VAULT'S FLOOR SECURITY SENSOR WITH RFID ACCESS USING MICROCONTROLLER

This project is presented as fulfillment of the award of the

Bachelor in Electrical Engineering (Honours)

Of

UNIVERSITI TEKNOLOGI MARA

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A report submitted to the Faculty of Electrical Engineering Universiti Teknologi MARA in particular fulfillment for the award of Bachelor in Electrical Engineering (Honours).

ACKNOWLEDGEMENT

In the name of ALLAH S.W.T, the Beneficent, the Merciful. Thanks to Allah who has given me the strength and ability to accomplish the final year project and thesis successfully. Peace be upon our Prophet Muhammad S.A.W, who has given light to mankind.

With this opportunity I would like to express a special gratitude to my supervisor Miss Rafidah binti Rosman who deserves most credit for her patience, inspiration and advice in guiding me towards the completion of the project and report.

A special dedication is to be given to my family for their patience, financial support, moral support and advices that made this remarkable work possible.

A special appreciation to System Consultancy Services Sdn Bhd where I went for internship for they had given me the utmost exposure to the application of embedded systems. Hence, the exposure has given me the opportunity to expose myself in foreseeing things to come in the industry.

My sincere appreciation to my close friends Shamsul Anuar Mohamed, Aiman Johari, Zaharah Hairuzi and Nadiah Muhammad for giving me the support and motivation during the completion of the project.

Last but not least, all of my batch mates for they have always given me challenging moments and environments in completing the workpiece.

May Allah bless and reward all of them for their contributions and generosity.

Mohd Firdouz Bahtiar

ABSTRACT

Precious items like money, jewelry and expensive antiques are usually kept in a vault or at home. Whether it is a bank or at home, security has been the number one priority to keep each and every item safe from theft. Although, most hi-tech security systems are expensive, the fact that it actually runs on simple mechanism such as sensors for input and some interface to communicate with the consumer i.e: an LCD display, makes it probable for a low cost security sytem to be produced with the same hi-tech effects.

A solution to these problems is to design an embedded system that provides an application of RFID for access and a photo sensor for the guarding system that runs on low power and at a lower cost to compare to the commercialize security sensor. The design is just a module to demonstrate the basic function of the floor security sytem that will be observed by the PIC16f877a microcontroller by Microchip.

The embedded system automation will be made at such a low cost but demonstrates the same functionality as the commercialize security system. This paper describe an application of RFID for access whereby the system provides security surveillance towards a certain designated ground or floor.

Users will be given the RFID smartcard for the access pass identity, the designated floor will then be armed with a source of light (laser pointer) and an LCD as indicator should any message will be given to the user. The system uses a microcontroller for the simple algorithm of the signal processing. The algorithm for the RFID access and the security sensor was performed on a commercial software to control the microcontroller and interfacing circuits.

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INTRODUCTION

1.1 INTRODUCTION

The number of entrepreneurs involved in commercialized security system increases every year due to the demand of security for both homes, industry and banking.

Two types of businesses involved in the security industry are the commercial and small business. For commercial purposes, usually more than 400 users can be registered unto the system whereby system can store large database for users identity storage. Small business refers to home access system usage. Somehow, these systems are usually monopolized by the commercial business too.

The importance of security has been prioritized for safety purposes. Levels of security has been increased eventhough a home, office or a parameter has been guarded by human security guard. Commercial security equipment is designed for commercial purposes and the level of complexity of the system is very high.

Therefore, high investment and cost incurred on equipment and devices is required. Precise manual guide and knowledgeable, skilled people are required to operate the machine.

Catering to the need of private security usage, a simpler security system is proposed to provide a cheaper but effective security by high technology application of access to an area that can be applied to vaults, homes, buildings or any parameter that is decided for the system to be applied to.