LIFE IN A FUZZY EMERGENCY SERVICES (LIFES)

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ABSTRACT: The rapid development of economic construction and people's living standard continues to improve. As well as road traffic accident take place frequently which caused huge losses of life and property to the country and people. Traffic has become an important event in the national interest. It will be a serious consequences if people cannot sent weft to the outside for help when traffic occur. The design is an equipment which can detect accidents, search of accident place and sent rescue alarm automatically. Application of this device can significantly shorten the warning time of the accident and determine the accident site. Accident detection and information sending are full automated, which win a valuable rescue time. It plays a significant role in rescuing the wounded lives and reducing loss of lives and property of the State and people to reduce road traffic hazards.

Keywords-Accelerometers, Accidents , GPS, Mobile communication, Monitoring ,Vehicles

I. INTRODUCTION

Big data is a new term used to identify datasets that we cannot manage with current methodologies or data mining software tools due to their large size and complexity. Big Data mining is the capability of extracting useful information from these large datasets or streams of data. New mining techniques are necessary due to the volume, variability, and velocity, of such data. The Big Data challenge is becoming one of the most exciting opportunities for the years to come. In our proposed system we are going to implement accident detection system using sensors which is used to detect location of accident and Send Notification to Hospitals, Police portal and Emergency contact numbers. Also make the system smarter by providing the shortest path to the Ambulance. The main objective of the system is to provide emergency Ambulance service at the accident location. Our goal is to provide Android application to the user to send emergency alarm if he is in danger (If accident happened). User can store his medical information through android application. Also stores Emergency contact numbers to send notifications .And to use GPS to get users position and location which helps to get information about accident area.

II.RELATED WORK

Many traffic control systems propose autonomous solution which does not consider the future path of ambulance. In paper [1], the traffic control algorithm considers the current and destination location of ambulance to control traffic lights. This will help in optimization of time taken by ambulance to reach the hospital.

Emergency vehicle like ambulance need to reach their destinations at the earliest. If they spend a lot of time in traffic jams, precious lives of people may be in danger. With emergency vehicle clearance, the traffic signal turns to green as long as emergency vehicle is waiting in the traffic junction. The signal turns to red, only after the emergency vehicles passes through. Further enhancements can be done to the prototype by testing it with longer range RFID reader [2].

The key idea of developing this system is to provide timely help to patient and elder people in critical situation. An alert message about patient's condition is sent to relative for immediate help. A prototype of system has been successfully designed and tested for the same [3].

II. SYSTEM DESCRIPTION

A. Hardware Components

In this system Arduino is used to start the android application which is connected to Bluetooth and RFID Reader. User will tap the NFC tag on the RFID Reader and application will get start. Power supply is given to Arduino.

- Arduino: Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software. Here we are using Arduino to initiate android application. It is connected to Bluetooth and RFID Reader.
- RFID Reader: RFID readers are devices that power and communicate wirelessly and deliver tad data to operating system software. It is connected to Arduino. User tap the NFC tag on RFID Reader to initiate the android application.
- Bluetooth: HC-05 Wireless Bluetooth RF Transceiver Module Serial/TTL/RS232 for Arduino is used here. Connectivity between mobile phone and RFID Reader is given by Bluetooth.

B. Software Components

In this model Arduino is used and the software is also related to the same. Also we are using Android Studio and Eclipse. There are numerous libraries available to make coding easy and programming to be understood by new user. All this System software for controlling all different devices and reading of data is written in Assembly language of the code and MySQL server is used to store all this data and java language code is used to code.

- Eclipse: It is an integrated development environment (IDE) used in computer programming, and mostly used in java IDE.
- Android Studio: Mobile application is developed using this software.
- MySQL Workbench: List of hospitals, list of police, user's list are given.

III. BLOCK DIAGRAM

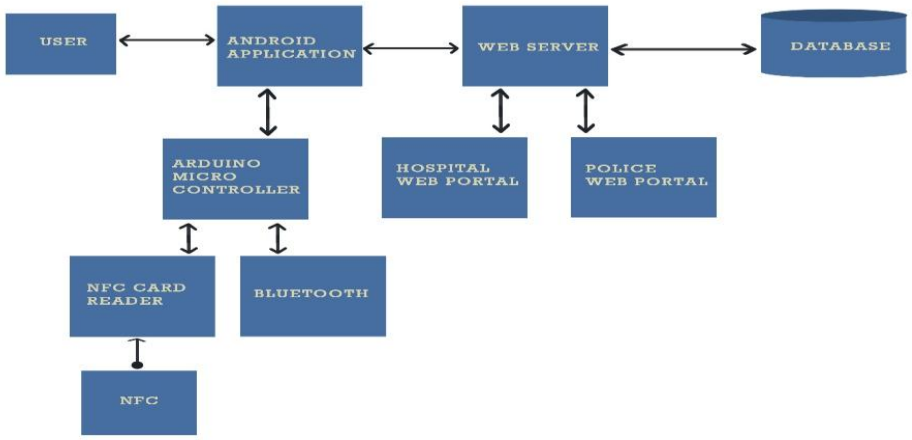

Figure 1

IV. WORKING:

Everybody nowadays carry a mobile phone where ever they go plus smartphone is the only thing that is with us all the time be it driving. Whenever accident happens the mobile phone is also the one which experiences the impact. Also the latest smart phones is well equipped with the necessary equipment like GPS, accelerometer, etc.

