AUTOMATIC ACCIDENT DETECTION ALARM SYSTEM THROUGH INTERNET

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Abstract: -

The aim of this project is to reduce the number of deaths that are caused due to accident everyday in India, its very large number of 462 deaths per day In year 2022 from which approximately only 100 are instant deaths but all others are due to late medication\help so it can be reduced by reducing the time taken to report the accident to the passenger's family and helping services like police and ambulance.

To overcome this problem, we got an idea of an automatic accident detection system and alarm by means of call and E-mail to the Passenger's family members which includes vehicle number, Date, time of Accident. It can be developed even more by adding exact GPS location to make it easier for the helping services and family to detect the location and take quick actions.

Introduction: -

As I already mentioned about our project in abstract "Automatic Accident Detection Alarm System Through Internet" our motive is to help to reduce accidents daily and

for that we made the working prototype showing its basic functionality and the way by which it can help saving many lives.

   We got an idea from the news of "Times Of India" one day showing the deaths due to accident in year 2022 which is great number of 1.68 Lakh (Road Accidents) which means 1 In every 3 minutes and because of which after much research we got to know that this technology is not at all developed properly by big companies which only sends notification on users phone which is not much reliable cause no one has much time to read all notification and get alerted so according to me the call would be far better from just a notification and it will be more effective.

THE TIMES OF INDIA   OPEN APP

Record 1.68 Lakh Road Accident Deaths In 2022; 1 Every 3 Minutes

INDIA | Dipak K Dash | TNN | Oct 13, 2023, 11:49 IST

India has reached a record high number of road crash fatalities in 2022, with over 1.68 lakh deaths, equivalent to 462 deaths per day or one every three minutes. This increase is concerning, especially since India aims to halve the number of deaths by 2030. The number of injuries resulting from road crashes is also rising, with 4.43 lakh people injured in 2022 compared to 3.84 lakh in 2021.

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**Minister of State for
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and Civil Aviation
Government of India**

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सत्यमेव जयते

आज़ादी का
अमृत महोत्सव

MESSSAGE

    Road traffic injuries are the leading cause of death globally and the principal cause of death in the age group of 15 to 49 years. Every year the lives of approximately 1.3 million people are cut short globally as a result of a road traffic crash. Unfortunately, more than 90 percent of road traffic deaths occur in low- and middle-income countries, even within high-income countries, people from lower socioeconomic backgrounds are more likely to be involved in road traffic crashes. India, ranks at the top with highest number of fatalities with about 11% share in the world.

2.   The issue of road safety becomes even more important for India, having one of the largest road networks in the world. The unprecedented rate of motorization and growing urbanization fueled by high rate of economic growth have compounded the problem. Every year, approximately 1.5 lakh people dies on India roads, which translate, on an average, into 1130 accidents and 422 deaths every day or 47 accidents and 18 deaths every hour.

3.   Road traffic accidents are amenable to remedial actions and the Ministry has been implementing a multi-pronged road safety strategy based on 4-Es, namely Education, Engineering (both of roads and vehicles), Enforcement and Emergency Care. The strategy is under implementation; substantial progress has been achieved. The Motor Vehicles Act (MVA) 2019, was one of the foremost steps that has initiated this journey. The identification of Black Spots has been a critical intervention and has helped MORTH focus and plan out its rectification efforts. Other initiatives such as the Integrated Road Accidents (IRAD) Project under World Bank assistance to provide a real time data and analysis in line with international practices, schemes to set up automated vehicles inspection centre's and driver training centre's, publicity and awareness campaign to ensure road safety at the grassroots level etc. are a few to name.

4.   I hope that the data on different facets of road accidents and analysis contained in this report will be useful to policy makers in States /UTs as well as for other stakeholders. I would like to extend my gratitude to the Police Departments of all States/U.Ts who have provided data/information in time. I also express my appreciation towards my colleagues in the Transport Research Wing for the continuous efforts in bringing out this publication on time.

Gen. (Dr.) V. K. Singh

Original Government Document: -

https://morth.nic.in/sites/default/files/RA_2021_Compressed.pdf

Hardware/Software Description: -

- Arduino Uno. (IC= ATmega328P, 6-20v, digital pins=14, analog pins= 6, PWM pins= 6)
- NodeMcu (ESP8266, 32 bit, 7-12v, digital pins=16, anaog pins=1)
- 16*2 I2C Lcd Display.(4.7-5.3v, 1mA, 32 alphabets, both 8-bit and 4-bit)
- Toggle Switch.
- Jumper Wires
- Buzzer.(5v, I<15mA, -20C to 60C)
- Resistor (2*10000 ohms)

We used **"Arduino Ide"** for Programing purposes.

