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+91 9940572462 +91 9940572462 ijarasem@gmail.com www.ijarasem.com

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Accident Detection and Rescue Process Using IOT and Cloud System

Mr.K.Kirubairaj, Dr.A,Venkatesh Dr.J.Chandramohan

P.G Student, Embedded System Technologies, Gnanamani College of Technology, Namakkal, Tamilnadu, India

Assistant Professor, Electrical and Electronics Engineering, Gnanamani College of Technology, Namakkal, Tamilnadu, India.

Associate Professor, Electrical and Electronics Engineering, Gnanamani College of Technology, Namakkal, Tamilnadu, India.

ABSTRACT: In this Project, wireless Live box system using sensor IOT and GPS tracking system is developed for accidental monitoring. The method consists of cooperative components of an vibration sensor, GPS device, microcontroller unit and IOT module. In the occurrence of accident, this wireless device will be send mobile phone short massage indicate the current position of vehicle by GPS system to family member, emergency medical service (EMS) and nearest hospital. The threshold algorithm and the speed of motorcycle is used to determine fall or accident in real-time. The method are compact and easy to install under rider place. An vibration, temperature and gas sensor can be used in a vehicle application. The project focuses on building an infrastructure which vehicle safety authorities can enhance the crash reports post-crash analysis, record of the event and reduces the time to arrive at the crash location. Our research has been target towards building an integrated system for emergency rescue services in the event of a road accident. The purpose of the project is Live box to find the accident location using GPS module and to send this location by means of sending a message using IOT module to the pre-coded number. This system are usually placed inside the vehicle. It reduce the time it takes for emergency rescue to arrive at the crash location. Panic switch use to control the sending data

KEYWORDS: Live box, IOT module, GPS, Panic switch

I. INTRODUCTION

The ability to definitively recognize a vehicles region and its status is the essential goal of vehicle course actually taking a look at systems. Furthermore, the fame of vehicles has moreover extended the traffic risks and the road disasters. This is an aftereffect of the shortfall of best emergency workplaces available in our country this construction is a structure which can perceive incidents in basically less time and sends the basic information to clinical guide place inside a few minutes covering geographical bearings, the time and edge wherein a vehicle setback had occurred. This caution message is shipped off the rescue bunch in a short period of time, which will help in saving the significant lives. These structures are executed using a couple of combination strategies that consolidate far off correspondence, geological arranging and embedded applications.

Our endeavor plans to show an advancement normally distinguishing the accident and a gear GPS reference point reliant upon GSM/GPS development educating at the occasion concerning disaster with sufficient nuances like clear region and time at which incident happened. This endeavor will set up a correspondence between the control station and the unit presented in vehicles. Vehicles will have GPS/GSM engaged after modules and will be followed continuously using cell frameworks. The item introduced in the microcontroller will control the various exercises of the device by really taking a look at waveform from the vibration sensor. In case of accident the device will send an alert message close by region data from GPS module to control station using GSM sort out. It is a broad and fruitful response for the helpless rescue response assuming that there ought to emerge an event of setback. The disaster itemizing can normally find a fender bender, search for the spot and subsequently send the fundamental information to the rescue office covering land works with and the time and conditions wherein a car crash happened. At the server end, a control limit will remove appropriate data and store it in a data set, to which disaster information from models will be reviewed dynamically. Our system unites pushed hardware plan and refined control development into a more modest, trustworthy group

II.RELATED WORK

2.1Nitin Raut, Prof. Abdulla Shaik The benefit of innovation has likewise expanded the traffic risks and the street mishap occur often which causes gigantic death toll and property in view of the poor crisis offices. Our undertaking will give an ideal answer for this disadvantage. A coordinated Cell telephone GPS-GSM framework is proposed to follow vehicles utilizing Google Earth application create inAndroid application for versatile framework. The far off module has a Bluetooth mounted on the moving vehicle with added accident perceiving sensor to recognize in the event that incidents happenss. Here Bluetooth will be the mechanism of correspondence with the client portable for actuating the GPS position of the mobile phone. Right now telephone will get actuated its application and track the present situation of the vehicle and send it to the remote found predefined telephone for following the ongoing situation of the circumstance. After information handling, Google Earth application can be utilized to see the present area and status of every vehicle. To recognize the continuous restriction of the vehicle utilizing Bluetooth innovation with GPS locator in PDA utilizing android application.

