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A Smart Detection Of Victim's Location Transfusor Using Mobile Application Development

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Abstract: The population of our present world has raised tremendously which in turn leading to some new changes in the human kind. In accordance with the basic necessities, the comfort living of human life with the luxuries and life styles are also customized in such a way that, instead of using public transportation every individual want to have their own vehicle, which may result in heavy traffic and unnecessary accidents. By this the number of private vehicles increased a lot which resulted in more number of accidents and as well as pollution which is going to be a great loss to this environment. On the other hand there is no security for the vehicles as they are getting stolen by thieves easily. The accident discovery and its identification of exact location is the overall idea of the paper. This introduces accident alerting system which alerts the person who is driving the vehicle. If the person is not in a position to control the vehicle then the accident occurs. Once the accident occurs to the vehicle this system will send information to registered mobile number.

Keywords: Accident detection; Alert system;GSM Module;GPS Module; accelerometer; Android application.

I.INTRODUCTION

In present days the rate of accidents can be increased rapidly. Due to employment the usage of vehicles like cars, bikes can be increased, because of this reason the accidents can be happened due to over speed. People are going under risk because of their over speed, due to unavailability of advanced techniques, the rate of accidents can't be decreased. To reduce the accident rate in the country this paper introduces a optimum solution. Automatic alert system for vehicle accidents is introduced; the main objective is to control the accidents by sending a message to the registered mobile using wireless communications techniques. When an accident occurs at a city, the message is sent to the registered mobile through GSM module in less time. The purpose of this method is to establish communication with the emergency centre and provides brief and useful information about patient via SMS.This service automatically sends SMS through mobile phones,even when the patient cannot do it. GPS system will help in finding the location of the accident spot. The proposed system will check whether an accident has occurred and notifies to nearest medical centers and registered mobile numbers about the place of accident using GSM and GPS modules. The location can be sent through tracking system to cover the geographical coordinates over the area. The accident can be detected by a vibration sensor which is used as major module in the system[1].

II. LITERATURE SURVEY

A multi- objective particle swarm optimization (MOPSO) is proposed to solve the problem. The performance of the proposed MOPSO is compared with that of a genetic algorithm and a random search algorithm. The results show that the MOPSO outperforms a well-known genetic algorithm for multi-objective optimization.

Cloud computing is the latest distributed computing paradigm and it offers tremendous opportunities to solve large scale scientific problems. However, it presents various challenges that need to be addressed in order to be efficiently utilized for workflow applications. Although the workflow scheduling problem has been widely studied, there are very few initiatives tailored for Cloud environments.

Many other systems have been proposed to deduce the accident. The existing system deals with two sensors where MEMS sensor is used to detect the angle and vibration sensor is used for detection the change in the vehicle.

Existing system also provides the location of the accident using Atmega 328 Microcontroller and RF transmitter and receiver. The information is send to the saved mobile numbers[3].

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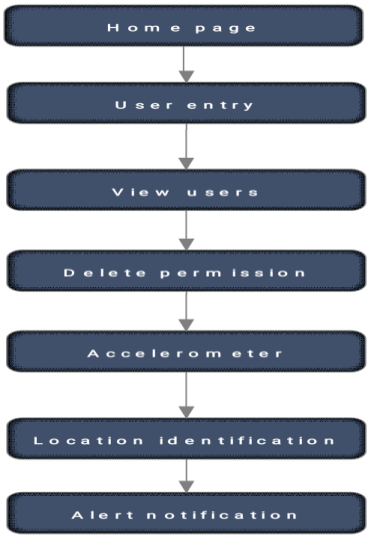
WORKING MODULE

Figure 1: System Architecture of accident detection and alert system



III. ACCIDENT SYSTEM AND ALERT SYSTEM

A.ACCELEROMETER

An accelerometer is a device that measures proper acceleration ("g-force"). Proper acceleration is not the same as coordinate acceleration(rate of change of velocity). For example, an accelerometer at rest on the surface of the Earth will measure an acceleration g= 9.81 m/s2 straight upwards.By contrast, accelerometers in free fall orbiting and accelerating due to the gravity of Earth will measure zero.

B.GSM MODULE

For providing communication between the GPS, GSM and the allocated mobile number GSM SIM900 module is preferred. The name SIM900 says that, it is a tri band work ranging a frequency of 900MHz to 1900 MHz such as EGSM900 MHz, PCS 1900 MHz and DSC 100 MHz.Receiving pin of GSM module and transmitting pin of GPS module are used for communication between the modules and the mobile phone.

C.GPS MODULE

To find the location on the earth the whole is divided into some coordinates where the location can be easily captured by a module called GPS module. Here the GPS used is SIM28ML. This GPS module will find the location of the vehicle and the information fetched by the GPS receiver is received through the coordinates and the received data is first send to rduino and the information is transmitted to the saved contact through GSM module. The frequency is operated in the range of 1575.42 MHz and the output of GPS module is in NMEA format which includes data like location in real time.

IV.SYSTEM IMPLEMENTATION

To develop good quality of system software, it is necessary to develop a good design. Therefore, the main focus on while developing the design of the system is the quality of the software design. A good quality software design is the one, which minimizes the complexity and cost expenditure in software development. The two important concepts related to the system development that help in determining the complexity of a system are coupling and cohesion. Coupling: Coupling is the measure of the independence of components. It defines the degree of dependency of each module of system development on the other. In practice, this means the stronger the coupling between the modules in a system, the more difficult it is to implement and maintain the system.Each module should have simple, clean interface with other modules, and that the minimum number of data elements should be shared between modules. High Coupling These type of systems have interconnections with program units dependent on each other. Changes to one subsystem leads to high impact on the other subsystem. Low Coupling These type of systems are made up of components which are independent or almost independent. A change in one subsystem does not affect any other subsystem.

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Figure 2: Registering Mobile Number

Figure 3: Message Sent to Registered Number

V. RESULTS AND DISCUSSIONS

Whenever accident of vehicle is occurred then the device sends messages to given mobile number.

VI. CONCLUSION

In this research,we developed the accident detection and smart rescue system, which uses on board accelerometer sensor to detect accident and generate emergency alert and send it to the nearest emergency responder and will also send an SMS to emergency contact containing location coordinates of the accident. With real time location tracking for both victim and responder the system will drastically increase the survival rate of an accident victim by providing emergency aid in time. The system will also provide help during other emergencies such as during fire,robberies/theft and other medical emergencies. Emergency responder will be able to pin point victim's location on a Google map in real time.

VII. FUTURE SCOPE

The proposed system deals with the detection of the accidents. We further implement our android application with audio recording and sending through whatsapp. By increasing the technology we can also avoid accidents by providing alerts systems that can stop the vehicle to overcome the accidents.

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