DEVELOPING ACCIDENT MONITORING SYSTEM USING WIRELESS APPLICATION

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ABSTRACT: Nowadays we are able to track vehicles using many applications which help in securing personal vehicles, public vehicles, feet units and others. Furthermore there is a rapid increase in the occurrence of the Road accident. This paper is about a system which is developed to automatically detect an accident and alert the nearest hospitals and medical services about it. This system can also locate the place of the accident so that the medical services can be directed immediately towards it. Data from different sensors is updated on the webpage.
Keywords- accident detection; alert system; vibration, Webpage, GSM modem

I.   INTRODUCTION

Ecological observing is a precarious movement as the natural conditions can without much of a stretch change from point to point even at little separations. This is particularly valid inside structures where temperature, stickiness, and contaminations can be distinctive in various rooms as well as inside a similar room particularly when grandstands and shut furniture are utilized.

While a few models have been suggested that can oversee many detecting hubs, frequently there is a low thoughtfulness regarding the affirmation of the nature of estimated esteems. The segments created inside the structure portrayed in this paper attempt to address this perspective by utilizing a multilayer information stockpiling framework with battery-worked sensors furnished with a neighbourhoodnon-volatile memory and a transmission convention, which guarantee the deliberate information changelessness even on account of system disappointment. Such a neighbourhood memory likewise empowers utilizing the hubs in areas where no system association is accessible like storm cellars as well as unattended remote locales.

All hubs have a one of a kind identifier and are intended to work for a considerable length of time without manual intercession. All estimations are for all time put away inside the hub and can be adjusted just by altering the sensor and breaking its case. Under typical conditions, cradled beneficiaries and circulated distributed storage can convey the estimations to the clients in either constant or semi continuous, however there is the confirmation that crude estimated information are constantly retrievable.

In exceedingly populated Countries like India, ordinary individuals lose their lives on account of mishaps and poor crisis offices. These lives could have been spared if restorative offices are given at the opportune time. This paper suggests framework which is an answer for this disadvantage. Conventional auto collision forecast utilizes long haul traffic information, for example, yearly normal day by day traffic and hourly volume. As opposed to conventional auto collision expectation, continuous car crash forecast relates mishap events to constant traffic information acquired from different finders, for example, enlistment circles, infrared locator, camera and so forth. Continuous car crash forecast centres around the difference in rush hour gridlock conditions before a mishap event, while traffic episode location contemplates are worried about the difference in rush hour gridlock

conditions after an occurrence event. Manual occurrence identification strategies distinguishes the mishap from the driver report, transportation office or open groups report, elevated observation or close circuit camera reconnaissance.

II.   LITERATURE SURVEY

The Expected execution is accomplished through usage of the proposed framework. The sensor and other required segments are appropriated all through the vehicle giving increasingly ideal outcomes to identify mishaps. The proposed framework can likewise be utilized for traffic estimation and framework execution estimation to counteract death toll to its most extreme. [1]

With this framework, an Embedded System is structured which can be most valuable for Accidents. It's an ease, Power effective framework by which the activity time can be limited and definite area of a mishap can likewise be characterized with GPS administration and furthermore the data in regards to mishap can be sent to specific contact numbers e.g., Police stations, Doctors and so forth.. In view of the adaptability of implanted framework, this framework is particularly perfect to any sort of vehicles. Over this framework is particularly moderate to a typical man and this can be effectively actualized. [2]

This task presents vehicle mishap identification and ready framework with SMS to the client characterized portable numbers. The GPS following and GSM alert based calculation is structured and actualized with LPC2148 MCU in inserted framework area. The proposed Vehicle mishap discovery framework can follow geological data naturally and sends a ready SMS with respect to mishap. [3]

This undertaking presents vehicle mishap discovery and ready framework with SMS to the client characterized portable numbers. The GPS following and GSM alert based calculation is planned and actualized with LPC2148 MCU in implanted framework space. The proposed Vehicle mishap identification framework can follow land data consequently and sends a ready SMS with respect to mishap. Exploratory work has been completed cautiously. [4]

Mishap based crisis situation can be detected by our wise application in Android portable utilizing an accelerometer and ready message which contains the GPS area data was sent by means of SMS, email and message can be effectively posted on particular user‟s Facebook divider. Thus, Android indeed turned out to be a flexible working framework which enabled us to control different inbuilt highlights of an Android versatile which made us to build up a keen application called as ETS. [5]

The possibility of vehicle mishap discovery isn't new and the car organizations have gained loads of ground in idealizing that innovation. The paper [6] is an endeavor to contribute here of innovation. Here we are endeavoring to distinguish mishap through three parameters-increasing speed/deceleration, tilt of the vehicle and the weight change on the body of the vehicle. Utilizing these moment information esteems and a well-suited calculation, the mishap can be distinguished with a sensible achievement rate. Furthermore, the directions of the vehicle discovered utilizing GPS innovation is send to the crisis administrations for help.

