Universiti Teknologi MARA

SMOKE: ALERT ME! IOT BASED MOBILE APPLICATION USING SMOKE DETECTOR

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Thesis Submitted in Fulfilment of The Requirements For

Bachelor of Information Technology (Hons)

Faculty of Computer and Mathematical Sciences

January 2021

ACKNOWLEDGEMENT

Alhamdulillah, praises and thanks to Allah for giving me the chance and opportunities in completing this final year project who's His endless generosity and kindness has given me the strength to complete this final year project in time.

I cannot express enough thanks to my supervisor, PM Dr. Natrah Abdullah @ Dolah for trusting me, giving me the guidance and support throughout the whole supervision process in completing the research. I am fortunate that, I had the opportunities to work with her because she always makes time to assist me occasionally.

Next, I would also like to extend my special thanks to Dr. Emma Nuraihan Binti Mior Ibrahim, my CSP650 lecturer, for all the positive and constructive feedback that has helped me shape and develop my work in many ways. It is impossible to repay all the effort and time she spends for all the students under her supervision.

Moreover, I would like to take this opportunity to express a deep sense of gratitude to my examiner, Dr. Ahmad Iqbal Hakim Suhaimi for his time valuable comments and suggestions on this project. In addition, my special appreciation also goes to my supportive beloved parents who gave a lot of never-ending emotional support and prayers for me throughout this project.

Last of all, I would like to give my special appreciation to my classmates who struggled night and day together to complete this project. Thank you for the support and the help that has been given.

ABSTRACT

The concept of smoke detector and mobile application integrate for fire emergency hazard systems is quite well known in the current era. Due to the serious health, safety, environmental and economic issues of the release of hazardous materials, the device that controls gas sensors, processes information, produces evacuation alarms and shuts down equipment and gas valves can be easy to use. According to annual statistic of investigated fire by building type, residential property is at the highest with 60% cases. Besides, most of death cause by fire incident is not by fire burn but by excessive smoke inhalation. Researchers conducted literature and research reviews that offered a more comprehensive description of the topic and offered them with insights into the new technologies to be used in the fire safety device and application. For example, technology that integrated with IoT to help user in daily basis routine. Thus, this project's purpose is to provide a way to provide a better smoke detector for the house owner. Smoke: Alert Me! IoT Based Mobile Application Using Smoke Detector allows users to leave the house without worrying about their house property involve in fire incidents by having an early alert and prevention with an only internet connection, mobile phone and smoke detector installed in their house. This project aims to develop a smoke detection technology that can be connected to the user's mobile phone which acts as the monitoring tools for the mobile application. This project will be using the android platform. The target user of this project would be the household owner only. Mobile Application Development Lifecycle (MADLC) is the approach employed to complete this task. The IoT Design Methodology will use to develop the smoke detector device which utilizes the internet to connect with the mobile application. In the nutshell, Smoke: Alert Me! IoT Based Mobile Application Using Smoke Detector able to provide better monitoring and prevention from any potential situation turn into tragedy. In the future, this application can used not just in house or shop premises, but also in the industrial sector.

Keyword: Smoke detector, Internet of Things, Mobile application, Android, Mobile Application Development Lifecycle, IoT design methodology.

TABLE OF CONTENT

CHAPTER 1

INTRODUCTION

This chapter provides the background for the research and its justification. It also explains the details about the problem statement for this project, objectives, scope and project significant.

1.1 Project Background

One move that can be done in advance of the fire is to control the situation around the house. Monitoring is one of the methods for the prevention of fire hazards (M. U. Harun Al Rasyid, D. Enda and F. A. Saputra, 2019). According to chairman and former fire and rescue department director-general Datuk Soh Chai Hock (2017), safety awareness among Malay-sians is still low, especially among residential owners. A smoke detector is one of the fire safety equipment devices recommended for homes. A smoke detector is a device that senses smoke and sends an alarm to warn people nearby that a potential fire can occur. In fact, according to Fire Services Act 1988 (Act 341) section 56 any person who wilfully gives or causes to be given a false report of fire or other calamity shall be guilty of an offence. It is certainly not desired incident by everyone but these risks can be reduced by controlling environmental circumstances such as the control of air pollution regularly and by avoiding fire-prone activities using wireless sensor network (WSN) technology that is an IoT(F. A. Saputra, M. U. H. A. Rasyid and B. A. Abiantoro, 2017).

In the succeeding coming years, it will have significant impacts on business models, infrastructure, security, and trade standards throughout IT computing and