

CHAPTER 1

INTRODUCTION

1.1 Background

Muhammadiyah University of East Kalimantan (UMKT) is a combination of STIKES Muhammadiyah Samarinda and STIE Muhammadiyah Samarinda. This campus often holds international collaborations, you know Quipperian, such as the collaboration between the Faculty of Health and Chulalongkorn University Thailand, as well as the double degree program between UMKT and Kingston University and several other campuses abroad.

At present the number of vehicles such as cars is increasing, as a result the more vehicles there are, the more crowded the car park area is. The problem of convenience is of great concern to car drivers. The manufacture of fully automatic equipment that overrides the human role as a subject of work has been found. Then a tool can be designed in the form of a parking system based on ultrasonic sensors.

And this problem affects parking attendants who have difficulty in directing, managing 4-wheeled vehicles in the area in front of Building E, and sometimes students or lecturers are not aware of the existence of a sensor-based parking system technology that can assist in directing vehicles when they want to park his vehicle.

With the existence of an IoT-based parking system using ultrasonic sensors, this can overcome the problems of parking attendants in managing vehicles when they want to park in the parking area with the help of an IoT-based system using this ultrasonic sensor, so a system is created to anticipate the occurrence of irregular parking areas based on IoT using ultrasonic sensor, for that a proposal must be made as a condition.

1.2 Formulation Of The Problem

From the background that has been described, the formulation of the problem can be taken as follows:

1. How to design a system that can detect parked vehicles properly?
2. How is the performance of an IoT-based system using ultrasonic sensors in determining vehicle parking locations?
3. What is the accuracy of the ultrasonic sensor generated by the Arduino Uno IoT-based system?
4. How can the ultrasonic sensor provide notifications via Blynk to cellphones?

1.3 Objective

From the formulation of the problem that has been described, the following objectives can be taken:

1. To find out how to design an IoT-based parking system using ultrasonic sensors using Arduino uno
2. To find out the parking system based on ultrasonic sensors using Arduino uno can provide a warning when you want to park the vehicle
3. To find out the accuracy of the ultrasonic sensor produced by an Arduino uno-based system.
4. To find out about this sensor, you can provide notifications to cellphones via the Blynk application

1.4 Problem

1. Assembling a parking system prototype based on an ultrasonic iot sensor using Arduino uno Dip, HC-SR04 ultrasonic sensor, LCD, buzzer, and project board.
2. Use of sensors to measure the accuracy of the distance to the vehicle and provide notifications to SmartPhones via the Blynk application