

IOT Based Vehicle Accident Alert System

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ABSTRACT

Our lives got simpler with the Quick accumulation of innovation and framework. The coming of innovation has likewise risen the traffic perils and the road accident occurs over and again which causes gigantic death toll and property on account of the poor emergency offices. Due to chatting/talking on the Cell phone during driving and furthermore because of rash driving of the drivers. Numerous lives could have been spared if emergency service could get accident data and contact in time. Vehicle accidents are one of the most driving reasons for setbacks. The time between an accident event and the emergency restorative work force are dispatched to the accident area is the significant factor in the endurance rates after an accident. By wiping out that time between an accident event and the specialists on call are dispatched to the scene diminishes death rates with the goal that we can spare lives. Additionally, there is the possibility of a vehicle breakdown on the highways where it is a bit hard to get assistance or mechanic. In this paper, we are centering about all the current framework or analogies for accident revealing and anticipation to order another framework which is improved and succinct of existing properties. Overall, we are pondering the framework which decreases the time of activity, for example, suggestion to police, implication to family, intimation to hospital and a lot more angle.

Keywords : Accident Detection, Vehicle Breakdown, Accident Prevention, Location Tracking, GPS/GSM, IoT

I. INTRODUCTION

The fast advancement of financial development and individuals' expectation for everyday comforts keeps on improving. Just as road auto collision occur as often as possible this made immense misfortunes of life and property the nation and individuals. Traffic has become a significant occasion in the national intrigue. It will be not kidding outcomes if individuals can't send weft to the outside for assist when with dealing happen. Poor emergency occurrence is a significant reason for the high number of traffic fatalities and the demise rate in our nation. Various

mechanical and sociological upgrades have decreased traffic fatalities during the previous decade, e.g., each 1% expansion in safety belt utilization is assessed to spare 136 lives, Moreover, every moment that a harmed crash injured individual doesn't get emergency therapeutic consideration can have an enormous effect in their endurance rate, for example Examination shows that diminishing accident reaction time by 1 min connects to a six percent distinction in the quantity of lives spared.

In the ongoing time frames, the populace and innovative development has surpassed to the furthest

reaches of limits. As the masses is expanding quickly it verbosely suggests high number of vehicles. Escape clauses in rush hour gridlock the executives, numbness to follow appropriate traffic rules and once in a while bit of destiny contributed together offers ascend to a higher figure of Motor Vehicle Collisions. Aside from accidents, vehicle breakdown is additionally a significant issue on highways. Anyway in the tragic and unexpected occasion of a breakdown or road accidents what is required is prompt assistance. The aftereffect of these three is destroying for a few. Some costing conservative misfortunes, some medicinally and for some unfaithful life itself. Statically, Road impacts are the second most noteworthy passing purpose behind the individuals between ages 15 to 50. The Paper thus talks about an extreme subject, escape clauses in it and a proposed framework to defeat the obstacles. The paper additionally surveys altogether about the current frameworks, their highlights and impediments.

II. LITERATURE REVIEW

There are various battles made so as to avoid accidents i.e., there have been a few accident counteraction framework and versatile applications approaches are accessible to trail the lost vehicle. One of the strategies to characterize the vehicles multifaceted in impact, allowed to trade specifics between the two vehicles at the hour of the crash [1]. This framework had significant weakness in light of the fact that the subtleties are exchanged by means of RFID between the vehicles just, the capacity of vehicle subtleties in the database of Cops server or some other outside unit wasn't joined.

The procedure [2] expounds the use of Global Positioning System and Zigbee to show the accident area to the given contact individual number as a demonstration of giving data about the accident. This framework approach wasn't genuine since it needs

dynamic following of vehicle and capacity of way taken by the vehicle and so on, which is the essential need to get the attempt at manslaughter driver.

The framework given in this paper [3] incorporates PIC microcontroller alongside the GPS-GSM module to offer the alarm message with the area to the Control Section, from which a message is sent to the nearby rescue vehicle to make accessible therapeutic help. This framework [3] conquered the limits of [1] and [2]. Be that as it may, it has constraint because of which delay in the hour of execution, message and answer since PIC doesn't give the best compiler and application support and furthermore has the moderate speed of activity taking 4 tickers/guidance cycle.

Since a large portion of the car crashes is because of the human flaws, [4] gives an analogical way to deal with study the conduct of the driver under all the potential dangers.

Driver conduct outlining framework [5] utilizes a fastidious rationale to register the score for unique drivers by giving course topology, weather conditions, and identifies the questionable driving occasions and furthermore the plausible dangers.

