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Proposed System-Automatic Vehicle Horn Intensity Control System

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Abstract: This paper presents the system that can be used to control the horn intensity in a vehicle. Nowadays noise pollution is increasing rapidly due to the advancement in technology. There are many sources of noise pollution like vehicles, airplanes, mining and public noise. Vehicle is the most prominent sources of noise pollution among these so we decided to make a horn intensity control system. This system will help us to minimize the noise pollution. This system uses an Arduino that will control the horn intensity of a vehicle with respect to running status of the vehicle. When the vehicle will be in the running state (high speed) the horn intensity will be high and when the vehicle is in low speed then the horn intensity will be low.

Keywords: Arduino UNO, noise pollution, traffic, horn intensity control, noise pollution control.

I.

INTRODUCTION

The noise produced by horns of vehicles is the major cause of noise pollution all over the world. Vehicle horns are used by drivers to alert other drivers in the vicinity. But this may disturb the other fellow drivers, passengers, and people living nearby. Also noise pollution is a major cause of diseases like Hypertension and insomnia if sound levels are greater than 120dB. Local governments issue permanent or temporary regulations the horn operations. However, some drivers ignore such traffic signs or forget or do not know of such regulations, so we have come up with a solution to this issue. We cannot completely stop this issue but we can minimize it. Using Arduino and simple IR sensors, we were successful in generating a system to reduce noise pollution created by honking.

II.

LITERATURE SURVEY

This section describes the previous work and research done with related topics. Automatic Vehicle Horn Control System Using Proximity Sensors. In this paper by SAI KRISHNA PRASAD P, S.KEERTI, PARTHIV T, SURENDAR S, the honking of horn is detected or work only when the other vehicle is in the given range of at given specific distance. Here the proposed system is that the horn won't work unless a vehicle is close enough or else simply the horn won't work. By this way it can avoid all the noise pollution and give a noise free environment, this project ensures that there will be less noise generated by horn and we can avoid the unnecessary honking where it is not at all required.

III.

PROPOSED SYSTEM

The system is operated with the Arduino UNO. We are controlling the intensity of the horn of a vehicle. To represent the horn of vehicle we have interfaced a buzzer as an output in this project model. Three IR sensors are interfaced to the Arduino to detect the input. We are placing these three IR sensors on the speedometer of the vehicle on the mark of 0Kmph, 30Kmph and 60Kmph respectively. Respective output of these IR sensors are connected to the buzzer and two registers of high value and second of low value are connected between first and second IR and buzzer respectively. These registers will control the intensity of buzzer. A switch is connected between IR and buzzer. The system is shown in Fig. 1 below.

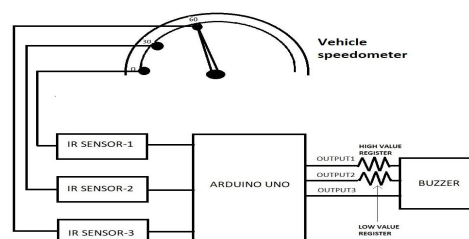


Fig. 1 A block diagram of model of automatic vehicle horn intensity control system

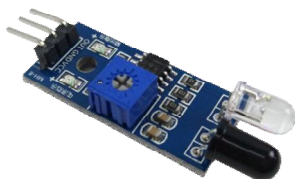
A. Arduino UNO

The Arduino Uno board is a microcontroller based on the ATmega328. It has 14 digital input/output pins in which 6 can be used as PWM outputs, a 16 MHz ceramic resonator, an ICSP header, a USB connection, 6 analog inputs, a power jack and a reset button. This contains all the required support needed for microcontroller. This operates on the voltage between 7 and 20 volts.



B. IR Sensors

An infrared sensor emits and/or detects infrared radiation to sense its surroundings. The basic concept of an Infrared Sensor which is used as Obstacle detector is to transmit an infrared signal, this infrared signal bounces from the surface of an object and the signal is received at the infrared receiver.



C. Buzzer

One of the most common choices for Arduino is a buzzer. General purpose piezo buzzer used commonly in alerting / alarming circuits. Buzzer is transducer which convert electric signal to the sound. A buzzer is a device which makes a buzzing or beeping noise.





IV.

Noise pollution seems to be a general problem, but when seen through global perspective it is a major issue. When honking unnecessarily is reduced it results in a peaceful environment and less stress for the daily travellers. Travelling is a part of day to day life for every human, so when noise due to unnecessary honking is eliminated humans will be able to sleep, concentrate and improvise their memory efficiently. Therefore, with this this initiative overall stress is reduced and a peaceful journey will begin.

V.

It is our immense pleasure to work on the project Automatic vehicle horn intensity control system. We take this opportunity to express deep gratitude and sincere thanks our Principal, Dr. K T V Reddy for giving us such an opportunity to develop practical knowledge about subject.

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