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Review on Vehicle Speed Limit Controller

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ABSTRACT:As far as automobiles are concerned, safety is very important to reduce the number of accidents in speed restricted zones. It minimizes loss of property and life. According to recent surveys, over the past few years, the number of accidents near school zones, hospital zones and sharp turns has increased tremendously, as they are in a rush to get the target space quickly. So controlling the speed of the vehicle is an important issue. This paper aims to provide a practical, compact and simple design for developing an automatic vehicle speed control system that can be quickly implemented in schools, colleges, hospitals, sharp turning zones to reduce the number of accidents. This automatic motion control system is built using a microcontroller-based platform of Arduino Uno board.

KEYWORDS: Arduino, receiver, motion control, transmitter, Zigbee.

I.INTRODUCTION

The Law Commission of India has advised speed limits in critical zones, to reduce road accidents and a peaceful environment for people. Existing Methods may not reduce accidents, Because of the rash driving of some drivers. So, the speed Control must be applied to all vehicles. here is Our new idea to install automatic speed controlIn -vehicle systems mainly in restricted areas. Here Set a device as a transmitter where there are multiple devices Integrated to monitor vehicle speed Enters above the set speed and controls it by keeping a Receivers on vehicles, based on transmitted signals by interfacing the vehicle slows down the current speed of the vehicle is sensed by the microcontroller a DC motor and its output were given Microcontroller where it compares the speed Prescribed limits and speeds are controlled automatically. The technology is used in this system to communicate between the transmitter and receiver are Zigbee technology, which covers It is 10-100 m. It is relatively cheap than others.

II. LITERATURE SURVEY

Aamir Sarwar Jahan, and Imdadul Hoq, presented the "GPS Enabled Speed Control Embedded System Speed Limiting Device with Display and Engine Control Interface" published in 2013.

Dr.K.S.Tamilselvan, et.al., Android Based Vehicle Speed Control System In Critical Zone Using GPS Technology, volume 7, issue 6, June 2018, pp.639-644.

III.PROPOSED SYSTEM DEVELOPMENT

Microcontroller Module (Arduino Uno): ATmega328P datasheet is used for Arduino Uno microcontroller board. It has 6 changing physical quantities inputs and 14 digital input/output pins (of which 6 can be used as PWM outputs).

Fig. Arduino UNO

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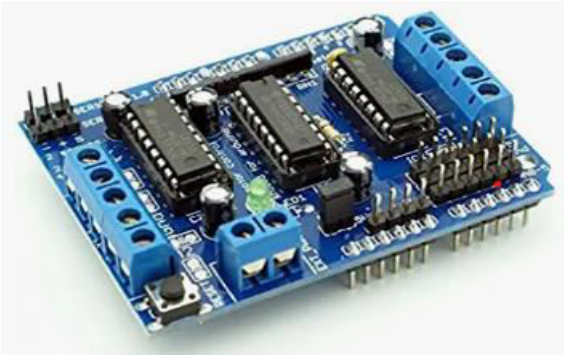
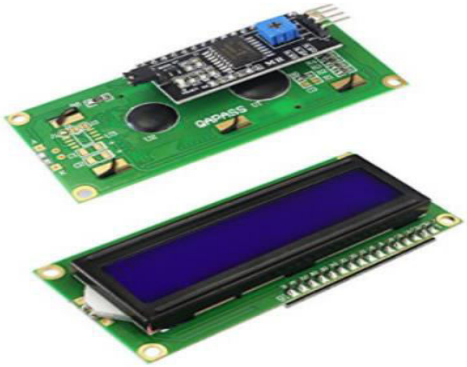
DC Moto: A DC motor is a class of rotary electrical motors that convert direct current (DC) electrical energy into mechanical energy. The most common types rely on the forces created by the magnetic field induced by the current flowing in the coil. Almost all types of DC motors have some internal mechanism, either electromechanical or electronic, to periodically change the direction of the current flowing through the motor.

Fig. DC Motor

Motor Driver: You can control two DC motor with a single L293D IC. The works on the concept of typical H-bridge, a circuit which allows the high voltage to be flown in either direction. In a single L293D IC there are two H-bridge circuits which Scan rotate two DC motors independently.



LCD display: An LCD screen is an electronic display module that uses liquid crystal to produce a visible image. The 16×2 LCD display is a very basic module commonly used in DIY's and circuits. The 16×2 translates a display of 16 characters per line in 2 such lines. In this LCD, each character is displayed in a 5×7 pixel matrix.



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IV. WORKING OF SYSTEM

The main objective of this system is to reduce accidents Rates in speed restricted zones like school zone, hospital zone and sharp U-turns due to driver negligence Reduce vehicle speed to the speed limit as specified in Signboard in that zone. Control the speed of this automatic vehicle system, when the vehicle enters a speed limited zone The transmitter block starts working and transmits the signal vehicle receiver that is placed in a vehicle, Zigbee The receiver which is connected to the microcontroller process Signals and compares a predetermined vehicle speed Velocity of that particular zone. Arduino Uno was used as Implementation of 'Automatic Speed Control Off' Restricted area vehicles using Arduino UNO,DC motor, Zigbee module and sensor, where motion The vehicle slows down automatically. This speed control system Number of accidents near school and Another specific zone to reach its minimum speed. This system Very low cost, durable, low power and gives Simple design for maximum safety and implementation for the publicin certain areas. This system works even in bad weather Day this system will protect the public from rash drivers, Drunkards and drivers who lose their mind while driving. By implementing this system we can provide a safe and peaceful public environment.

