

**UNIVERSITI TEKNOLOGI MARA**

**INTRUDER DETECTION SYSTEM  
FOR GATED COMMUNITY**

**SYAFI BIN FAISAL**

**BACHELOR OF COMPUTER SCIENCE (Hons)  
DATA COMMUNICATION AND NETWORKING**

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## **ABSTRACT**

The gated community in neighbourhood is popular choice for people to stay, and it comes with security guards to protect the community. There some problem regarding this security system because security guards only cannot monitor all the houses in the same time and break-ins still happen. The development of an Intruder Detection System for Gated Community is a potential solution for all homeowners in gated communities who want to improve the security of their surroundings. This system is developed in Arduino Uno by using C++ languages and Arduino platform. The main function of this device is it can send a website notification to the security guard and the homeowner and create a short message as a warning and a photo to telegram. If a crime occurs, the security guard can be more focused, and the house owner can be prepared. A security guard can also keep a better eye on the house and its surroundings. When the alarm system is triggered by movement, the homeowner and security guard will receive an alert. Hardware design and software development are the two aspects of this project. The system is built with an ESP32-CAM, Arduino Uno, jumper and PIR sensor. Telegram is utilized in this project to make it more functional, and it is recommended in wireless communication because of its effectiveness and ease of use for sending messages, making calls, and sending pictures. Telegram is utilized due to the growing popularity of mobile phones. The Arduino Compiler is used to program the microcontroller to enable the functions of detecting, tracking, alarm, and alert indicator for detecting theft using a sensor or sending a message to the house owner and security guard.

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# CHAPTER 1

## INTRODUCTION

This chapter will be explaining and provide a quick overview of the project's background and other relevant components for the proposed project.

### 1.1 Background of Study

For the lifestyle, Malaysians nowadays prefer to live in gated communities. There are various reasons why Malaysians choose to live in a house that was monitored by security guards, including the fact that it is safer than living in an area that is not secure at all, as well as the fact that it provides a more comfortable feeling and makes Malaysians feel more protected. The guard and gated communities in Malaysia show more high demand regarding all the Malaysian likely choosing a more secure place to live (Z. Shamsudin, E. Y. Ying, A. J. Omar, 2016). The residents in gated neighbourhoods purchase or choose gated communities because of a big reason which is safety and security. This is because house buyers value all the benefits in gated communities, especially the security environment (Teck Hong Tan, 2015).

In this modern era, people will live their lives according to their dreams and enjoy their lives more comfortably, allowing them to buy as many things as they desire. However, not everyone has been blessed in this way, and some people still need or have the urge to steal from others, causing more problems in any neighbourhood. The cost of living will be high for struggling financially, and stealing will be one of their few options. However, this will eventually lead to an increase in criminal activity. Therefore, it is critical to have a low-cost security system for people's homes. Criminal cases are more likely to occur