UNIVERSITI TEKNOLOGI MARA

INTELLIGENT STICK WITH ULTRASONIC SENSOR AND WIFI MODULE

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ABSTRACT

Intelligent stick with iot for disability a set of systems and processes for helping the disability people through its life due to their visual impairment, they have severe mobility and navigational issues. Independent travel is challenging because of the risks posed by environmental obstacles and hazards. Their mobility and safety may be compromised by uneven surfaces, construction zones, and impediments. The main objectives of this project are to design intelligent stick with iot that can give information about the objects in public places using Arduino Nano as its microcontroller and develop in the mobile app and Internet of Thing (IoT) technology to help mobility for disability person. This report aims to design a Intelligent Stick with Iot for disability that been combined with o microcontroller-based Arduino Nano board and connected to ultrasonic sensor which function to measure any obstacles in front the person from the range of 30cm to 0cm from the stick and give an alert sound using buzzer. Then, the location of the person will be given to the apps by using the GPS module to let the family to know the current location in case of any emergency.

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INTRODUCTION

1.0   Research Background

People who are blind lead complex lives that involve many facets of participation, career, and personal life. They have limitations on everything, including walking, working, and taking public transportation. Based on data available till September 2021, the estimated number of blind individuals residing in Malaysia is approximately 217,000.[1] This figure illustrates the prevalence of blindness and vision impairment in the country. It is important to keep in mind that a number of factors could have changed this number since then. There could be a number of factors influencing the blind population in Malaysia. The growing population is one of these factors. It is likely that as Malaysia's population increases, so will the number of individuals be suffering from vision impairments, including blindness.[2] Innovations in healthcare are essential to comprehending and serving the blind community. Improved access to eye care services, early detection and treatment of eye problems, and increased awareness of eye health can all help to reduce the prevalence of blindness. Conversely, a higher prevalence of visual impairment could be the consequence of inadequate access to medical care, especially in remote or underprivileged regions.

1.1   Problem Statement

The biggest problem blind people face daily is that they are not as independent or accessible. While navigating physical locations, interacting with digital interfaces, and obtaining information in various formats, there are a number of challenges to overcome. Although helpful, the technologies available today often do not provide a seamless, comprehensive solution. It is essential to design a user-friendly, inclusive system that addresses these issues by ensuring that information is available across several platforms, fostering efficient communication, and enhancing navigation. This issue statement searches for innovative approaches to promote the autonomy and integration of the blind community into a world meant primarily for sighted people.