

WELCOME

ACCIDENT ALERT SYSTEM

Submitted By: -

Harshal Humne :- 322020

Samruddhi Desai :- 322063

Rutvik Babar :- 322002

Jeet Kansagara :- 322026

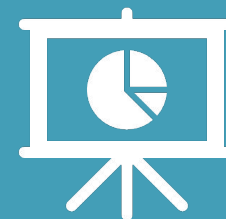
INTRODUCTION



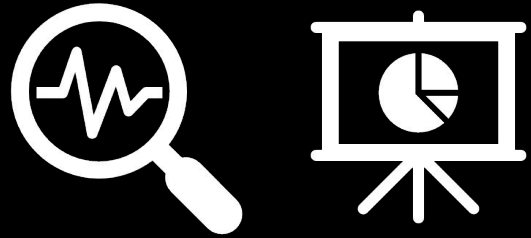
- 1 Why ?
- 2 What ?
- 3 How ?

- ① India tops the world in road crash deaths and injuries.
 - ② It has 1 per cent of the world's vehicles but accounts for 11 per cent of all road crash deaths.
 - ③ Witnessing 53 road crashes every hour; killing 1 person every 4 minutes.
 - ④ The crash costs at Rs 5.96 lakh crore or 3.14 per cent of gross domestic product (GDP).
-

Literature Survey



Literature Survey



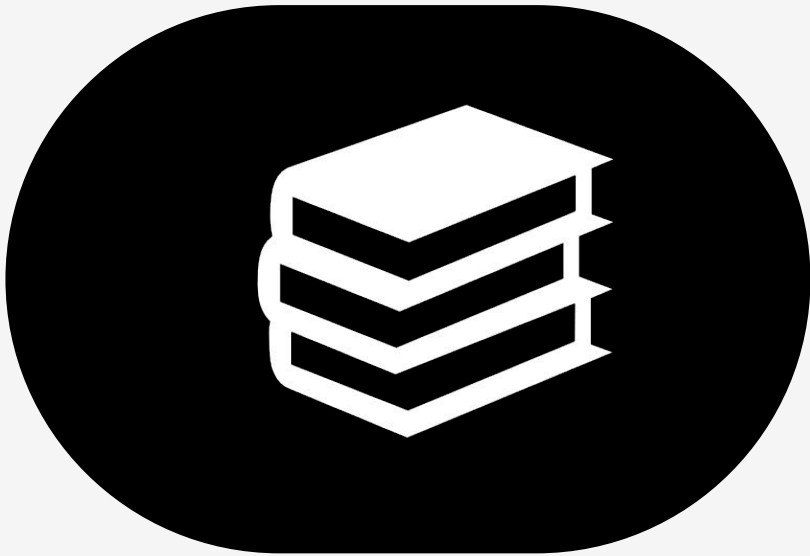
5

The death rate per 100 accidents on national highways increased from 28 in 2006 to 35 in 2011 and 37 in 2016.

6

Deaths per 100 accidents on state highways is relatively low and estimated to be 26 in 2006 and 32 in 2011 and reached up to 35 in 2016.

References



- 1 Alam, Absar. (2019). Road Accidents in India: Need for Post Accident Health Care Facilities. 89. 64-85.
- 2 Ministry of roadways.
- 3 IEEE Conference paper.
- 4 MyGov innovate.
- 5 Vehicle tracking and Accident alert System NIT, Rourkela.

Algorithm and Block Diagrams

6



Hardware List and Cost



- 1 Arduino UNO
- 2 Ultrasonic Sensors- 4N-
- 3 Force Sensor- 4N -
- 4 GPS Module
- 5 GSM Module

Arduino UNO

- It **a microcontroller board** developed by **Arduino.cc**
- **An open-source electronics platform** mainly based on **AVR microcontroller Atmega328**
- The current version of Arduino Uno comes with **USB interface, 6 analog I/O pins, 14 I/O digital ports**.
- Allows the designers **to control and sense the external electronic devices** in the real world.



Rate: 250 /-

UltraSonic Sensor



Rate: 59/-

- It **measures the distance of a target object by emitting ultrasonic sound waves, and converts the reflected sound** into an electrical signal.
- Ultrasonic **waves travel faster** than the speed of audible sound (i.e. the sound that humans can hear).
- It has two main components: the **transmitter** (which emits the sound using piezoelectric crystals) and the **receiver** (which encounters the sound after it has travelled to and from the target).

- **Sir Franklin Eventoff**, in the 1970s, found some materials, when **subjected to force, can change their resistance values.**
 - These materials were known as **Force-Sensing Resistors.**
 - These materials are **used to produce a sensor that can measure the Force.**
 - A Force Sensor is a sensor that helps in **measuring the amount of force applied to an object.**
-

Force Sensor



Rate: 475/-

GPS



Rate: 475/-

- The **Global Positioning System (GPS)** is made up of **satellites, ground stations, and receivers**.
- GPS module comes in a complete package that **requires no other external circuitry** for GPS reception.
- It **may or may not contains antenna** on it.
- Antenna is **connected to the GPS module using RF cable**.
- If someone has less knowledge or do not want to invest in GPS technology, but just want to use GPS system in his hardware, then GPS module is best solution there.

