

Universiti Teknologi MARA

KMAS -

IoT Based - Kindergarten Monitoring and Alerting System

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ABSTRACT

The market is flooded with many types of security systems for premises and businesses. However, current used kindergarten monitoring system has its own drawbacks because, it can be vulnerable and lack of other features. KMAS offers an effective kindergarten administration in monitoring and managing kindergarten operation.

It is important to make sure that kindergarten are safe to live and leave by increase the monitorability of belongings and life of people thus being protected against danger, loss, and criminals. After doing research on past projects, the best model was identified. A new system built to eliminates the limitation of past projects. It able to detect LPG gas leak, water leakage, air temperature and humidity, intruder, and child entering prohibited areas.

IoT seen as billions of smart, connected “things” a sort of universal global neural network in the cloud that will encompass every aspect of our lives, and its foundation is the intelligence that embedded processing provides. This project used IoT service from Blynk to push data to its server for database with the help of Arduino Mega 2560 embedded with Dragino Yun for Wi-Fi connectivity. Blynk application will be used to view sensor’s reading, show current system’s status and provide a little of kindergarten automation which is turning power fan and lights.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND STUDY

With the change and development of technology in Malaysia. The Internet-of-Things (IoT) technology is widely used. “Internet of Things (IoT) is a proposed development of the Internet in which it connects everyday objects to certain network connectivity and so, it allows the objects to send and receive data from the network connectivity itself. With this new development, these devices are intelligently interconnected and there by creates a new form of communication between objects and people, and among the devices itself.” (Shukri, 2017). This project provides the additional support for the relevant people to monitor the kindergarten, especially the children’s caretaker. It’s also can be used to add an extra measure of method to increase the safety and avoid potential loss due to threats such as burglary, fire or natural disasters.

Most of Malaysians are apathetic when it comes to protecting their property. From the data analytic, burglary rate in Malaysia was 104 cases per 100,000 population in 2016, up by 9.66 % from the previous year. (knoema.com, 2017). Using the implementation of the ultrasonic, it will helps notify the activity in case when it’s happening. Thus, immediate action can be taken.

Another extreme threat to life and property due to it can start quickly, spread widely and burn intensively is fire. According to statistic shows that fire alone caused RM5 billion nationwide in 2017 (Malaymail.com, 5 February 2017). By studying the analysis of Noor Shaifful Nizam Bin Sulaiman, whom the branch head of Malaysian Fire Investigation Division. He concluded the one highest contribution for the source of structure ignitions from 2015-2017 is from the gas equipment with more than 1000 cases per year. In order to put an end to this threat, gas sensors comes to play the role. Additional, water sensor also been used to detect unclosed water tap or leakage, DHT22 sensor been used to detect ambient air temperature and humidity.