Mathematical Preliminaries: -


Working Of Model: -

Our model uses the conducting circuit mechanism for accident detection by which we can sense the there is the impact on the car body and the inner layer of vehicle is in contact with the external layer which is caused by an accident, it can also improved by adding som sensors like impact sensor and vibration sensor to sense the impact and set threshold value for detecting accident which will help us to get more accurate accident readings and reduce false allarms.

As I mentioned that our sensing is not that suitable so we have added one more feature in our prototype which is operated by Toggle Switch and can terminate the process of alarm, it will be placed reachable to driver so as the driver will listen the buzzer sound and he will get to know that its an false alarm, he can terminate the process by toggling the switch in 10 seconds which will be displayed on LCD display and after toggling switch all the actions will stop.

But if the accident is not false alarm then passinger/Driver will not toggle the switch which will confirm the accident and it will triger the NodeMcu and send call and Email to the desired email.
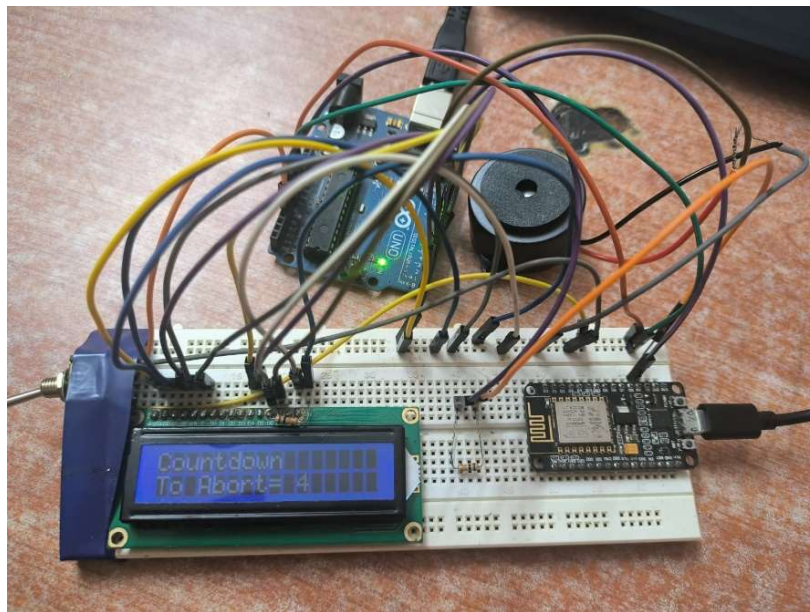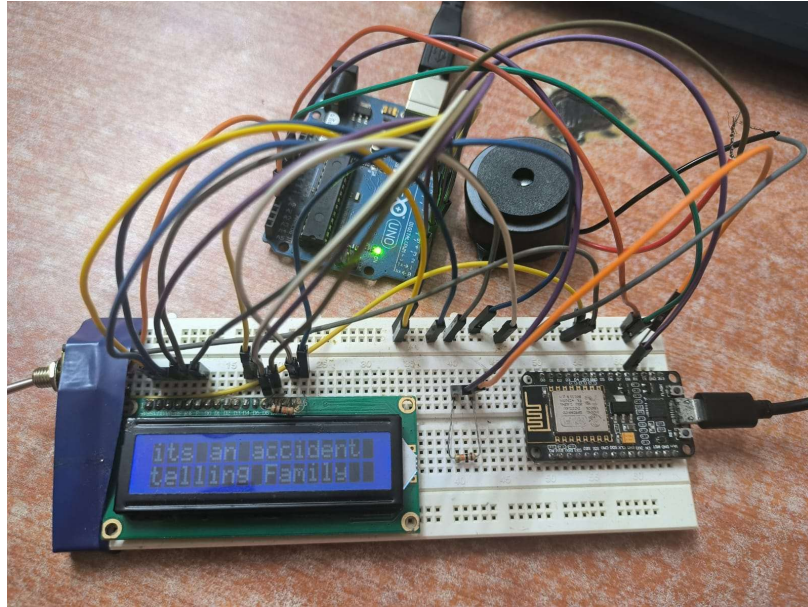
Result and Analysis: -

After completing this project we got to know that how easy it is to solve this big national problem and it should be given importance by the vehicle companies to add this feature inbuilt in vehicle, this will make it easier to circulate this safety feature and become the helping hand for our country.

Conclusion: -

We got the desired output we needed for the for the problem we discovered and we hope that this project will help in the field of road safety.

References: -

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