2.2Sadia Murawwat, Sajjad Rabbani The Rapid improvement of advancement has simplified our life. This progress in advancement in like manner extended the traffic hazards. Thusly the extent of road setbacks which happen once in a while assembles causing tremendous loss of life in light of helpless emergency workplaces. Key driver behind these road accidents include: nonattendance of getting ready foundations, incompetent drivers, helpless road conditions, usage of remote during driving, over stacking and poor authoritative plans at this moment. Our assessment offers a response for accident area and evasion for human existence security. It enables sharp acknowledgment of an incident at any place and reports about the disaster on predefined numbers. Our system involves two areas, upsetting aspect and illuminating part. Right when partition is exorbitantly short between the vehicles and obstacle by then alert will be "ON" as a marker to move vehicle alternate way which is safer yet when a vehicle faces accident paying little mind to caution, rapidly vibration sensor will perceive the sign and a while later Microcontroller sends the alert message through the GSM modem including the region to predefined numbers that can be put something aside for a rescue bunch. Our organized structure has been attempted at different regions and considered effectively working by sending prepared messages to mobile phone client.

2.3M.A. Raihan & M. Rahman This paper has principally featured the general attributes of vehicle lethal mishaps and makes an endeavor to set up the most widely recognized kinds of deadly mishaps and the causal elements. The deadly mishap of vehicle is significantly more than injury and impact just mishaps. In urban regions, the vehicle traffic is immense contrasted with country regions and the mishap rate is practically twofold. So the drivers of vehicle in city zones ought to be prepared appropriately. Age of 26 to 35, losses is exceptionally high. The greater part of the mishaps happen because of indiscreet driving and rapid and most fatalities occur because of reluctance of the drivers for wearing safety belts. Most incessant mishap types were backside, hit people on foot and head-on crash. Higher part of fender benders happen due to NMV, truck, transport, beat and so forth. Practically all mishaps happen at dry and fixed surface, great and straight street at reasonable climate. Countermeasures expressed above may help in limiting the casualty pace of fender bender.

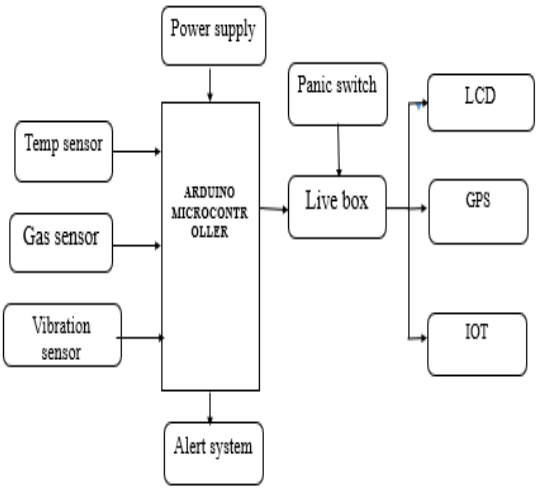
III. EXISTING SYSTEM

Our gadget is totally autonomous. It doesn't utilize the interior satellite route of the vehicle. It has its own GPS module and recieving wire. We have fabricated the gadget around the possibility that it tends to be fitting and-play, low power utilization and will be viable with the immense number of vehicles paying little mind to make and show simultaneously be sensibly evaluated so it very well may be broadly conveyed. Actual Damage to the vehicle is one of the trigger occasions. In the probability that a vehicle has harmed key region of the vehicle it will go about as a trigger. It is essentially a press button that gets squeezed. It is put with a few security between the undercarriage and the edge of the vehicle.

IV. PROPOSED SYSTEM

To build an integrated system for emergency rescue services in the event of road accidents by live box system. The project focuses on building an infrastructure which vehicle safety authority can enhance the crash reports post-crash analysis, record of the event and reduces the time to arrive at the crash location. In the event of an accident it is reported to the police or a hospital by the locals in the area if they have discovered the wreckage or the incident happened on sight. Usually the caller is uncertain of the injuries and according to a research in delay of ambulance to crash location reveals that even with emergency services in place it can take up to 5 minutes or more in the developed countries for an ambulance to arrive

4.1 BLOCK DIAGRAM



V. SYSTEM REQUIREMENTS

HARDWARE DESCRIPTION

5.1 NODE MCU

Fig 5.1 Node MCU

NodeMCU is an open-source Lua based firmware and improvement board uniquely focused on for IoT based Applications. It remembers firmware that runs for the ESP8266 Wi-Fi SoC from Espressif Systems, and equipment which depends on the ESP-12 module.