The framework proposed in [7] can recognize the mishap and affirms the earnestness of the mishap and afterward alert the closest restorative help focus to give crisis medicinal guide to mishap unfortunate casualty. Accelerometer and heartbeat sensor are utilized to 2017 International Conference on Computer Communication and Informatics (ICCCI - 2017), Jan. 05 – 07, 2017, Coimbatore, INDIA decide if a mishap had happened. The correspondences between the modules are finished by utilizing Bluetooth. The advanced mobile phone with the android application will send message to the closest medicinal focus. The framework will likewise advise the loved ones of the unfortunate casualty through message.

A signal is additionally given to caution the kindred travellers out and about that a mishap has jumped out at welcome their assistance. Pre-emption of the mishaps occurring on the streets is preposterous; however in any event the eventual outcomes can be limited. The framework proposed in [8] guarantees making crisis offices accessible to mishap unfortunate casualties as right on time as conceivable by letting relatives; by the method for observing the vehicle utilizing its number plate perceives the camera. Before that it can act through the tollbooth, the vehicle number plate was caught by this camera and stores it in a database. It will look at that the vehicle was approved or not, in the event that the number plate was enlisted one, at that point it passes the

section to the vehicle, generally bell caution will rise. At the point when the vehicle met a mishap sense by vibration sensor making a caution to emergency clinic or a salvage group realizes the mishap spot with the assistance of this module installed in the vehicle.

The Rapid development of innovation has made our life less demanding. This progression in innovation likewise expanded the traffic risks. Thus the proportion of street mishaps which happen often builds causing massive death toll because of poor crisis offices. Research did in [9] gives an answer for mishap location and counteractive action for human life security. It empowers keen location of a mishap at wherever and reports about the mishap on predefined numbers.

The equipment incorporates vibration sensor, three modules GPS beneficiary, Microcontroller (Lpc2148), and PIC 16F877A GSM modem (SIM 800). Pulse sensor when a vehicle faces mishap quickly vibration sensor will identify the flag and afterward Microcontroller sends the alarm message through the GSM modem including the area to predefined numbers that can be held for a salvage group. And keeping in mind that returning through ultrasonic sensor the traffic light will be control.

Mishap compromises human lives more and for the most part street mishap is basic today. Amid mishap numerous individuals lose their life since therapeutic administrations and relative not getting incidental data on time. Framework displayed in [10] is an effective vehicle remote framework which planned and actualized for vehicle mishap discovery and announcing utilizing accelerometer and GPS. Accelerometer sensor is utilized to identify crash and GPS give area of vehicle. If there should be an occurrence of any mishap, the framework send robotized message to the pre-modified number, for example, relative or crisis therapeutic administrations by means of GSM. P. S. Bangare et al have worked on the Online Home Security model [11].

III.   PROPOSED SYSTEM

Following figure shows the blocks of proposed system. The main problem with existing message oriented accident system is that it sends a message to authority even if small accident occurs. In this case when authority arrived at location, the injured person already flees from the place. This irritates authorized person.

To avoid this we used buzzer which will stay ON for 2 minutes. An irritating sound plays through buzzer whenever a person meets an accident, if he is not seriously wounded, then he will pressed switch to stop buzzer. If the buzzer doesn't stop that means the accident is serious one and GSM sends the alert message with location (captured via GPS) to authority. There is possibility of lack of network or an accident may occurs in no network zone in that case voice payback module starts to play an automated message which contains name, address and guardians contact no. whenever PIR module detects a passing by person. Another group of sensors which detects the severity of accidents are temperature sensor, vibration sensor and micro switch.

