Anti-collision system in vehicle using controller

Ashwini bhise, manoj dodmise , sangeeta gitte, sharad karale

[1] *student, electrical engineering, trinity college of engineering and research, Maharashtra, India*
[2] *student, electrical engineering, trinity college of engineering and research, Maharashtra, India*
[3] *student, electrical engineering, trinity college of engineering and research, Maharashtra, India*
[4] *student, electrical engineering, trinity college of engineering and research, Maharashtra, India*

ABSTRACT

Accident threatens human lives more and mainly road accident is common today. During accident many people lose their life because medical services and family member not getting accidental information on time. In this paper, an efficient vehicle wireless system is designed and implemented for vehicle accident detection and reporting using accelerometer and GPS. Accelerometer sensor is used to detect crash and GPS give location of vehicle. In case of any accident, the system send automated message to the preprogrammed number such as family member or emergency medical services via GSM,also our latest technology captures instant images so that it may help in legal process .

Keyword : *Introduction ,Block Diagram,Litreture Survey,Component Discription*

I. INTRODUCTION

The invention and development of technology is increasing gradually and it is giving human race a new height in every moment. Road accident is one of the biggest safety issues. Road accident is the leading cause of death by injury and the tenth-leading cause of all deaths globally. Thinking regarding this, automobile is most probably the one which significantly changed human life by inventing anti collision system.The anticollision device is a detection device meant to be incorporated into cars for the purpose of safety. Ultasonic sensor to detect obstacles and approaching stop signal from a location data. The paper provides systems and methods for preventing a vehicle from reverse movement on a slope and hill. The system comparison of a heavy commercial vehicle. A ratchet and pawl device connected to at least one wheel of the vehicle. And mechanism i.e Actuator which will control the movement of the pawl while engaging or disengaging the mechanism where in the system may be engaged using an engaging mechanism when reverse motion is undesirable or to be restricted, and may be disengaged when the reverse motion is desirable and is to be.

II, LITERATURE SURVEY

1.Adama Science and technology University Ethiopia : -

Made a model of sear end anti collision warning system that will detect the distance between two Vehicles moving on the Same lane in the same difection and alest the deives wheneves She of he is in danger range using miceoconteales.

2.AIU American International university:-

The afseasch mica ucentrolled based en lautomated cas anti-collision system detecting obstacle by the Shake distance sensor and aleets within close distance of collision and it monitoes the condition of the vehicle..

3.Automatic accident detection and Notifica tion system with smast Image captusing Technique: -

In this system. efficient Vehicle wireless system is designed and implemented for vehicle accident detection & deposting using accelerometer and gps.

II.   METHODOLOGY:

Road accidents are on the rise these days. And it is causing a lot of loss of life. Millions of accidents occur every year road accident is the leading cause of death by injury and the tenth-leading cause of all deaths globally. Thinking regarding this, automobile is most probably the one which significantly changed human life.To protect people from accidents, we have created this anti collision system in which we can prevent accidents by installing sensors and you can see the exact location of the accident of your car on your mobile and also by using the sensor you can avoid accidents of two vehicles. the goal of our initiative is to minimize acciden

THEORY:-

III.WORKING:

Before going to working of the project, it is important to understand how the ultrasonic sensor works.Ultrasonic sensor The basic principle behind the working of ultrasonic sensor . The HC-SR04 ultrasonic sensor uses SONAR to determine the distance of an object just like the bats do. It offers excellent non-contact range detection with high accuracy and stable readings in an easy-to-use package from 2 cm to 400 cm or 1 to 13 feet.

black material, although acoustically, soft materials like cloth can be difficult to detect. It comes complete with ultrasonic transmitter and receiver module. The basic idea behind this project to avoid accidents . It is a precautionary measure that alerts the driver. Here Auduino controls the heart of all tasks.