LIFEs an accident detection system for vehicles on roads. Basically the user needs to log in to the android application using - username & password which he/she created while registering or signing up.

While registering the user needs to provide the medical details such as - blood group, diabetic or not, cardiovascular problem or not along with basic details like Name, Mobile no. , Age, Address, Emergency contacts (minimum 2).The hardware components of the system - Bluetooth and NFC card reader are connected to Arduino microcontroller .Along with the above mentioned external h/w components the inbuilt mobile phone h/w components are also used such as GPS & accelerometer. There are two ways to start the applications first manually by opening the application or second automatically by touching the NFC tag on the card reader.

There are two separate web portal one for hospital & another for police station where the hospital web portal will receive the accident location along with the medical details of the patient & the police web portal will receive the accident location along with the emergency contact .Whenever the accident happens the accelerometer in the mobile phone measures the impact if the impact is greater the set threshold then a notification of the same is sent to the emergency contact , the hospital web portal & the police web portal. The emergency contacts receive a message regarding the accident.

On receiving the notification regarding the accident the hospital sends ambulance to the accident location using the fastest path for which the proposed system uses Google API's .This helps the ambulance to reach the destination location in short time thus providing fast service & back to the hospital avoiding the traffic

In case if the mobile phone fall by mistake then a pop up window appears on the screen which asks -" Need Help ? " for good 10 seconds along with vibration , if the user is alright then he/she responds if no response is received then immediately the notifications is sent to emergency contacts ,hospital & police station .

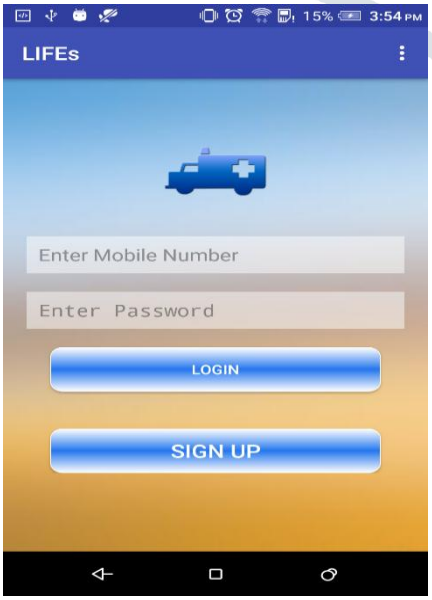

Figure 2

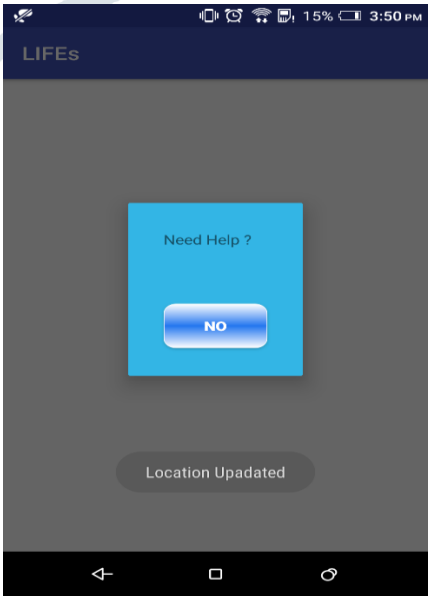

Figure 3

V. BENEFITS/APPICATIONS

- Emergency Services: With this system, will be receiving prompt services whenever the disaster occurs. This service will be provided without disruption to normal public traffic.
- Location Tracking: Our system will be providing exact location of accident which will induce us to give valuable services to users.
- System Report and Alert to Administration: This database will help the administrator with the useful information regarding the user which will help to send an alert to police portal and emergency contacts.

VI. CONCLUSION

Data mining is widely used in diverse areas. There are a number of commercial data mining system available today and yet there are many challenges in this field. In this paper we briefly reviewed the data mining for accident detection applications. In this proposed application, a system is described which will continuously detect the accident and simultaneously will control the notification to the Hospitals and Police portals. If there is lot of traffic to reach at accident location system will help Ambulance to find out shortest path. System is able to store user's medical profile and Emergency contact numbers. Hospital and Police portals are able to register themselves to the system.

VII. FUTURE SCOPE

The existing traffic measurement and analysis methods cannot easily be extended to the data centers. Systems can be modified using more advance algorithms and research for traffic flow prediction. Extending it to more précised results with more powerful predictors.

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