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HOME SECURITY ALARM SYSTEM

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ABSTRACT

Nowadays, house burglary has become one of the concern issues in our community. These criminal acts lead to devastating consequences for the people. Due to the current situation, this project has proposed to overcome the problem by implemented technology innovation. Many people who in the situation had face loss stuff especially when it comes to their valuable belongings. It is troubling for them to face that terrible consequence. This project has focused on developing a home security alarm system in which detection occurs when there is a burglar or theft try to break in into a house or building. This project has designed by using a Passive Infrared Sensor (PIR), Arduino, and WiFi module ESP 8266 as the main component. The sensor will detect the infrared light radiating from intruders and send the information to Arduino. Then, Arduino will process the information received. This project also constructed with alarm, LED, and WiFi module ESP 8266. The alarm and the LED will activate if there is an intruder. Next, WiFi module will send a notification to the owner of the house when there is an intruder. The project is successful developed an affordable home security alarm system with applying the Internet of Things (IoT) concepts and embed a WiFi module (ESP 8266) into Arduino. At the end of this project, the system successfully functions to act as a security alarm and shows the motion detected within five meters distance. In conclusion, this project will help people be aware of burglar activity and make them alert and care about their neighbourhood. It is crucial to keep the community secure, and this product is useful for the future.

Keywords: arduino uno, esp8266, pir sensor, smart home, home security

1. INTRODUCTION

Burglary is an unlawful entry into a building or other location for purposes of committing an offense [1]. Usually, that offense is theft. Fortunately, modern technology has a high potential to solve this issue by using a security alarm system. Home security is an important feature of home automation and becoming the most crucial one to overcome burglary crime [2]. A security alarm is a system designed to detect intruders or unauthorized entry into a building or area. Usually, security alarms are utilized in residential, commercial, and industrial for assurance against thievery. Therefore, this project has developed a home security system to detect intruders that are trying to break into a building or area and thus can improve the security of a house throughout notify the information to the homeowner by implementing the Internet of Things (IoT) framework.

2. SYSTEM OVERVIEW

Figure 2.1 shows the block diagram of the home security alarm system. The PIR sensor will measure infrared light emitted from objects that generate heat. For this project, the mini PIR sensor is used to detect the intruder. There are three pins connected from PIR sensor to the Arduino Uno, which is Ground-Ground,

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