UNIVERSITI TEKNOLOGI MARA

CAWANGAN JOHOR KAMPUS PASIR GUDANG

FINAL YEAR PROJECT 2 (EEE 368)

REPORT

AUTOMATIC DOOR LOCK AND ALCOHOL SENSING ALERT USING IOT

MUHAMMAD NAZHAN AZRI BIN RAZALI

(2021808002)

J4CEE1125C

DIPLOMA IN ELECTRICAL (POWER) ENGINEERING

SUPERVISOR:

DR NOR DIYANA BT MD SIN

ABSTRACT

Most cars these days have less safety features installed. This causes many accidents that occur such as car theft cases. Furthermore, many accidents also occur as a result of the negligence of drunk drivers. This is very worrying in terms of the safety of drivers in this country. So, Automatic Door Lock and Alcohol Sensing using IoT was created to add safety features for a car so that cases of car theft and road accidents can be reduced. This safety feature uses an Arduino UNO as a microcontroller that controls the alcohol sensing alert by detecting gas through the gas sensor and producing outputs for solenoid. While HC-05 bluetooth module becomes a microcontroller to control the smart door lock system by giving the instructions through an application on a smartphone and issuing an output to a solenoid. Through the gas sensor, users can detect the level of intoxication of a driver and can prevent the driver from driving in dangerous conditions. While through a smartphone, a vehicle owner can refuse to allow his car to be stolen. With this, cases of vehicle theft and cases of road accidents due to drunk drivers can be reduced.

ACKNOWLEDGEMENT

First and foremost, I wouldn take this opportunity to express my gratitude to Allah SWT for helping and guiding me in completing my final year project. None of this is possible without His Blessing. There were many people who assisted me in completing this Final Year Project. I would like to convey my heartfelt gratitude and big thanks to my supervisor, Dr. Nor Diyana Bt Md Sin for trusting me to complete this task.

Next, I would like to thank my family, who have been so generous with their love, support, and encouragement over the last year. Furthermore, I would like to say that the Final Year Project is the most effective platform for students to learn and build their confidence in making something based on what we have learned as electrical engineering students. In fact, there is no doubt that having all the support and encouragement from the individuals above will always remain a fond memory in our hearts. May God bless them.

TABLE OF CONTENT

CHAPTER 1

INTRODUCTION

1.1 Project Overview

This project is about an automatic door lock that uses the concept of IOT. The important thing in this project is the level of safety that this product can conduct to prevent the thief from stole the car. It is controlled using MQ-3 gas sensor. The gas sensor will detect the intoxicant of the user's breath to declare if the user is in drunk condition or not. Before the gas sensor active, the permission is needed from the smartphone to allow the door of the car to open

For the permission from the smartphone, the HC-05 bluetooth module is used to connect the system to the user's smartpone. In the owner smartphone, the application will show the permission to open the car door. Overall system provides the advantage in aspect of safety while the user is on or off the car

1.2 Objective

1. To design a smart arduino software system to lock and unlock car door by using Arduino IoT
2. To design a system for detection of alcohol alert safety
3. To implement the IoT in safety for smart lock and unlock car door system

1.3 Project Scope

Iot-based smart system door locks generally work when the door is tried to open then a notification will be sent to the Arduino IoT Cloud which is an application in the car owner's smartphone. The car owner will determine to allow the door to be unlocked or remain locked via the app. If the owner allows the car to be unlocked, the gas sensor will turn on to detect the intoxicant of the user's breath before solenoid of the car is unlock. However, if the car owner does not allow the car door to be opened, the sensor will remain off.