



UNIVERSITI TEKNOLOGI MARA

**THE SENTRY OF DOOR ALARM
SYSTEM**

MUHAMMAD NAQUIDDIN BIN MOHD AMIN

Thesis submitted in fulfillment
of the requirements for the degree of
Diploma of Electrical Engineering (Electronic)

Faculty of Electrical Engineering

FEBRUARY 2024

ABSTRACT

The final year project introduces a cutting-edge security door alarm system tailored for college campuses, utilizing advanced technology to bolster safety measures. The core components of this system include an Arduino microcontroller, a camera module, and device notifications, synergistically employed to thwart unauthorized entry and enhance security protocols. The primary focus of this project is to contribute to the creation of a secure environment for both students and staff, ensuring their safety through the provision of real-time alerts and visual evidence in the event of a security breach. The project aims to accomplish several key objectives, including the design and implementation of the security door alarm system, the integration of the Arduino microcontroller and camera module, and the establishment of a seamless notification mechanism. The methodology involves rigorous testing, fine-tuning, and validation of the system's functionality. By systematically addressing these components, the project endeavors to yield tangible results that demonstrate the effectiveness and reliability of the implemented security measures. The report comprehensively details the project's objectives, providing a roadmap for its execution, and elucidates the methodology employed in achieving these goals. Additionally, the document underscores the potential benefits of deploying such a security system in college campuses, emphasizing the significance of proactive security measures in fostering a secure educational environment. Ultimately, this project endeavors to contribute to the broader discourse on campus security, offering a tangible and innovative solution to safeguard the well-being of individuals within educational institutions.

ACKNOWLEDGEMENT

First of all, I would like to thank my supervisor, Madam Norbaiti Binti Sidik for guiding me in the beginning of the project until the end. Next, thank you for my family for always supporting and praying for me. Lastly, I extend my thanks to my friends for their endless supports in order to complete my project.

TABLE OF CONTENT

	Page
FRONT PAGE TITLE	i
AUTHOR'S DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	v
TABLES OF CONTENT	vi
LIST OF TABLES	viii
LIST OF FIGURES	ix
CHAPTER ONE: INTRODUCTION	1
1.1 Research Background	1
1.2 Problem Statement	1
1.3 Objectives	2
1.4 Scope of Work	2
CHAPTER TWO: LITERATURE REVIEW	3
2.1 Introduction	3
2.2 The previous existing project	4
CHAPTER THREE: RESEARCH METHODOLOGY	6
3.1 Component Used	6
3.1.1 Hardware	6
3.1.2 Software	10
3.2 Block Diagram	11
3.3 Flowchart	12

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Most people place a high priority on security, and protecting our homes and businesses is essential. Installing a security door alarm is one of the best ways to safeguard your home. However, a simple alarm might not be sufficient to offer the all-encompassing security we require in today's world. Because of this, we constructed a project that improves security.

With the help of an Arduino security door alarm, a camera, and device notification, our project is enhanced. In order to build a comprehensive security system that offers real-time alerts and visual evidence in the event of a security breach, this project uses the strength of the Arduino microcontroller along with a webcam module, Wi-Fi connectivity, and other components.

With just a few components and some simple programming, you can create a reliable security door alarm that detects when someone opens a door, triggers a camera to capture a picture or video, and sends a notification to your smartphone or computer with the captured visual evidence.

1.2 Problem statement

Incidents of theft and break-in often happen especially in colleges and dormitories. This is because there is no security system in the house in case of theft. In addition, thieves also steal quietly without being noticed by neighbors and people around because there is no alarm system. In addition, there is no sophisticated CCTV capable of notifying the home owner that the house has been broken into. Therefore, this incident can cause discomfort for the owner of his house.