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Voice Controlled Wheel Chair with Temperature Detection

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Abstract

This task needs ongoing voice recognition via a mobile application. The system is used to control a driver's seat with the user's voice. The goal of this project is to capture the development of people who are crippled or incapacitated, as well as elderly people who can't move well. The goal of this framework is to allow specific users to pursue living their lives with little reliance upon for their growth as needed. Speech innovation is an important innovation that will provide a better way for people to communicate with a machine or equipment. Therefore the problems they face can be addressed by introducing a new acknowledgment to improve the wheelchair. This can be understood and enhanced by using the enhanced mobile gadget as a central person or contact area. In this work it is planned to combine communication to force the hearing system that governs the development of the chair and the application that may or may not deal with the rules of graphical. This business uses arduino with a Microcontroller circuit and DC engines to perform the development of a wheelchair and Ultrasonic sensors to detect the barriers between the wheelchair and the bearing system.

Keywords: Wheelchair, Ultra Sonic Sensor, Arduino UNO Micro-controller, HC-05 Bluetooth Module, DC Motors, Physically Challenged, Voice Command. Android Application.

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Introduction

In this application we use Android Application and Voice Recognition System. In any case, the vast majority of people with disabilities who need wheelchairs are satisfied with that, almost any people from a disabled environment are not easy or understandable to work in a wheelchair. This work is associated with aid development. For people with disabilities and dependents, it is a free, useful and happy life. [1] To fulfill the duties a person who is weak with a train failure needs a wheelchair that requires that person to move. He can do that by pushing a wheelchair with his hands. In any case, the most important part of us is the lower limbs, or be aware of the need to work with unnecessary fatigue. It is therefore advisable to provide them with a wheelchair with an engine that is responsible for delivering voice orders. Since a wheelchair is essential to the choice of avoiding recurring seizures, we can move at the right speed. The cost of this wheelchair is felt by the few injured people as expected, and by aid agencies. Considering these needs we propose a wheelchair-bound robot that has the Herald's constant abhorrence. The power wheel control connection is currently insufficient to provide the ability to transfer to a significant number of individuals who are unconscious. With testing and intelligent design, the wheelchair controls the continuous use of safe and efficient use of the action and accountability, use transport. This effort will provide weight loss for new wheelchair responses using the optical connector. [2] This project features a wheelchair that can only be controlled using the android app and client voice in addition. A key objective of this effort is to work with the development of people with disabilities and older persons who are unable to walk upright to submit a form so that we can communicate with them so that they can be better off. Talk affirmation is an important development that can provide connections to people with wheelchair control equipment. This effort includes two segments of customization and hardware. It is thought that the commitment of the human voice is using the Android phone as an arbiter. In this experiment, the Ardiuno packet (Atmega 328) is used as a controller to control the movement of the wheelchair considered human voice as Info. [3] There are five key improvements to a wheelchair that should be used by the client. The five functions of a wheelchair are as follows: 1) Forward 2) Backward 3) Turn to one side 4) Turn to one side 5) Standing position.

Related Work

Independent mobility plays a major role in building the foundation for much early learning for younger people. The lack of exploration and control often results into a cycle of deprivation and lack of motivation that leads to learned helplessness. For aged people, independent movement is an important aspect they can't depend for others always, so they need a technology to live themselves. Mobility difficulties led to the problem of activities of daily living (ADL) and instrumental ADL disabilities because of the need to move to accomplish many of these activities. The impaired mobility often results in reduced opportunities to have socialized policies and a normal life like others, which leads to social isolation, and many mental problems, like depression and stress and heart disease and lead them to dead.so the needs of many peoples with disabilities can be satisfied with traditional way or self-automated wheelchairs, a segment of the disabled community finds it difficult or impossible to use wheelchairs independently without any persons help but The disabled population includes people with low vision, visual field reduction, spasticity, tremors, or cognitive deficits. These individuals dependent on other people for help to push them in a manually handled wheelchair. To accommodate this paralyzed people's, several researchers have used technologies originally developed for Power wheelchairs have been designed of different ways, such as assuring collision free travel, aiding the performance of specific tasks like passing through a doorway and moving from one place to another place.

