ACCIDENT ALERT IN PIN DROP AREAS

MORADABAD INSTITUTE OF TECHNOLOGY

Project Coordinator- Anurag Agarwal Assistant Professor of MIT

Project Coordinator- Isha Singh Assistant Professor of MIT

Project Members-Sugandh Gupta, Ankit, Kusum Yadav,Yogesh Rajpoot

Abstract

This project is developed for the users to have accident alert in modern traffic system. This device can be used in highly accidental area and pin drop curves to avoid accidents. In India there are so many curve areas like Nainital, Haridwar etc. Due to random curves it is very difficult to determine that at which speed we should drive, usually people think they have experience so they drive at high speed just to save their time. They do not know, that vehicle from the opposite side is coming at which speed? as a result accident takes place. This project help to avoid accidents in these types of areas and it will help to track the location of vehicle as well.

This project consists of two transmitters and two receivers. One transmitter is connected first(one arm of the curve) and a receiver is fixed just opposite to the transmitter, The other transmitter is connected at the same side(other arm of the curve) and the receiver is fixed just opposite to the second transmitter.

When the vehicle passes the first transmitting and receiving unit (one arm of the curve), it senses that one vehicle is crossing. When it crosses the second unit (other arm of the curve),it also senses. The microcontroller unit calculates the speed=displacement/time taken.

If speed exceeds the particular value, it sends signal to the other side vehicle to be alert. It also alerts the other side vehicle when someone crosses one side .Also it captures the high speed vehicle .Thus the high speed vehicle can be traced easily.

1.INRODUCTION

Over 1,37,000 people were killed in road **accidents** in 2013 alone, that is more than the number of people killed in all our wars put together. There is one death every four minutes due to a road **accident** in **India**. Drunken driving is one of the leading causes of road fatalities.

The Rapid growth of technology and infrastructure has made our lives easier. The advent of technology has also increased the traffic hazards and the road accidents take place frequently which causes huge loss of life and property because of the poor emergency facilities. Our project will provide an optimum solution to this draw back.

Vehicle tracking system main aim is to give Security to all vehicles. Accident alert system main aim is to rescuing people in accidents. This is improved security systems for vehicles. The latest like GPS are highly useful now a days, this system enables the owner to observe and track his vehicle and find out vehicle movement and its past activities of vehicle.

This new technology, popularly called vehicle Tracking Systems which created many wonders in the security of the vehicle. This hardware is fitted on to the vehicle in such a manner that it is not visible to anyone who is inside or outside of the vehicle. Thus it is used as a covert unit which continuously or by any interrupt to the system, sends the location data to the monitoring unit. When the vehicle is stolen, the location data from tracking system can be used to find the location and can be informed to police for further action. Some Vehicle tracking System can even detect unauthorized movements of the vehicle and then alert the owner. This gives an edge over other pieces of technology for the same purpose.

This accident alert system in it detects the accident and the location of the accident occurred and sends gps coordinates to the specified mobile, computer etc

2.RELATED WORK

- **NATIONAL INSTITUTE OF TECHNOLOGY RROURKELA**

BY KOMMENENI RAKESH

Initially the GPS continuously takes input data from the satellite and stores the latitude and longitude values in AT89s52 microcontroller's buffer. If we have to track the vehicle, we need to send a message to GSM device, by which it gets activated. It also gets activated by detecting accident on the shock sensor connected to vehicle. Parallely deactivates GPS with the help of relay .Once GSM gets activated it takes the last received latitude and longitude positions values from the buffer and sends a message to the particular number or laptop which is predefined in the program. Once message has been sent to the predefined device the GSM gets deactivated and GPS gets activated.

- **Rashida Nazir, Ayesha Tariq, Sadia Murawwat*, Sajjad Rabbani**

Department of Electrical Engineering, Lahore College for Women University, Lahore,

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Modification:: When we see the accident rate in INDIA ,we decided to do something for overcoming it. After some weeks we see above project and we have decided to do work over this project .This project was for only roads but we thought this project should be for pin drop area as well. This project have two loop and works on feedback system. This project will prevent accident at curve areas. As above project it also have GPS system for tracking location of vehicle.

3.SYSTEM DESCRIPTION

Components

- **2 IR sensors** [Range:10-15cm, Input supply:5V DC, Three pin burg male header for easy interface, Output for logic 1(+3.5v) & logic zero(0.0v)].This is used for measuring the speed of vehicle. Basically it isnot that accurate but we are using it because it if efficient to our budget .We can also use Bluetooth and PIR sensor as well in place of it.
- **2 Arduino** (It is a microcontroller board based on ATmega328 , has 14 digital input output pin, 16MHz crystal oscillator).This is used for programming part.

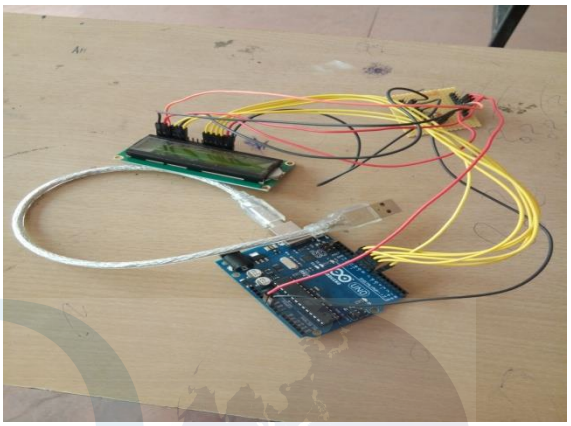

Figure 1: Arduino with LCD interfacing

- **2 LCD Displays** (16*2 LCD indicates it can display 32 characters in 2 lines). LCD are used here for displaying speed in digital form by interfacing with Arduino. 2 Variable Resistor
- **IR Transmitter** (It is a Arduino breakout for a simple and clear infrared LED on it, this LED operates around 940nm)

