

Design and Implementation of Alcohol Sensing and Accident Alert System

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ABSTRACT

These days accidents happen on the street on account of increment in rush hour gridlock and rash or snoozing driving of the drivers. A few accidents happen inferable from the utilization of alcohol. So licker alcoholic driving is the furthermore fundamental purpose behind mishap occurs. The alcohol location in-vehicle framework is assumed for the front of people seating inside the vehicle and in a few things, might want the auto and police expert isn't hip in time. Along these lines reasons for postponing encourage came to the individual endured because of a mishap. Propositions proposed configuration comprise is with respect to alcohol discovery and likewise a coincidental location recognition. When a mishap occurs, in this manner promptly emergency message is sent to closest emergency administration focus with inadvertent location. This proposed plan must be constrained to be fitted with the vehicle. Likewise, additionally, distinguish right safety belt recognition. Right vehicle safety belt is most important to abstain from squandering human life.

Keywords: Car Safety System, Accident Prevention, Alert System, IoT, COST, Microcontroller, Communication Medium

I. INTRODUCTION

Today, the propelled universe of science and advancement, the Transportation system is a basic bit of living. Having this with us gives us the vibe of the for the most part blended creatures on earth. Vehicles accept an essential part in our step by step life yet like each other thing, with a couple of positives there are negatives too. Road incidents are a genuine risk to human lives. Speed is the key factor accountable for a critical number of episodes. PDA based setback ID and cautioning structure will follow

the disaster with help of sent impact sensors, will process the data through microcontroller unit and with a Smartphone application GPS, GSM it will send a notice to the nearest emergency benefits and to the loss' family [1].

Speed is a victor among the hugest purposes behind an incident. Nowadays, GPS recipient has transformed into an imperative bit of a vehicle. Other than using as a piece of various purposes, the GPS can in like manner screen the speed and recognize an accident. It can use an incredibly humble and surely

understood GSM modem to send the accident region to the Alert Service Center. It can send the last speed before the incident which will overview the earnestness of the accident and can begin a voice call. Nearby the modified acknowledgment structure, the vehicle occupant will have the ability to physically send the disaster situation by crushing the Manual Detection Switch. Thus, the proposed structure can serve the humankind by an amazing game plan as human life is essential [3].

A GPS vehicle following an organization structure that gives various all-inclusive organizations at whatever point and wherever. The structure empowers people to find their vehicles position, speed, stops, and improvements. The checking procedure fuses setting speed and land limits, getting history reports of the vehicle's improvements or continuous after. It tends to be used to deflect auto theft by uniting the contraption with the auto alert and besides gaining a guide containing the auto territory if the auto is accepted to be stolen. Following vehicles in our structure utilizes a broad assortment of new progressions and correspondence frameworks tallying GPRS, GSM, the Internet, and GPS. For future work, more organizations could be added to the compact application and besides the graphical customer interface could be pushed ahead [6].

II. Literature Review

KiranSawant et al. created an accident alert system using GSM and GPS modem and Raspberry Pi. A piezoelectric sensor first senses the occurrence of an accident and gives its output to the microcontroller. The GPS detects the latitude and longitudinal position of a vehicle. The latitudes and longitude position of the vehicle is sent as message through the GSM. The static IP address of central emergency dispatch server is pre-saved in the EEPROM.

Whenever an accident has occurred the position is detected and a message has been sent to the pre-saved static IP address [1].

Mrs. ManasiPatil et al. described a better traffic management system using Raspberry pi and RFID technology. The vehicle has a raspberry pi controller fixed in it which is interfaced with sensors like gas sensor, temperature sensor and shock sensor. These sensors are fixed at a predetermined value before accident. When an accident occurs the value of one of the sensor changes and a message to a predefined number (of the ambulance) is sent through GSM. The GPS module which is also interfaced with the controller also sends the location of the vehicle. When the message is received by the ambulance, a clear route has to be provided to the ambulance. The ambulance has a controller ARM which is interfaced with the RFID tag sends electromagnetic waves. When an ambulance reaches the traffic signal the RFID reader which is placed on the joints detect the electromagnetic waves of the tag. If the traffic signal is red, then the readers goes through the database in fraction of seconds and turn the red light green. And automatically in such condition the RFID on opposite joints turn the opposite signal red. This provides a clear route tothe ambulance. [2].

V.Sagar Reddy et al., developed an accelerometer based System for driver safety. The system has the advantage of tracking or identifying vehicles location just by sending a SMS or email to the authorized person. The system is designed by using Raspberry Pi (ARM11) for fast access to accelerometer for event detection. Is there any event is occurs the message sent to the authorized person so they can take immediate action to save the lives and reduce the damages. Images captured by the camera on the vehicle are emailed to the concerned person (for

example the owner of the vehicle) along with the type of accident and the time of the accident. [3].