So as to recognize the impact in road scenes, a calculation was created to compute crash conceivable outcomes [6]. This is successful as far as impact warning, crash sidestepping and furthermore moderation. In any case, it doesn't provide help during its fallout of the accident. The framework [7] incorporates microcontroller, GPS and GSM to send a message about the vehicle collide with the given numbers like ambulance, police headquarters, and so on.

This framework [8] which would find a vehicle that started an attempt at manslaughter accident and furthermore gives emergency restorative help so as to

moderate the fatalities in road accidents. In this manner, the driver who caused accident prompting damage or demise and left the location of the accident would be exposed to genuine criminal allegations. The consistent and intervallic checking of the vehicles will lessen the number of accidents on the roads.

This framework [9] has accident evasion innovation which would diminish the accident of the vehicle in swarm regions. This vehicle accident shirking, uncovering and mindful frameworks give emergency reaction essential data at the most punctual conceivable time. Dropping the time between when an accident happens and when it is identified can decrease death rates.

This framework [10] planned as a shrewd hostile to burglary framework that utilizations GPS and GSM framework to forestall robbery and to choose the careful area of the vehicle. The framework contains a GPS module, GSM modem, Infrared sensors, DTMF decoder IC MT8870DE, 8051 microcontroller, transfer switch, vibration sensor, paint shower, and high voltage work. GSM framework is likewise introduced in the vehicle for sending the data to the proprietor of the vehicle since the GPS framework can just get the vehicle position data from satellites. This framework naturally sends the message for help to one's family members. The cautious estimates like motor start cutoff, fuel supply cutoff, electric stun framework (introduced on guiding haggle) splash framework is introduced in the vehicle which is controlled utilizing client or proprietor GSM portable. The proprietor can bolt or open his/her vehicle with the assistance of SMS. This framework is for low range vehicles to give them outrageous security.

This paper [11] gives the briefest way by controlling traffic flags for the emergency vehicle. By this framework, the time interim is shortened by applying

the RF advancements that pedals the traffic signals. The priority of service to the emergency vehicle follows the lining methodologies through server correspondence. This guarantees the decreased time delay between the accident area and the hospital.

This paper gives the system which is situated in moving vehicles to distinguish accidents and reports to In Case of Emergency (ICE). The underlying responder is getting notice through GSM and notwithstanding that the vehicle accident zone longitude and scope data is gotten through GPS and GPRS. The given framework can spare life as the ICE group arrives at the spot on the schedule, deal with the person in question and give restorative treatment on time. The black box will account for the voice of the injured individual after the accident happens which will be utilized for additional examination.

III. PROPOSED APPROACH

The proposed design consists of various components such as IR sensor, Crashing switch, GSM module, LCD, LED and RF module Transmitter and Receiver. All these devices are interfaced to Arduino Uno board. The IR sensor and crashing switch is responsible for detecting the accidents and sends the command to the microcontroller. GSM and GPS are the devices that sends SMS and location to the users. Figure 1 shows the block diagram of the proposed system.

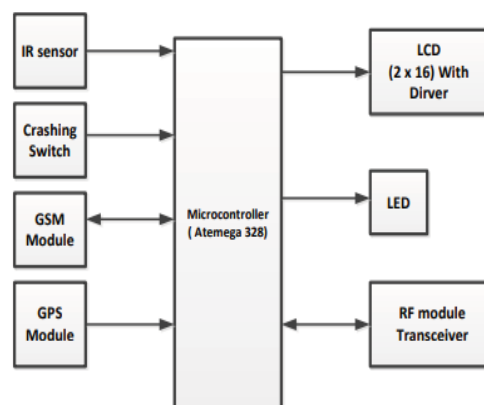


Figure 1. Block Diagram of Proposed System

Additionally our system is coupled with an android app for vehicle breakdown assistance. Our system has the facility where mechanics and users can register themselves. If there is any vehicle breakdown, the users can raise a request and nearest mechanic can assist them on the spot. This online mechanic locator reduces work and can easily find the mechanics from various location. Reduces your time and cost. The main objective is to provide a better service and to make the process easily and finally appointing a mechanic quickly.

IV. CONCLUSION

An accident is an unexpected and inadvertent occasion. In this day and age road accidents perspective among the main source of human death, Road wellbeing for driver is a fundamental necessity of society, As the Number of vehicles increment step by step, Collision of vehicle additionally increments broadly, in this circumstance this paper satisfies the reason for sparing lives first by examination the escape clause in the current frameworks. A framework is required which the framework which decrease time of activity, for example, suggestion to police, implication to traffic police, insinuation to family, hint to hospital and a lot more viewpoint.

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