REAL TIME SYSTEM AND INTERNET OF THINGS FINAL PROJECT REPORT
DEPARTMENT OF ELECTRICAL ENGINEERING
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IOT-BASED SHARED KITCHEN MANAGEMENT

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PREFACE

This project is far from finished. It barely even counts as started. Even though this assignment was given one week earlier, I barely created anything. This is possible due to the amount of workload from other classes or subjects that affects the amount of effort I could put out to finish this, mostly in the form of health issues.

Depok, December 10, 2024

Andi Farhan

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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

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