V. BLOCK DIAGRAM

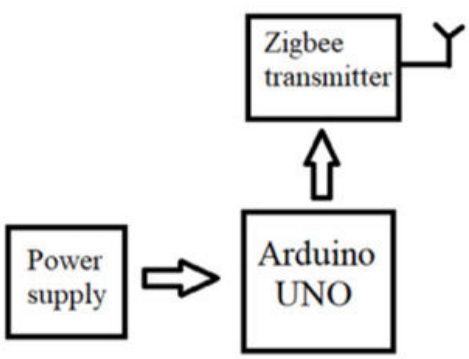

Fig. Transmitter block diagram

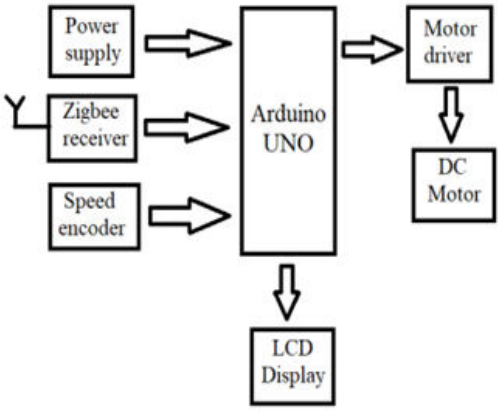

Fig. Receiver block diagram

VI. APPLICATION

1. To prevent the vehicle from exceeding a certain preset speed limit
2. To prevent serious road accidents.
3. Keeping the vehicle speed uniform within the speed limit.

VII.CONCLUSION

This study demonstrates the role of automatic vehicle deceleration and its contribution to the safety of pedestrians and road users. It has been observed that the use of vehicle speed control system contributes significantly in reducing the number of accidents due to driver negligence in disobeying the roadside notice boards in special zones.

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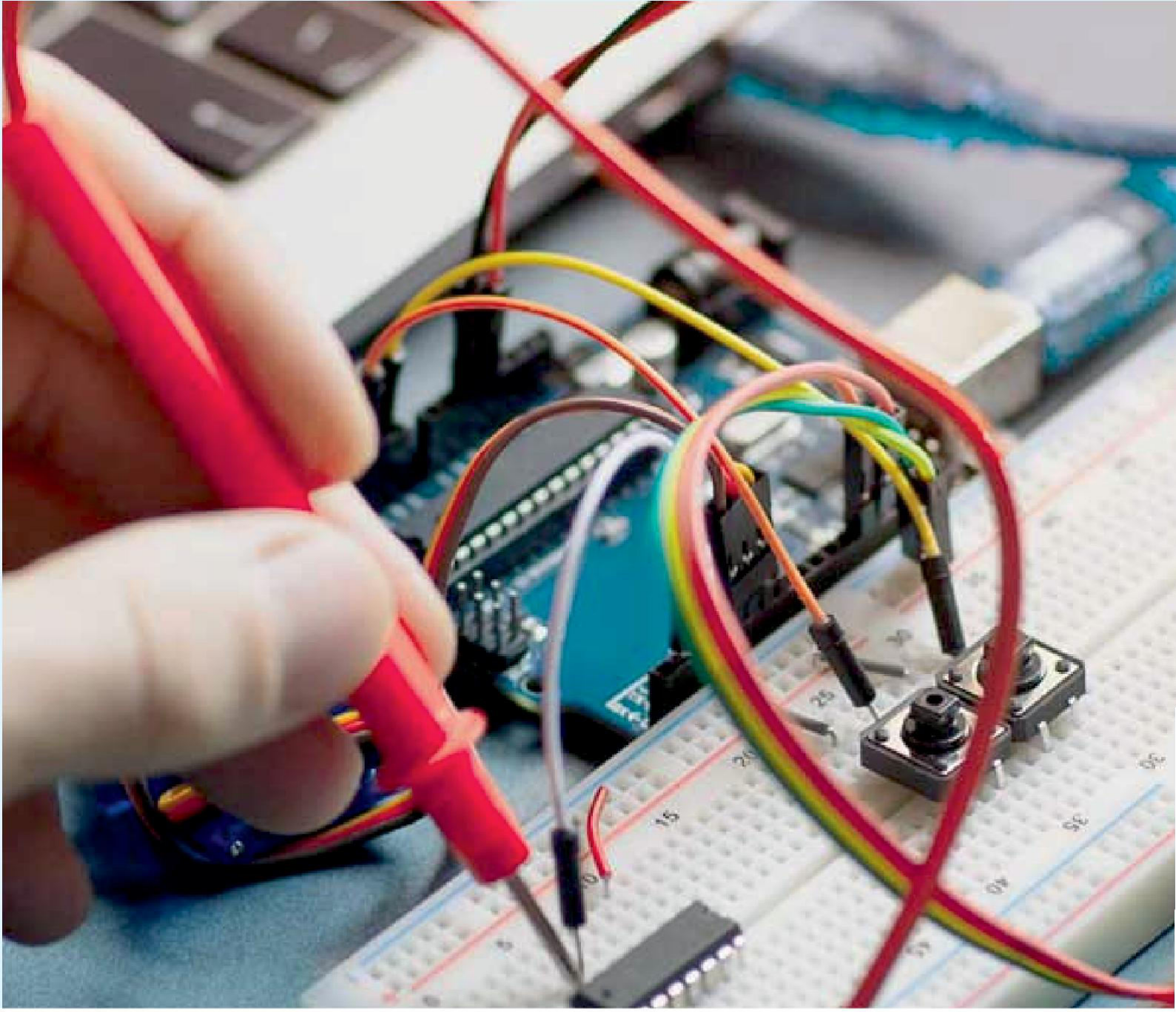

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