A high temperature detects fire in vehicle, accidents makes more vibration in car thus vibration above threshold is also one of the notification of major accident. Whenever a vehicle falls in water vibration sensor is not effective and hence we use micro switch which change state because of pressure from water. All data is updated on webpage after regular interval of time.
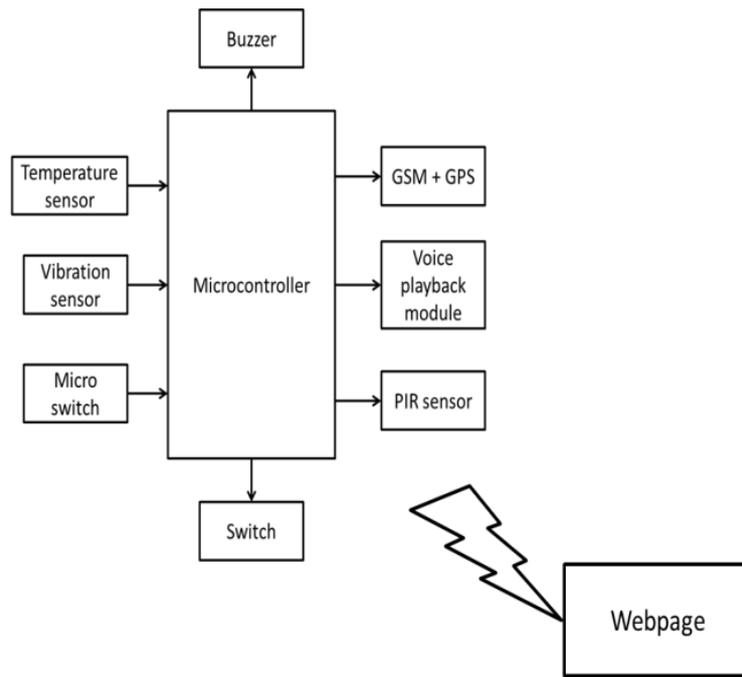
Fig 1: block diagram of proposed system

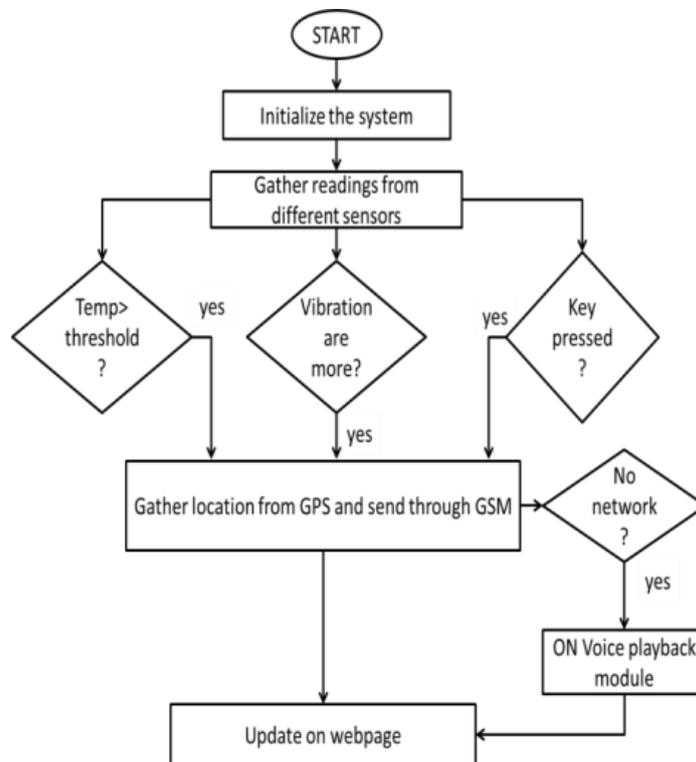## IV.   FLOW CHART

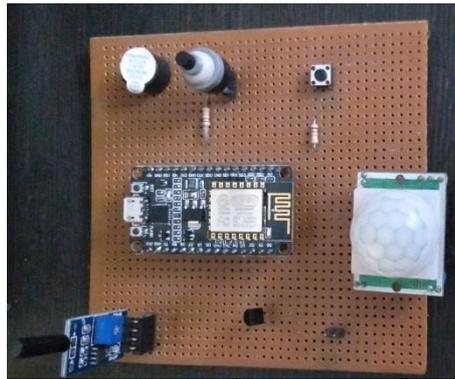Fig 2 flowchart of proposed system

V.   RESULT

Fig 3 hardware implementation
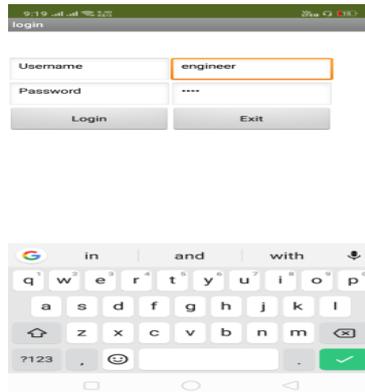

Fig 4 Login page

Fig 5: Block coding in MIT App Inventor

Fig 6: main screen

Fig 7: Block coding in MIT App Inventor

Fig 8 message to correspondence

Fig 9: Firebase server

VI.   CONCLUSION

With this system, an Embedded System is designed which can be most useful for Accidents. It's a low cost, Power efficient system by which the action time can be minimized and exact location of an accident can also be defined with GPS service and also the information regarding accident can be sent to particular contact numbers e.g., Police stations, Doctors etc..Because of the flexibility of embedded system, this system is very much compatible to any kind of vehicles. Over all this system is very much affordable to a common man and this can be easily implemented.

Acknowledgment

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