



POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

Drone with IoT based Speaker Announcement

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JABATAN KEJURUTERAAN ELEKTRIK

SESI 2 2021/2022

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This report submitted to the Electrical Engineering Department in fulfillment of the requirement for a Diploma in Electrical Engineering

JABATAN KEJURUTERAAN ELEKTRIK

SESI 2 2021/2022

CONFIRMATION OF THE PROJECT

The project report titled "Drone with IoT based Speaker Announcement" has been submitted, reviewed and verified as a fulfills the conditions and requirements of the Project Writing as stipulated

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“I acknowledge this work is my own work except the excerpts I have already explained to our source”

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DECLARATION OF ORIGINALITY AND OWNERSHIP

TITLE : Drone with IoT based Speaker Announcement

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2. I acknowledge that 'The Project above' and the intellectual property therein is the result of our original creation /creations without taking or impersonating any intellectual property from the other parties.
3. I agree to release the 'Project' intellectual property to 'The Polytechnics' to meet the requirements for awarding the **Diploma in Electrical Engineering** to me.

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ABSTRACT

The use of drone is becoming increasingly popular nowadays is a hobby of certain groups to operate unmanned aircraft that fly according to the altitude desired by the operator. The use of drone as a monitoring and information delivery tool is a new exposure to show the advancement of technology applied in areas that are difficult to reach and explore. The advantage of drones in monitoring and collecting all information as well as being able to convey information through announcements quickly and directly is able to make decisions immediately after identifying the initial problems that arise. Nevertheless, every problem statement that exists in society to solve a problem needs to be studied to benefit every thing that is to be planned. Studies have been conducted to combine hardware and software in addressing this emerging problem. The use of IoT applications is given attention by using the Arduino Pro mini in producing innovative products. To achieve the objectives of the study, several objectives have been considered for the purpose of producing IoT based products such as to design modern electronic technology using Arduino Pro Mini to monitor and deliver covid-19 SOP information or disaster instructions, To implement BLYNK Application using Arduino to monitor conditions and situations community as well as one -way communication and To develop a combination of hardware and software, namely drone and BLYNK applications that provide advantages in simple and efficient information delivery. The results of the study found that the use of drones is very relevant and efficient when combined with applications because the physical distance can be done and in remote conditions can be controlled and audio broadcasts can be disseminated to the public. The goal of community health monitoring can be achieved with this method by the occurrence of distance between individuals in deciding the chain of covid-19 epidemics. The achievement of the objectives of this study clearly shows that each challenge can be overcome with appropriate measures and meet the purpose to curb the epidemic of covid-19 disease and able to provide guidance to the public according to needs, situations, disaster areas and communities. The project is successfully produced according to the beginning of the idea, planning and the desired objectives can be achieved to solve the problem. This innovation product can be enhanced according to the circulation of technology in the future if the idea is placed well and perfectly.

