Universiti Teknologi MARA

Home Alarm Security System using NodeMCU and Telegram Bot

Muhammad Amirul Hafiz Bin Mat Hussin

**Thesis submitted in fulfillment of the requirements for
Bachelor of Computer Science (Hons) Data
Communication and Networking Faculty of Computer
and Mathematical Sciences**

July 2022

SUPERVISOR APPROVAL

Home Alarm Security System using
NodeMCU and Telegram Bot

By

Muhammad Amirul Hafiz Bin Mat Hussin
2018413984

This thesis was prepared under the supervision of the project supervisor, Madam Rafiza Binti Ruslan. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfilment of the requirements for the degree of Bachelor of Computer Science (Hons) Data Communication and Networking.

Approved by

…………………………….
Rafiza Binti Ruslan
Project Supervisor

JULY 21, 2022

STUDENT DECLARATION

I certify that this report and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

……………………………………………….
MUHAMMAD AMIRUL HAFIZ BIN MAT HUSSIN
2018413984

JULY 21, 2022

ABSTRACT

In order to safeguard people's property from danger, home security is a crucial problem. At the moment, school breaks and other public holidays tend to be when house burglaries rise. The main purpose of this project is to develop and create security system using PIR motion sensor the detect any movement from living bodies which also consisted of buzzer that intended to the potential intruder and Node MCU to send an alert in form of notifications via Telegram Bot to the owner. The prototype was evaluated using functionality testing and network testing. For the functionality testing, the prototype is tested 3 different tests to see if the components worked as intended. The results the functionality test outcome is all the components are working as intended. For network testing, the prototype is put into several distances to test the response time of the network. The results for network testing yield the prototype workings perfectly with in the range predicted. The outcomes showed how practical, fast, and simple to operate the home security system was. Therefore, when the system detects an intruder in the property, the home security system may assist the home owner in taking prompt action, such as contacting the authorities. For the future works, the system can be improved by adding extra devices such as camera or improving the alert system by making informing the authorities automatically. Furthermore, the flexibility of the prototype can increase by integrating gears for movement to the prototype as it can add the radius of the sensor.

TABLE OF CONTENTS

Contents