Sri Krishna ChaitanyaVarma et al., proposed an Automatic Vehicle Accident Detection and Messaging System Using GPS and GSM Modems. AT89C52 microcontroller is used in the system. When the system is switched on, LED is ON indicating that power is supplied to the circuit. When the IR sensors that are used sense any obstacle, they send interrupt to microcontroller. The GPS receives the location of the vehicle that met with an accident and gives the information back. This information is sent to a mobile number as a message. This message is received using GSM modem present in the circuit. The message gives the information of longitude and latitude values. Using these values the position of the vehicle can be estimated [4].

Apurva Mane et al., described the methods for vehicle collision detection and remote alarm device using Arduino. Key features of this design include real-time vehicle monitoring by sending its information regarding position (longitude, latitude), time, and angle to the monitoring station and to the user/owners mobile that should help them to get medical help if accident or the theft occurs. Also user/owner has an access to get real-time position of a vehicle in real time. Whenever accident occurs MEMS and vibration sensor detects and sends the signals to microcontroller, by using GPS particular locations where accident has occurred is found, then GSM sends message to authorized members[5].

Prof. Mrs. Bhagya Lakshmi V et al. proposed a FPGA Based Vehicle Tracking and Accident Warning system using GPS. FPGA is mainly used to track position of any vehicle and send automated message to pre-programmed number. The owner of vehicle, police to clear traffic, ambulance to save people can

be informed by this device. FPGA controls and coordinate all parts used in system. With the help of accelerometer sensor, the exact position of the vehicle can be detected. It can also be predicted whether the vehicle is in normal position or upside down [6].

III. PROBLEM DEFINITION

In this continues world, day by day several cars are invented and being employed by each individual. As a result of an oversized variety of cars, traffic will also increase and rash driving of cars will also increase. In results of that scenario, accidental condition also increases rapidly. By analyzing a number of the accidental reports most of the accidents occur as a result of rash driving of the car by alcoholic drunk driver. In accident detection construct to assume regarding one full proof system that can't be plagued by accident, associate additionally detects accidental condition by analysing car position and use location instrument to provide data regarding the location where an accident has occurred. For sending that data to health aid centre or emergency service supplier, van needed communicating media.

IV. IMPLEMENTATION

The main aim of the project Accident Detection and Messaging System is to inform the Ambulance and Police of the accident site and arrange for necessary steps to control the situation. This system is not only efficient but also worthy to be implemented. . The Accident Detection and Messaging System can be fitted in the vehicle (Ambulance or the Police) and they are informed about any such untoward incident at the go.

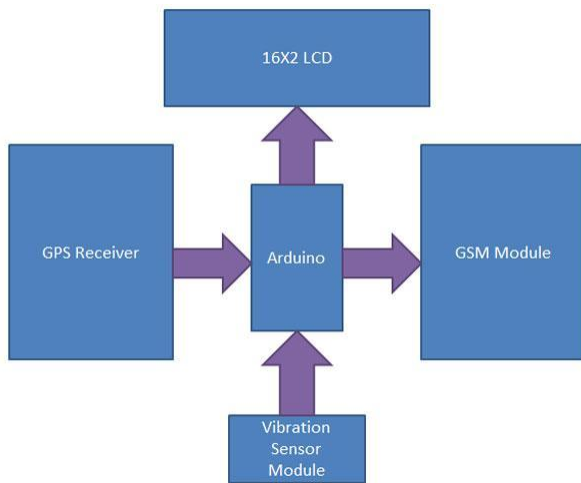


Figure 1. Block Diagram

Accident Detection and Messaging System execution is simple as the system makes use of GSM and GPS technologies. GPS is used for taking the coordinates of the site of the accident while GSM is used for sending the coordinates to cell phones. To make this process all the controls are made using Arduino whereas a LCD is used to display the coordinates.

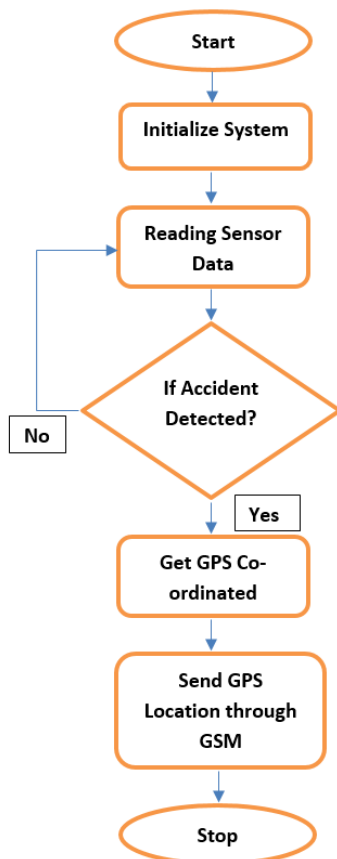


Figure 2. System Flow

Accident Detection and Messaging System is easy and the components used are Vibration Sensor, which detects the accident and in turn sends the signals to Arduino. At this point the Arduino takes control and starts collecting the coordinates received from the GPS which are later sent to the Central Emergency Monitoring Station by using the GSM Module.

V. CONCLUSION

Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions. Authors are strongly encouraged not to call out multiple figures or tables in the conclusion—these should be referenced in the body of the paper.

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