ABSTRAK

Penggunaan dron yang semakin popular pada masa kini merupakan hobi golongan tertentu untuk mengendalikan pesawat tanpa pemandu yang terbang mengikut ketinggian yang dikehendaki oleh pengendali. Penggunaan dron sebagai alat pemantauan dan penyampaian maklumat merupakan pendedahan baharu untuk menunjukkan kemajuan teknologi yang diaplikasikan di kawasan yang sukar dicapai dan diterokai. Kelebihan dron dalam memantau dan mengumpul segala maklumat serta mampu menyampaikan maklumat melalui hebahan secara cepat dan langsung mampu membuat keputusan serta-merta selepas mengenal pasti masalah awal yang timbul. Namun begitu, setiap pernyataan masalah yang wujud dalam masyarakat untuk menyelesaikan sesuatu masalah perlu dikaji untuk memberi manfaat kepada setiap perkara yang ingin dirancang. Kajian telah dijalankan untuk menggabungkan perkakasan dan perisian dalam menangani masalah yang timbul ini. Penggunaan aplikasi IoT diberi perhatian dengan menggunakan Arduino Pro mini dalam menghasilkan produk inovatif. Bagi mencapai objektif kajian, beberapa objektif telah dipertimbangkan bagi tujuan menghasilkan produk berasaskan IoT seperti mereka bentuk teknologi elektronik moden menggunakan Arduino Pro Mini untuk memantau dan menyampaikan maklumat SOP covid-19 atau arahan bencana, Untuk melaksanakan Aplikasi BLYNK menggunakan Arduino untuk memantau keadaan dan situasi komuniti serta komunikasi sehalu dan Untuk membangunkan gabungan perkakasan dan perisian, iaitu aplikasi dron dan BLYNK yang memberikan kelebihan dalam penyampaian maklumat yang mudah dan cekap. Hasil kajian mendapati penggunaan dron amat relevan dan cekap apabila digabungkan dengan aplikasi kerana jarak fizikal boleh dilakukan dan dalam keadaan jauh boleh dikawal dan siaran audio boleh disebarkan kepada umum. Matlamat pemantauan kesihatan masyarakat boleh dicapai dengan kaedah ini dengan berlakunya jarak antara individu dalam memutuskan rantaian wabak covid-19. Pencapaian objektif kajian ini jelas menunjukkan bahawa setiap cabaran dapat diatasi dengan langkah yang sewajarnya dan menepati tujuan untuk membendung wabak penyakit covid-19 serta mampu memberi bimbingan kepada orang ramai mengikut keperluan, situasi, kawasan bencana dan masyarakat. . Projek berjaya dihasilkan mengikut permulaan idea, perancangan dan objektif yang diinginkan dapat dicapai untuk menyelesaikan masalah. Pengeluaran inovasi ini boleh dipertingkatkan mengikut peredaran teknologi pada masa hadapan sekiranya idea diletakkan dengan baik dan sempurna.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Drone is a popular toy nowadays, It is a hobby of people who want experience in driving an aircraft that can fly without the need for an in-flight pilot to navigate the flight direction because it only needs to be controlled using electronic devices and programming software to navigate the direction of the drone's flying movement. In addition, drones also refer to aircraft that take off and land vertically, can float in the air at very low altitudes or predetermined altitudes. The use of Drones has been created by researchers, technologists and news organizations for the purpose of reporting and gathering information after the formation of some rules. The Malaysian government always makes various announcements for the knowledge of the people and the community about SOP covid-19 or other directives such as natural disasters as well as in terms of rules and behaviors that need to be practiced by the community. The method of announcement can be conveyed in a variety of ways. However, This research method is able to increase the diversity to convey information in any situation and field in showcasing today's technology. This is important to meet every aspect and need of different places, areas and environments and can benefit all walks of life with the goal of the message given to the general public arrives.

1.2 Background Research

The world is shaken by the existence of the covid-19 virus. Each problem needs to be studied and scrutinized to find a solution from various aspects. This includes effective means of communication and teaching to the community. The idea was sparked to produce IoT -based products to facilitate the delivery of information through voice. This product is also not specific for the delivery of information during covid-19 patients but can be used according to situations and urgent situations such as natural disasters that occur in an area to facilitate the delivery of information can be practiced.

1.3 Problem Statement

Living in a covid-19 pandemic of social distance is crucial to breaking the chain of transmission of this infectious disease. Every action should always do social imprisonment, this emphasizes the health aspect for every action and measures taken such as delivery of information remotely and does not risk every individual who needs to go to crowded community areas or conditions that are difficult to access. As a result, people do not realize how serious it is to take proper health care as well as its benefits.

1.4 Research Objectives

The main objective of this Project is this research is based on IoT and explore the Arduino Pro Mini board.

More specifically the principle objective of this research are:

1. To design modern electronic technology use the Arduino Pro Mini to monitor and communicate covid-19 SOP information or disaster instructions.
2. To implement a BLYNK application using an Arduino to monitor community conditions and situations and communicate one -way.
3. To develop a combination of hardware and software, namely drone and BLYNK application that provide advantages in simple and efficient delivery of information.

1.5 Scope of Research

1. This Project is focusing to the announcement of instructions on Covid-19 and natural disaster instructions to the public through one-way communication.
2. The emphasis is to maintain distance between humans to prevent virus infection and to be able to convey information to the public even if the conditions and situations of the area are difficult to access
3. The main controller is using using the BLYNK app which then connects Wi-Fi to the esp8266 module then links directly to the Arduino Pro Mini as a processor to output audio.

1.6 Project Significance

There was already a similar idea about this project when the world was experiencing a health crisis i.e. during the worldwide covid-19 virus outbreak, so this project is not the first of its kind. among those working on this project is Agoston Restas from Hungary. With the resulting innovation is called the application of drones to combat the covid-19 pandemic. Since then, various implementations of this project have been released around the world. Like this one project is also similar, however this device is more focused on personalized use and the local community. We can monitor and communicate information to the community or the public in a particular area. Therefore, it can be said that this product is a new idea that has its own impact and advantages nowadays that can be used in public places and is a product that can compete in the market.

1.7 Chapter Summary

This chapter contains contents such as introduction, background research, problem statement, research objective, scope of research and project significance related to the creation of this project.