ABSTRACT

DC MOTOR SPEED CONTROL USING VOICE COMMAND BASED ON ARDUINO MICROCONTROLLER

by

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Advances in technology today is growing very rapidly and is evidenced by the many innovations that have been created. One of the technologies that can make it easy for the users is technology with voice recognition features. Spoken voice recorded into the database and the system only recognizes the recorded voice into the database. Features voice recognition system can be used for various needs, such as security and control equipment. This feature can also be used to control the speed of a dc motor. Sound can be converted into digital data and can be used by the microcontroller to change the value of the input voltage to the dc motor using PWM (pulse width modulation) as well as control the speed of the dc motor.

This research aims to design and create an apparatus for controlling the speed of dc motor using voice commands. The design of the equipment uses voice recognition sensor as a means converting sound into digital data, Arduino microcontroller as the main controller and dc motors. The words were spoken designed and programmed to adjust the rotation speed as desired. Voltage input to control the speed of a dc motor is regulated by the microcontroller by using PWM method.

The results obtained indicate that the appliances are made to work well. Pronunciation of every word that has been designed for each of the dc motor speed of 900 rpm, 1050 rpm, 1100 rpm, and 1150 rpm is able to produce a rotation speed of 900.2 rpm, 1050,5 rpm, 1101,7 rpm, and 1152,94 rpm.

Keywords : speed control, DC motor, microcontroller, voice commands, voice recognition sensor