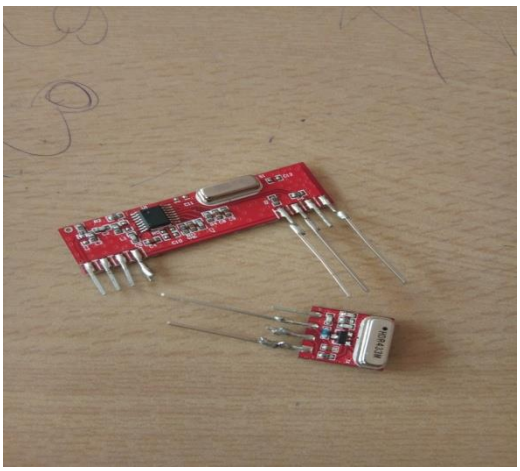

Figure 2: Transmitter & Receiver

- **IR Receiver** (It is a breakout board with IR detector mounting on it,it is a little

microchips with a photocell that are tuned to listen to infrared light at 38KHz)

- **GPS Module**(GY-NEO6MV2 board features the u-blox NEO-6M GPS module with antenna and built in EEPROM, power supply 3 to 5V). It is location tracker (global positioning system)
- **1 Solar panel** (For power supply)
- **Another 2 Power Supplies**
- **GSM Module SIM900A Simcom** (operation temperature: -40 to +85'C)

Figure3: GPS Module

4.WORKING

This project consists of two transmitters and two also have two receivers .One transmitter is connected first(one arm of the curve) and a receiver is fixed just opposite to the transmitter, The other transmitter is connected at the same side(other arm of the curve) and the receiver is fixed just opposite to the second transmitter.

When the vehicle passes the first transmitting and receiving unit (one arm of the curve), it senses that one vehicle is crossing. When it crosses the second unit (other arm of the curve),it also senses. The microcontroller unit calculates the speed=displacement/time taken.

If speed exceeds the particular value,it sends signal to the other side vehicle to be alert. It also alerts the other side vehicle when someone crosses one side .Also it captures the high speed vehicle .

Here speed of vehicle is determined by the IR sensors that are placed at both arms of curve area. The microcontroller is used here is ARDUINO Atmega 328.Fisrt of all the IR sensors capture the speed of vehicle from one side and send it to the transmitter. Output of transmitter is given to the ARDUINO chip, here it checks that speed is normal or high. If speed is normal ,ARDUINO sends the signal to LCD not to show any output to the other side. If speed is excess, ARDUINO checks it and sends signal to LCD to show speed at the other side.Same procedure is at another side.

Figure 4: Circuit of Project

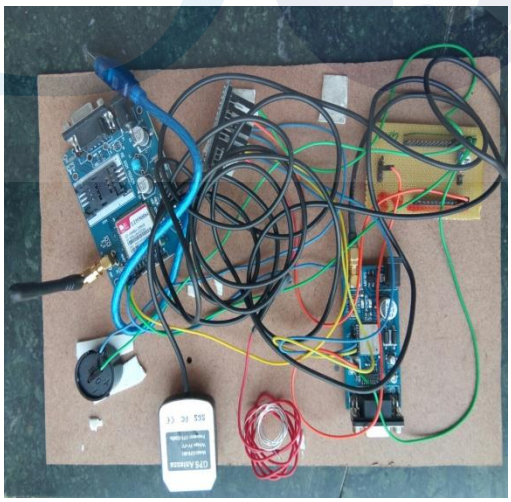

Figure 4: GPS Module with GSM

5.RESULT

The results of the system were up to mark. The snap shots of the hardware and various messages shown on the hardware LCD has been shown in this figure. This system provides immediate response to those who have been injured during an accident. The system was able to detect collision effectively when tested on a miniature level. As single axis of accelerometer had been used, it failed

to detect a side on collision. The panic switch concept worked perfect.

6.CONCLUSION

Vehicle tracking system makes better fleet management and which in turn brings large profits. Better scheduling or route planning can enable you handle large jobs within a particular time.

Vehicle tracking both in case of personal as well as business purpose improves safety and security, communication medium, performance monitoring and increases productivity. So in the coming year, it is going to play a major role in our day to day living.

Main motto of the accident alert system project is to decrease the chances of losing life in such accident which we can't stop from occurring. Whenever accident is alerted the paramedics are reached to the particular location to increase the chances of life. This device invention is much more useful for the accident occurred in midnights and pin drop areas. This vehicle tracking and accident alert feature plays much more important role in day to day life in future.

7.REFERENCES

- RS KHANDPUR microprocessor architecture programming & application WILEY EASTERN LTD. NEW DELHI.
- KRISHNA KANT "Microprocessor & Microcontroller" EASTERN COMPANY EDITION NEW DELHI 2007.
- DANIEL .W LEWIS fundamentals of embedded software "prentice hall of INDIA 2004.
- WILLIAM STALLING Wireless communication & networks", 2nd edition 2005 prentice hall of INDIA.
- The 8051 microcontroller & embedded system by MUHAMMAD ALI MASIDI JANIE G. MASIDI & ROLIN D. MCKINLAY ;Prentice hall international.