittis feugiat magna. Curabitur ex nisl, eleifend et mattis sit amet, condimentum non nisi.

Donec at iaculis leo. Integer congue sed lacus suscipit iaculis. Nulla a augue ut sapien rutrum consectetur. Sed ac dignissim lorem. Maecenas hendrerit nisl a metus posuere, vel vehicula metus eleifend. Mauris blandit, dolor nec malesuada tempor, purus nibh aliquet nibh, at faucibus leo felis a nisi. Donec pharetra leo risus, in vestibulum dui laoreet in. Nulla facilisi. Etiam nec consequat justo. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aliquam erat volutpat. Etiam pharetra eleifend hendrerit.

Maecenas ultrices ac felis et faucibus. Suspendisse cursus eget neque non tempus. Integer id nunc blandit, mollis risus ut, rhoncus erat. Donec eleifend porttitor justo, ut suscipit ipsum fermentum eget. Proin lacinia erat et cursus suscipit. Morbi ut neque sit amet magna posuere tempor sed at urna. Ut at faucibus libero. Sed ut massa dui. In sit amet dolor fermentum, condimentum lorem interdum, aliquam metus. Aenean tincidunt elit et mollis consectetur. Nam a elit et leo vulputate gravida convallis sed lacus.

Depok, December 10, 2024

Andi Farhan

# TABLE OF CONTENTS

# CHAPTER 1

# INTRODUCTION

## 1.1 PROBLEM STATEMENT

Oftentimes as a University of Indonesia student—especially for those who are from outside Pulau Jawa, the students must rent a place to stay to enable easy daily commute or walks to campus. One option is to rent a room in a *kosan*—a larger house consists of many rentable bedrooms that are affordable to students. Being in a *kosan*, kitchen is always a shared facility between everyone who lives under the same roof, the tenants and the owners or the ones they hire for maintaining the *kosan*. Despite the number of rooms across multiple floors, oftentimes there is only one kitchen to be shared among the occupants, which most of the time is located on the first floor. The effort that was made to walk to the kitchen with hands full of utensils and ingredients sometimes was for nothing when we arrive and see that the kitchen is occupied. In this project, we will try to prevent such efforts from being wasted.

## 1.2 PROPOSED SOLUTION

We propose a mechanism where the occupants could get in a queue to use the kitchen remotely from their own rooms. Since interacting with random people is uncomfortable for most people, the mechanism preferably doesn't include human-to-human interactions. Such a mechanism can be made by implementing a queue system where the occupants can queue to use the kitchen. Since a deployment of actual server might be overkill, IoT devices are preferred here. Using IoT devices makes it possible to streamline the mechanism more by enabling the user to queue with a simple button press.

## 1.3 ACCEPTANCE CRITERIA

The acceptance criteria of this project are as follows:

1. The system must be able to determine is the kitchen currently being used or not,
2. The system must be able to determine whose turn is next to use the kitchen when the current person finishes,

3. The system must enable users to queue remotely from their own room with a button press,
4. The system must notify users when it is time for their turn to use the kitchen,
5. The system must provide a way for users who are currently using the kitchen to signal that they have finished using the kitchen and it is time for next person's turn.

# REFERENCES

[1] "ESP32 Pinout Reference," Last Minute Engineers, [Online]. Available: https://lastminuteengineers.com/esp32-pinout-reference/. [Accessed 2024 December 8].

[2] N. Kolban, "GitHub - nkolban/ESP32_BLE_Arduino: The library source for the ESP32 BLE support for Arduino.," 22 August 2024. [Online]. Available: https://github.com/nkolban/ESP32_BLE_Arduino. [Accessed 9 December 2024].