UNIVERSITI TEKNOLOGI MARA

GLASS BREAK SENSOR
WITH
MOBILE APPS

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ABSTRACT

The development of Glass Break Sensor with Mobile Apps is a solution to all owners to increase the security of their premises from theft. This device can alert the owner by sending notifications after detecting an intruder depend on the level of intrusion. The alarm system will trigger when the device receives a specific range of audio frequency on the glass door which by any chance occurs an attempt of breakthrough at the petrol station. This project consists of two parts which are hardware design and software development. For hardware design, the system is controlled by an MSP430G2553 microcontroller which is in Arduino UNO board. The digital vibration sensor is used as the input of the microcontroller. Global System for Mobile Communication (GSM) and Global Positioning System (GPS) is preferred in the wireless communication because due to its effectiveness and use of messages. Messages were used because of the increasing use of mobile phone. For Software development, Arduino Compiler is used to program the microcontroller to enable the function of detecting, tracking, alarm and alert indication for detecting the different level of theft by using messages to the owner of the petrol station and police station.

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CHAPTER 1

INTRODUCTION

This chapter is to introduce the concept of the project, which is a brief background for the glass break detector with mobile apps. Several problem statements, objectives of the project, scope of work and significance of study.

1.1 Background of Study

According to The Statistics Portal, there are a total number of 3700 petrol station in Malaysia in 2017, by brand leading by Petronas (1065 unit), Shell (950 unit), Petron (570 unit), Chevron Caltex (420 unit), BHP (360 unit) and others (335 unit). Each petrol station brand in Malaysia needs to apply the guideline safety by having the principle risk and control measures. Even though control measure has been applied, it will not prevent the criminal activity to occur at the petrol station. The Statistics on Criminal Indexes of Malaysia by Type of Crime, State and Year estimates that there are 18,760 cases reported in year 2016 which is intrusion crime. As we all know, not all petrol station operates 24 hours per day. Like any other business, petrol stations are among of them who are exposed to a number of risks (Olaotse, 2010). After all, it depends on the manager of the petrol station to decide whether to operate or not and based on the needs of the people. In contrast, the intrusion crime might be occurred as there are no people works or guarding the petrol station although there are security measures taken such as police station do patrolling at night. The overall goal of this project is to develop a sensor device and a mobile apps which can directly notify the manager of the petrol station and the nearby police station if there is occurs an attempt of break in.

1.2 Problem Statement

Nowadays, petrol station is one of the targeted places for intrusion crime to occur in Malaysia. For instances: many reasons for theft activities to be performed because of personal gain, wrongful intention, desperate need, constraints and jealousy (Lyon, 1988).