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# Accident Avoidance System using Zonal Speed Control Technique

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***Abstract:*** ***The main objective of this project is to develop a system to control the speed of the vehicle and to avoid accidents by adapting zonal speed control technique. This accidents avoidance system is an automobile safety system designed to reduce severity of the accidents. Whenever a vehicle entered a particular mentioned zone the sensing system alerts the driver by an alarm. In case of failure of manual controlling, the system employed here manages to control the speed of the vehicle reducing it to prescribed limit. As road accidents are relatively higher in crowded zones like schools and hospitals, a prescribed speed limit is set in these areas such as 40 kmph for schools and hospitals, 60 kmph for urban areas and 80 kmph for highways. So that the severity of accidents in these zones can be easily reduced.***
***Keywords: Zonal speed control technique, Transmitter, Receiver, Arduino, LDR.***

## I. INTRODUCTION

Road accidents are one of the causes of disability, injury and death. India has the highest road traffic accident rate worldwide with over space deaths annually, beating china. Road accidents cannot be totally prevented but by suitable traffic engineering and management the accident rate can be reduced to certain extend. The road accidents are happening most often due to the reckless and speedy driving of vehicle not obeying traffic rules. In India, the total deaths due to road accidents are around 1,50,000 per year which is approximately equal to 400 deaths per day. Over speeding accounted for 64.4%of the persons killed. 25000 children's are injured due to road accidents in school zones.

## II. MAIN COMPONENTS

*A.* Transmitter
*B.* Receiver
*C.* Arduino
*D.* LDR
*E.* SCR
*F.* Ultrasonic sensor
*G.* LCD display
*H.* Battery

## III. WORKING

The above diagram describe the total working of the zonal speed control technique and how to reduce accidents in protected zones on road way. Total receiver circuit arrangement i.e., receiver module, Arduino, ultrasonic sensor, display etc., will be placed on particular manner in vehicle. Transmitter arrangement i.e., ldr, light, scr triggering circuits and speed controlling circuit etc., are placed on road. Lights are always focused on the ldr. Consider a zone, the vehicle before entering into that zone, the system is alerts and information is given to the driver by buzzer. The information means you are entered into protectable zone, so speed is limited to prescribed limit. If driver can't reduce the speed, system involves here to reduce the speed at starting of zone. When vehicle entered into zone, light rays are interrupted. Scr trigger circuit will generate signal to the transmitter and this signal is transmitted to receiver by transmitter antenna. This signal is received by receiver antenna and speed control system is alerted by given signal and reduced to prescribed limit. Hence speed will reduced to mentioned value. If any object is very nearer to vehicle, the system alerts and vehicle will stop immediately. Object may be pedestrian or vehicle or anything.


Fig1: Working of the zonal speed control techniqueat speed of 15,16 kmph

## IV. RESULT AND DISCUSSION

It identifies the speed of the automobile and regulates the speed when it is changing from zone to zone. for example if the vehicle is on high way if it is moving in high speed after reaching the school zone the LDR which sends the signal through transmitter and receiver to the device and with the help of microcontroller the device speed will be decreased. Since it is a school zone.IN this way we can avoid the accidents.

## V. CONCLUSION

The project represents an automatic speed control system that limits the speed of the vehicle depending on crowding in specific area. By using our system the decrease in number of accidents can be expected. This approach is very much useful, as it will reduce the probability of road accidents and also the death due to accidents. As majority of road accidents are due to rash driving or poor judgment of driver. During accident prone area, driver alerted by the alarm. hence reduce the speed automatically and also manually. Also ultrasonic sensor detects the distance between vehicles stop the vehicle immediately. the implementation and future development of the system is feasible.

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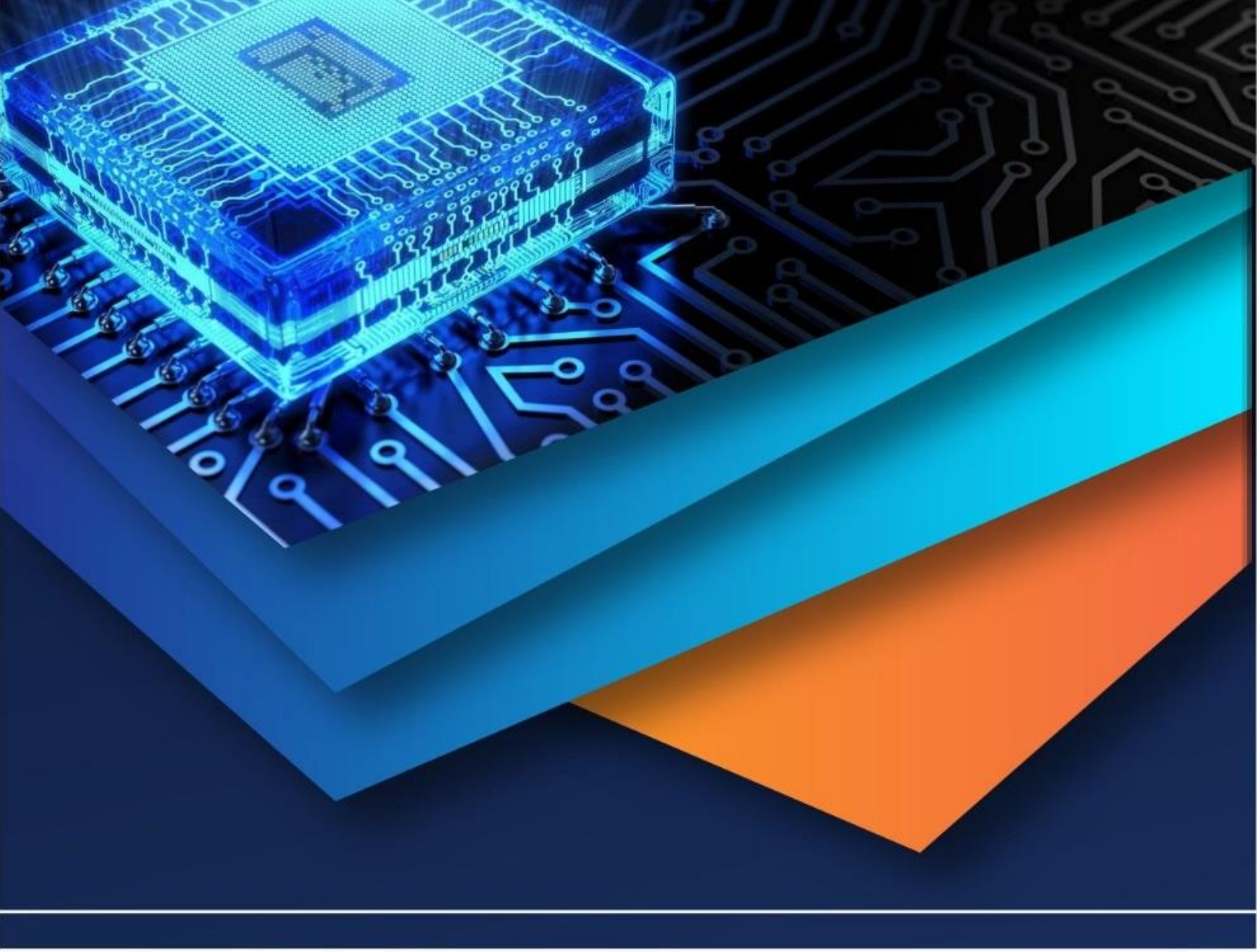

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