Universiti Teknologi MARA

Home Door Lock System Using Android Based: Telegram

Nur Syafinaz Abdullahtip

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

January 2020

STUDENT DECLARATION

I certify that this thesis and the project to which it refers is the product of my own work and that 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.

.....

NUR SYAFINAZ BINTI ABDULLAHTIP

2017539985

JANUARY 3, 2020

ABSTRACT

Traditionally, user used door knob, padlock or latches to open a home door. Therefore, traditional method required human movement because user need to go to door to lock. However, sometimes a user has forgotten to lock the door in an urgent situation. Currently, there were many types of door knob but have same infrastructure. So, strangers can easily duplicate or get the spare key from door lock shops. Thus, the first objective of this project is to develop home door lock system also known as HDLS which were automated system which remove human movement to control the door. In order to develop HDLS, hardware involve were Raspberry Pi Zero WH which act as a microcontroller, Maker pHAT, Maker drive, Brushed Dc Geared Motor and SD Card. In addition, HDLS control the door via Telegram application. The telegram has been configured with password to allow only authorized user can used the system. Second objective is to evaluate the home door lock system based on accuracy test and bandwidth usage. There were four experiments were conducted. Experiment 1was functionality testing which was tested on the authentication of HDLS by different users. As a results, HDLS has provide a secure system which only allow authorized user to access the door. Then, Experiment 2 was for network testing by evaluating response time of HDLS to open the door. The results shows that HDLS can response around 05 seconds. Followed by Experiment 3 which tested on bandwidth usage of HDLS according to capacity number of users. Moreover, there are no significant results of bandwidth usage when more than 4 user used the system. Lastly, Experiment 4was conducted on user usability testing. It is found that 80% of respondents agreed that HDLS is very helpful. In conclusion, this research project proposes a new home door lock system using Telegram.

TABLE OF CONTENTS

CHAPTER FOUR: DESIGN AND DEVELOPMENT

CHAPTER FIVE: TESTING AND ANALYSIS