5.2 ARDUINO UNO R3 MICRO CONTROLLER

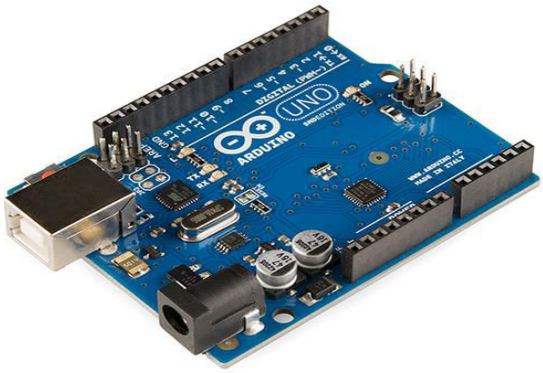


Fig 5.2Arduino Uno Board

The Arduino Uno R3 is a microcontroller. It has 14 computerized input/yield pins (of which 6 can be utilized as PWM yields), 6 simple information sources, a 16 MHz precious stone oscillator, a USB association, power jack, ICSP

header, and a reset button. It contain everything expected to help the microcontroller; just associate it to a PC with a USB link or power it with an AC-to-DC connector or battery to begin.

5.3 Power Supply

The AC supply is applied to 12V advance down transformer. The transformer yield is the 12V AC which is redressed utilizing a diode span. The result of Diode Bridge of 12V DC is separated by capacitors.

5.4 GPS

Fig 5.4 GPS

Global Positioning System GPS helps in both following and route reason. Global positioning frameworks is utilized to monitor the vehicle without the intercession of the driver. Be that as it may, a route framework directs the driver to arrive at the objective with next to no interruptions. Both following and route utilizes a similar design. As a mishap happens the following stem distinguishes the clumsy vehicle and a message is shipped off the salvage group through a SMS

5.5 LCD Display

Fig 5.5 LCD

LCD can show numbers, characters and designs. The presentation is interacted to I/O port of microcontroller (P0.0-P0.7). The presentation is in multiplexed mode for example just each show stays on in turn. Inside 1/tenth of a second the following presentation turns on. In this manner consecutively here and there show will bring about consistent presentation of count because of steadiness of Vision.

5.6Buzzer

Fig 5.6 Buzzer

A buzzer or beeper is a sound flagging gadget, which might be mechanical,elecro mechanical or piezoelectric .Typical employments of ringers and beepers incorporate caution gadgets, clocks, and affirmation of client information

5.7 Gas Sensor

Fig 5.7 Gas

A gas locator is a gadget that distinguishes the presence of gases in a space, regularly as a component of a security framework. This kind of gear is utilized to distinguish a gas spill or different discharges and can communicate with a control framework so an interaction can be naturally closed down. A gas locator can sound a caution to administrators in the space where the hole is happening, offering them the chance to leave. This sort of gadget is significant on the grounds that there are many gases that can be unsafe to natural life, like people or creatures.

5.8 Vibration sensor

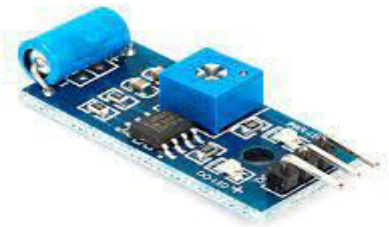


Fig 5.8Vibration

The measurement of vibrations should be possible utilizing different sorts of sensors. In spite of the fact that there are no immediate vibration sensors, vibrations can be estimated in a roundabout way, deriving esteems from exemplary mechanical or optical amounts. These sensors contrast in certain highlights. In addition to other things they can be isolated in view of dynamic and latent conduct, there are sensors that action relative and others outright. Other particular highlights are recurrence range, signal elements and the nature of the estimation information. The accompanying sensors displayed here were first organized in a reaching and a non-reaching bunch and inside these in the sub things way, speed and speed increase measurement.