Proposed System

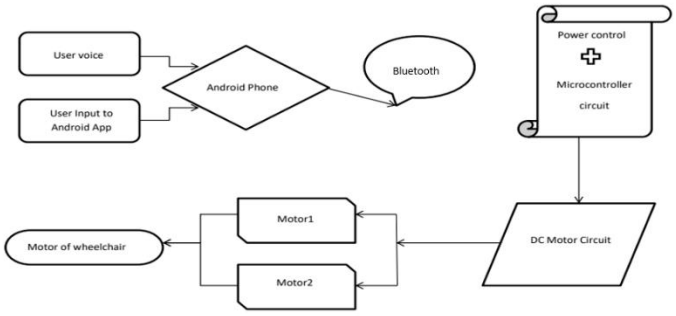


Fig. 1: Block Diagram of System

Components of Wheelchair

1. Wheelchair battery

The battery used in these activities is a liquid form to generate electrical energy.

2. Wheels

The wheelchair has two rear wheels universal wheel connected to the front wheel both of the two wheels with the same width two rear wheels pulling with two dc motors connected to each straight wheel.

3. Ultrasonic Sensors

They are very effective and efficient. Sensors are used to find the humble from a certain distance and to inform the user about it.

4. Bluetooth device

Bluetooth has enabled a person to create a personal area network where most wireless communication devices via Bluetooth are commonly used with the home automation control system shorter wavelength of UHF radio frequencies between 2.4 and 2.485ghz.

Implementation

1. Implementation Platform

- **Hardware Requirement**
  - Arduino UNO
  - Battery 12 volts
  - Android Phone
  - Power supply
  - 2DC Motors (12v200rpm)
  - Ultrasonic Sensors HC-SR-04
  - Bluetooth Module HC-05
- **Software Requirement**
  - Arduino IDE
  - Android Application
  - Arduino programming (java & C++)

Implementation Details

Currently the prototype of the project has been developed. The figure below depicts the same.



Fig. 2: The Prototype Model of the Wheelchair

The above figure shows the prototype model of the voice controlled wheel chair.

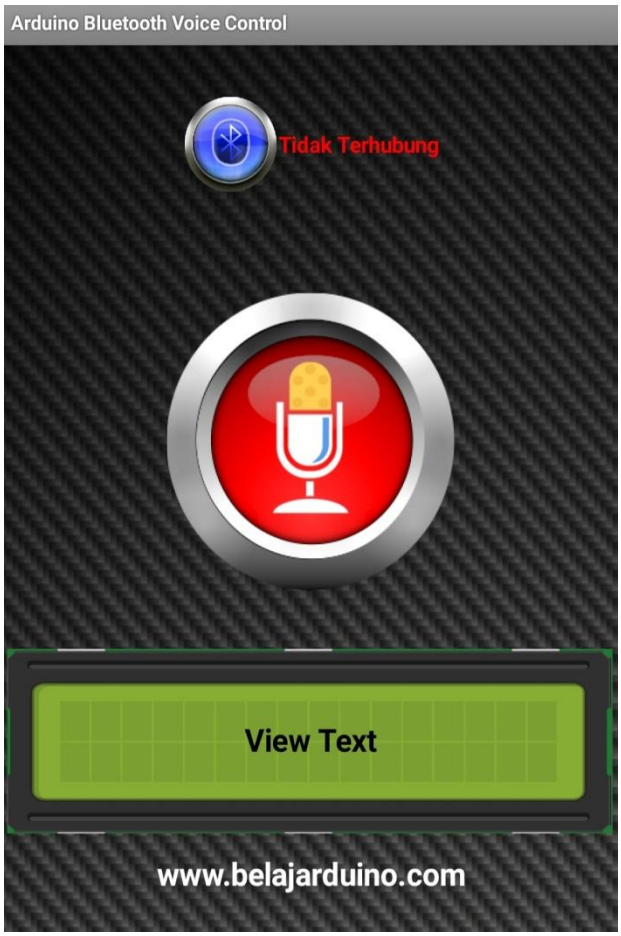


Fig. 3: User Interface of the Application to Control Wheelchair

The figure above is a screenshot of the voice recognition and wheelchair control application using the voice command. The user first connects the mobile phone with the Bluetooth wheelchair module. After that the user can control the wheelchair with the help of various Voice Commands such as Forward, Back, TURN- Right, Left, Stop.

Feature Scope of Project

The project planning component which involves determining and compiling a list of specific project objectives includes deadlines and ultimately cost is what needs to be accomplished and the work to be done to deliver the project -50 kg to avoid obstacles used.

Result

The project tested the wheelchair movement using a trained voice after the project and developed an automatic wheelchair with various interlocking units Based on two key factors firstly the accuracy of the voice system and secondly the wheelchair speed controls this project is tested this will be used for people with first hearing only each word was properly recognized in the future we will test it for a different user where the system is not trained for example words like right have been recognized as writing this way more than 5% accumulated errors in this.

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