 The Arduino Uno : is An open source microcontroller board based on the microchip a tmega 328p. Microcontroller and developed by Arduino . this is an Arduino based collision detection warning system . This kind of system is the fastest growing safety features in automotive industries such a system enables vehicles to identify the chances of

collision and give visual And Audio warning to driver so that the driver can take necessary action to avoid collision. A distance sensor is connected to the Aurduino kit . alcohol sensor :detects the attentiveness of alcohol gas in the air and an analog voltage is an output reading. The sensor can activate at temperatures ranging from -10 to 50° C with a power supply is less than 150 Ma to 5V. The sensing range is from 0.04 mg/L to 4 mg/L. MQ3 is one of the most commonly used sensors in the MQ sensor series. It is a Metal Oxide Semiconductor (MOS) type of sensor. Metal oxide sensors are also known as Chemiresistors, because sensing is based on the change of resistance of the sensing material when exposed to alcohol. So by placing it in a simple voltage divider network, alcohol concentrations can be detected.MQ SnO2 semiconductor layer is heated at high temperature, oxygen is adsorbed on the surface. In clean air, electrons from the conduction band in tin dioxide are attracted to oxygen molecules. This form an electron depletion layer just below the surface of SnO2 particles and forms a potential barrier. As a result, the SnO2 film becomes highly resistive and prevents electric current flow.

Gsm
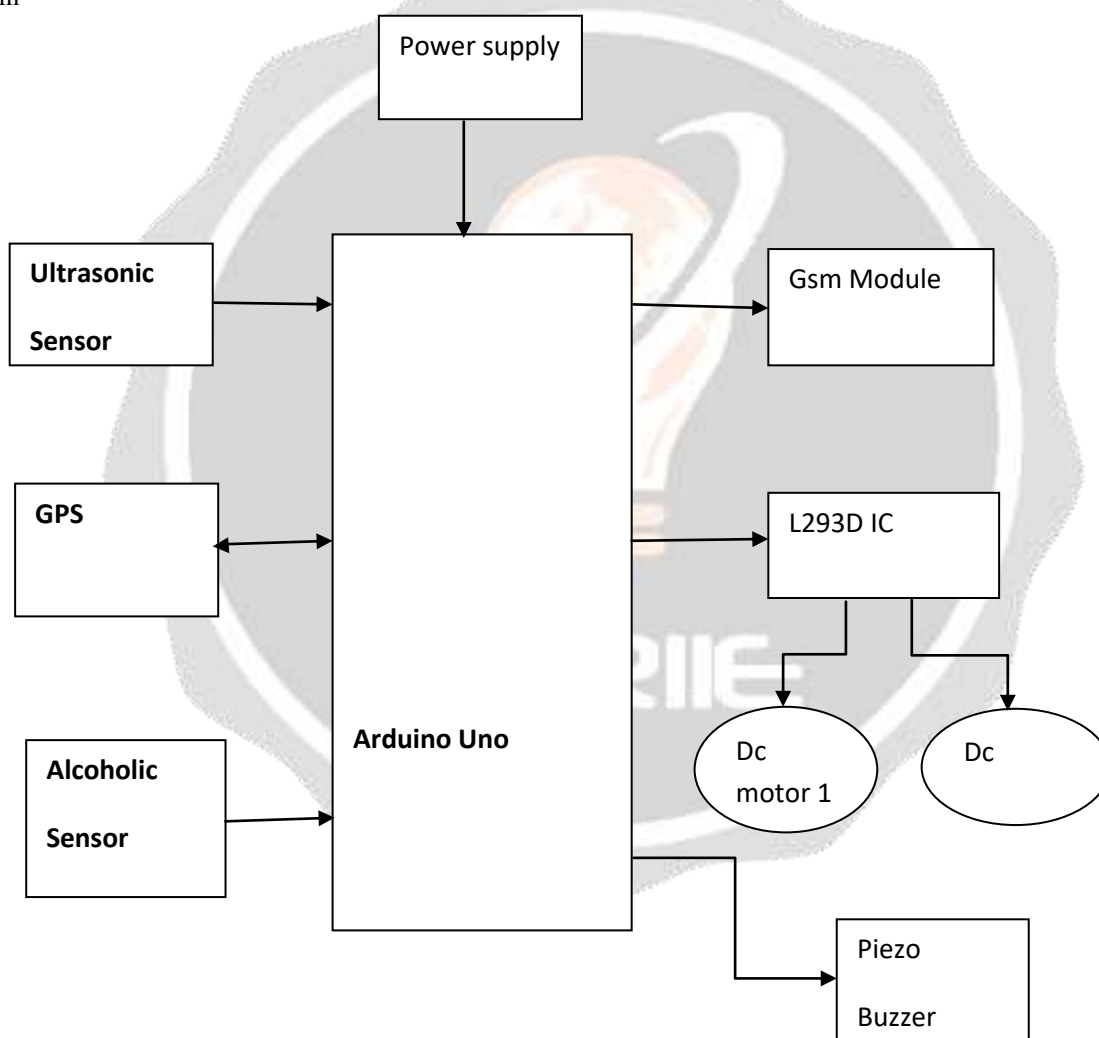
GSM:

