

UNIVERSITI TEKNOLOGI MARA

**AUTOMATED RFID-BASED HOME LOCK AND
MONITORING SYSTEM**

MUHAMMAD AFIQ IRFAN BIN BAHARUDDIN

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**Centre for Electrical Engineering Studies
College of Engineering**

ABSTRACT

Automated RFID-based Home Lock and Monitoring System is a system that is focusing on enhanced security in daily environment, particularly in residential setting, by proposing and implementing an RFID door lock system using Arduino technology. The aim is to improve the shortcomings of traditional lock systems such as vulnerability to missing by introducing a more secure and efficient method of access control. The RFID door lock system seeks to offer faster access while ensuring greater safety by utilizing RFID technology to verify and grant access only to individuals possessing the correct RFID tags. The overall goal is to create a robust security system for restricted areas that is both reliable and trackable using Arduino as the microcontroller. This whole system is designed for the residents who had a lot of buglar cases in their environment. Residents' safety is promised by this little and creative hardware ensemble.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Presently, security systems are essential in preventing unauthorised persons from entering a guarded area that may include both physical and intellectual property. Different door locks, including mechanical and electronic locks, are created to meet fundamental security standards. Basically, unauthorised individuals can easily bypass these locks, allowing them to access guarded areas.

The need for an automatic access control system has arisen as a result of the security risks that many organisations are currently facing such as unsafe environment and poor security among the resident in some places, an automatic access control system is now required. So, the mechanism at the door has been built to ensure that only authorized individuals can enter their own home. Throughout the organization, the system can be installed at various entries to monitor movement and keep track of who enters areas that have been prohibited while also prohibiting unauthorized people from doing so. Installation at key gates is not the only place it can be found. Several automatic access control methods are employed in security systems, including barcode, magnetic stripe, and RFID. Radio-frequency identification, or RFID, is one of the aspects of access control that is currently developing the quickest. There are many uses for RFID technology, which outperforms traditional automatic identification systems, including tickets, animal identification, electronic immobilization, industrial automation,