- GSM is generally called as **Modem (Global System for Mobile Communications)**.
 - In this modem, **Bluetooth is interfaced by default**.
 - Basically there are three types of GSM module are there. They are **Data Loggers, Data Pushers, Data Pullers**
 - It is a **wireless communication module**, which will be used to communicate with a computer or processor over the network.
 - In addition to this, we can **add Wi-Fi module**, to **upload the data into remote cloud**, to access it from anywhere in the world.
-

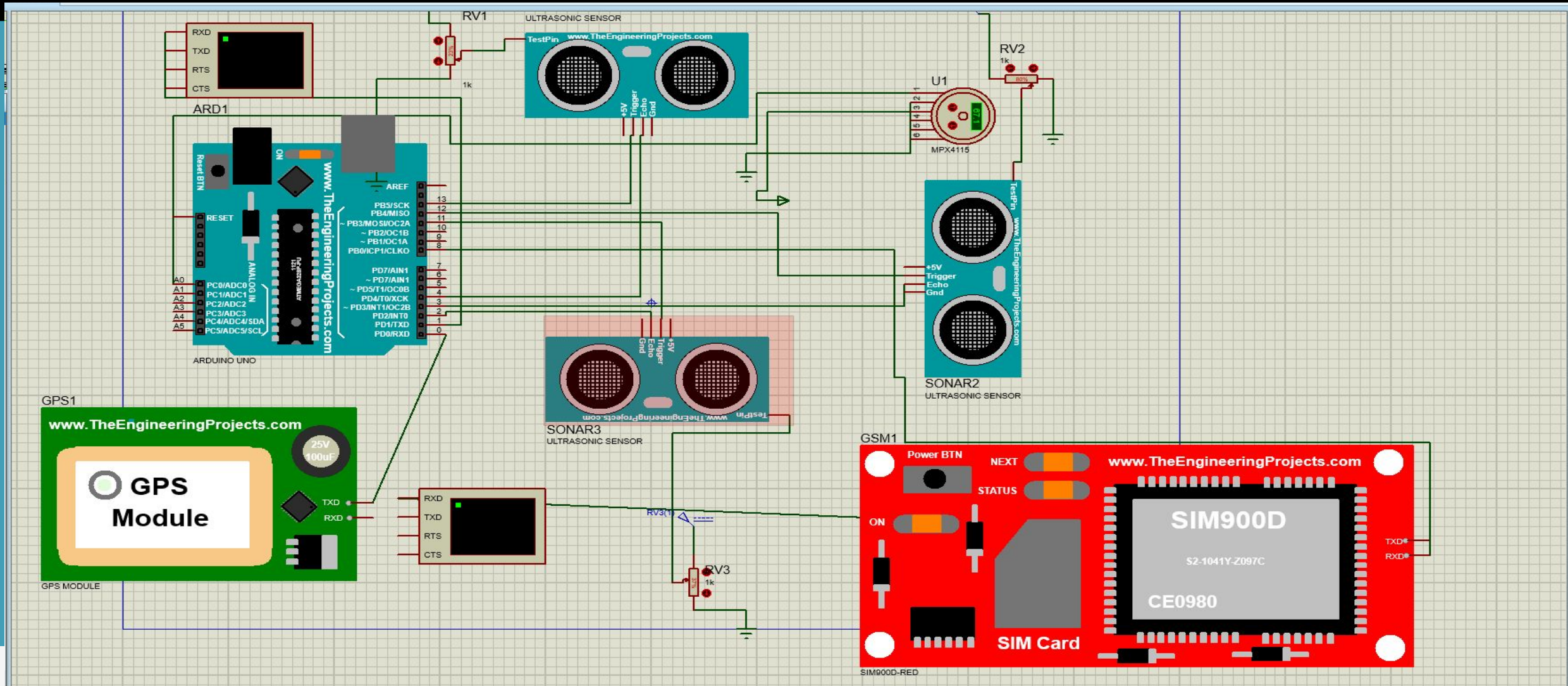
GSM



Rate: 1000/-

Circuit

13



METHODOLOGY

- Step 1:- Ultrasonic sensors and pressure sensor continuously monitors the pressure applied and the objects in the proximity of the Automobile.
- Step 2:- If an object comes under the proximity of an automobile then the system displays warning on the screen
- Step 3:- If the pressure experienced by the car exceeds a particular threshold then a message with the coordinates of the accident location is sent to the connected hospital and police station.

- ① Smart traffic signaling clearing path for Emergency vehicles.
- ② Smart Hospital system so that the hospitals are ready for operation before person arrives.

An mobile app where the driver has to add his and passengers details.

- ③

Future Scope



Future Scope



4

Use of Blockchain technology.

5

Linking the system to airbag.

Benefits

- Speedy Rescue
- Creating new opportunities
- Creates an useful Database
- Help Build better roads
- More accurate documentations

