FACULTY OF ELECTRICAL ENGINEERING

UNIVERSITI TEKNOLOGI MARA

PULAU PINANG

FINAL YEAR PROJECT 2 (EEE 358):

"ELECTRONIC COMBINATION LOCK

DOOR SYSTEM"

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In the name of Allah

Most Gracious Most Merciful

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Last but no means least, the keyless door entry by using this electronic combination door lock system is designed to ensure the safety home and to avoid house breaking cases is happened in their home.

ABSTRACT

The basic requirement of security can be achieved by designing electrical or mechanical locks that are designed using a key, but a lot of keys are required to lock a big area. Moreover, the used of traditional locks are heavy and not protective where it can be broken down easily by using some tools. Therefore, this keyless door project is designed to facilitated consumer and their house is more secure from any home burglary. This project used a microcontroller as a control unit that has been programmed. The program is writing in mikroC software and testing it in Proteus software to ensure the circuit performances achieved the project objective before prototyping process is performs. PIC microcontroller is used to make it low cost compared to the other microcontroller. This project is suitable for all levels of income because the project is cheaper compared to similar projects that are on the market now. Furthermore, it used a code that entered through keypad to make it more flexible to security system. It provides users with an efficient and reliable security system that supports the use of an electronic keypad arranged to send signals to the control unit which is PIC16F887 microcontroller. This control unit either activates the port to which the green LED and motor driver is connected when the correct password is entered or activates the port to which the red LED and buzzer alarm is connected when the wrong Password is entered. Overall design and implementation of the prototype is fully functional and user friendly. The perfect project prototype was placed outside the door and ready to be use.

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CHAPTER 1

INTRODUCTION

1.1 Background

The Electronic combination door lock system using PIC is a basic access control system which has an ability that allows the rightful user to display platform to any property that requires simple password protection. Electronic combination door lock system is a type of lock in which a sequences of numbers is used to open the lock. This type of lock uses a numerical code for authentication where the correct code must be entered in order for the lock to deactivate. The lock can be used with an outdoor gate or normal door. The functionally of this lock is implemented in software. When the correct code is entered it will move the stepper motor. This motor can operate a power to open magnetic lock. The PIC16F887 microcontroller is used to ensure low costs. Possible applications may include such as vehicle protection, electronic safes and powered door locks. With a little external hardware, the featured system may easily be used to disengage an electric door strike or similar system.

1.2 Problem Statement

Nowadays, house breaking cases is the top crime happened in our country. This is due to the negligence of people in their lives. So the problem statement occurs because the people locking a door using traditional key, it is easily to loss the key and lock can be tampered or it can be duplicated. Thus, the solution of this problem statement, the whole set of locking mechanism must be change to system security password which is using electronic combination door lock system. In this project, security guard is hired to ensure the safety home by using this application. This application running based on program writing. So, the user must have their own identity number as their password to unlock the door.