 stand for global system for Mobile communication, text messaging was developed first for gsm, whilst the advantage for network operators has been the low infrastructure cost which is caused by open competition .in this project we use the gsm for the messaging purpose after sensing the distance for collision. Gsm system from the point of view of the consumer has been early delivery of new service at low cost .

when the any object is near by the vehicle they indicate the message in mobile phone and allert you.

GPS:

GPS stand for global positioning system owned utility that provides users with positioning , navigation and timing services. This system consists of three segment ,the space segment ,the control segment and the user segment.

Anticollision System In Vehical:
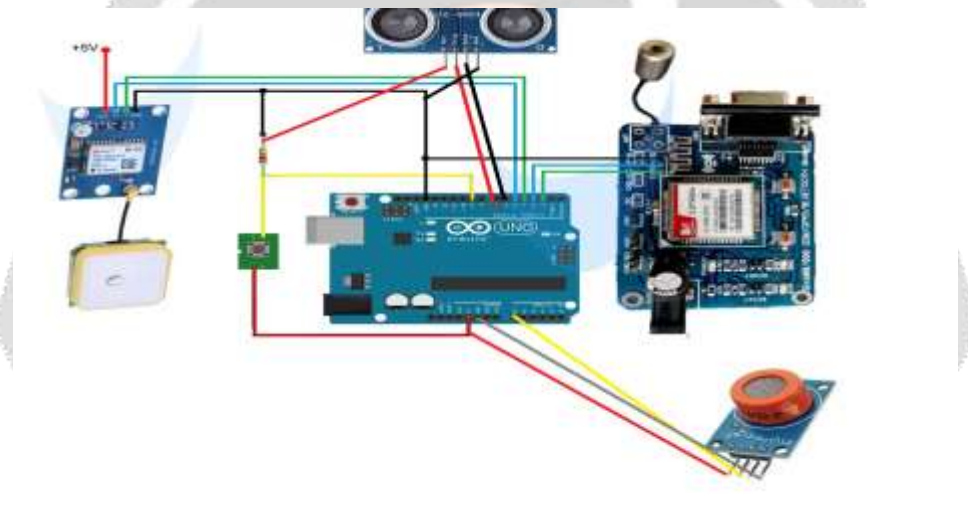
Piezo buzzer:

 piezo buzzer" is basically a tiny speaker that you can connect directly to an Arduino."Piezoelectricity" is an effect where certain crystals will change shape when you apply electricity to them. By applying an electric signal at the right frequency, the crystal can make sound.   Connect one pin (it doesn't matter which one) to the Arduino's ground (Gnd) and the other end to digital pin 8.From the Arduino, you can make sounds with a buzzer by using tone. You have to tell it which pin the buzzer is on, what frequency (in Hertz, Hz) you want, and how long (in milliseconds) you want it to keep making the tone.The aim of this project is to implement an obstacle avoiding car using ultrasonic sensor and Arduino. All the connections are made as per the circuit diagram.
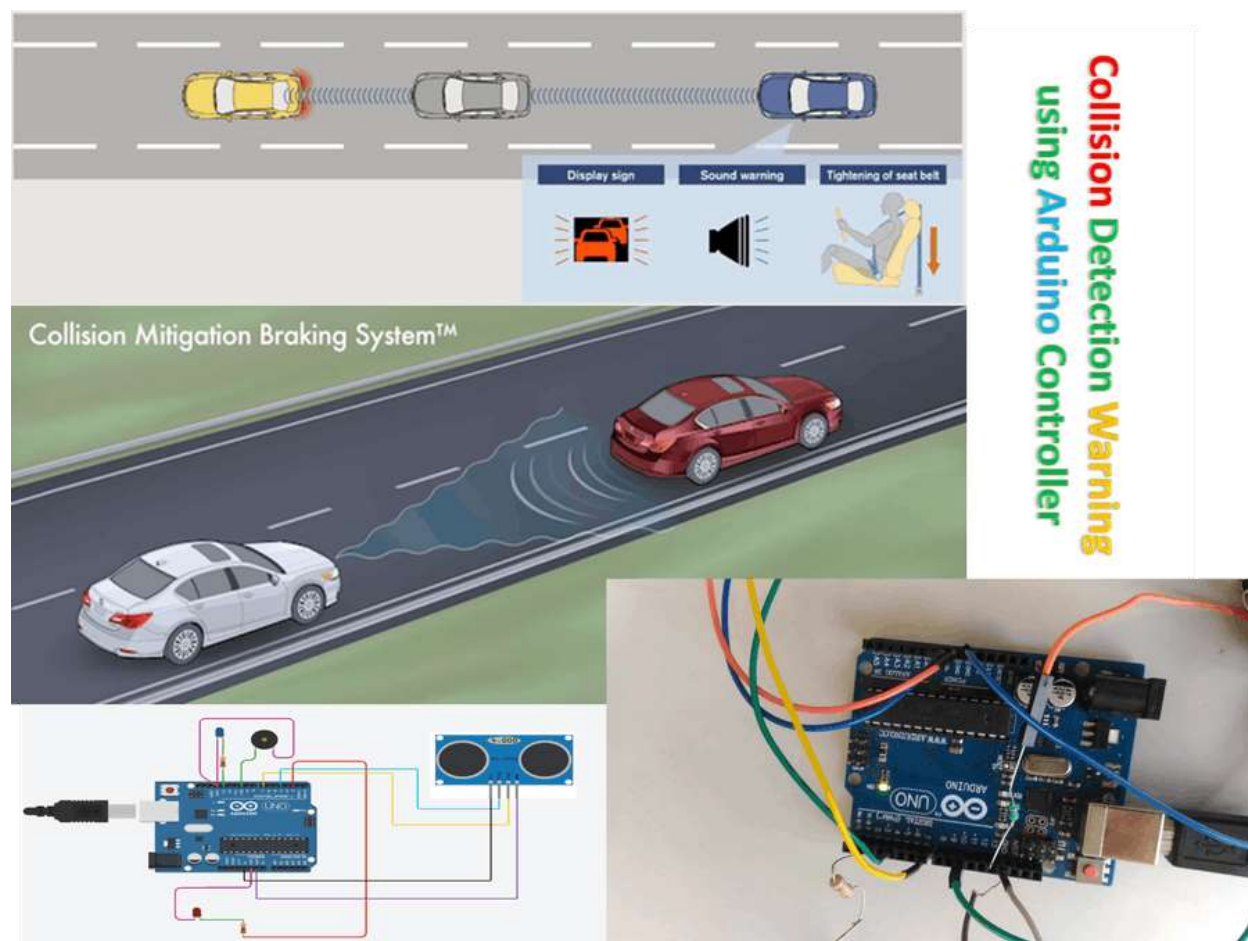
4. CONCLUSIONS

Technology should be used for welfare. We don't want to see any life spoiling because of vehicle collision. If this system is used in vehicles, it will contribute to prevent this global problem of vehicles collision and save human life. It will also be able to contribute to stop economic harm caused by vehicle collision.

We want this research to be implemented virtually during manufacture in near future and to be spread to general people to play a significant role in mankind. Automated anti-collision systems are being used in expensive vehicles but our anti-collision system will open a new horizon as it can be used any vehicles at a very low cost.

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