VI. CONCLUSION

By and large such gadgets and frameworks can be the changing element in street wellbeing. Life is inestimable and we ought to do whatever conceivable to make streets more secure. WHO has just anticipated 1.9 million losses continuously 2020. Bangladesh is particularly in danger as the nation is being changed by building more scaffolds, streets and better transportation systems and new regions rises to create. Bit by bit with help from both the vehicle proprietors and the Government aiding arrangement of such gadgets in vehicles, we can diminish the effect from the ever so concerning issue of street mishaps. What's more it will help spare lives, help in better information assortment and fabricate a foundation arrangement utilizing Emergency Crash Reporting Software to help the salvage administrations of the nation.

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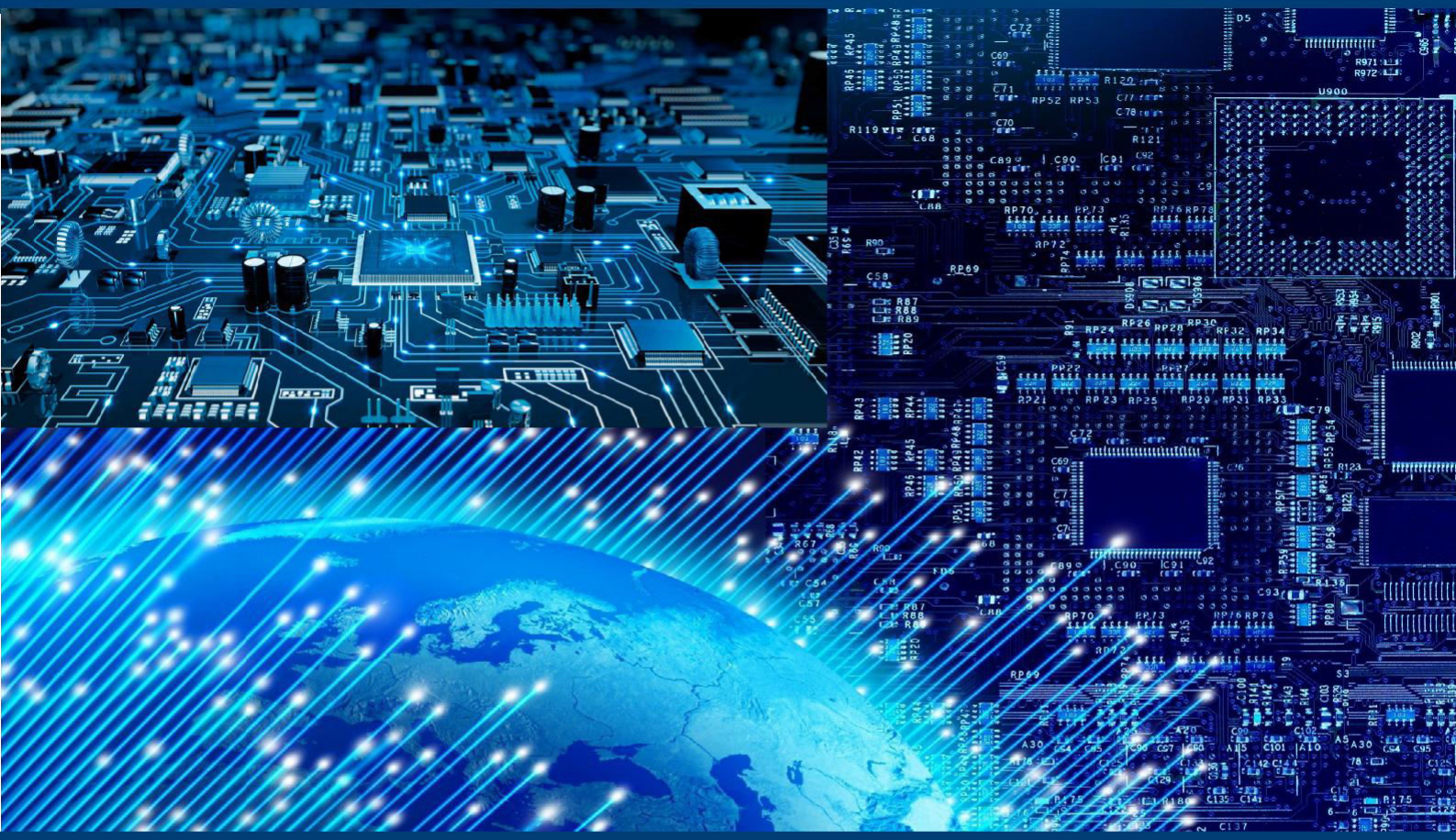

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