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Automation System for Accidental Support

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Abstract: Long response time required for emergency services to arrive is a primary reason behind increased fatalities in serious accidents case. One way to reduce this response time is to reduce the amount of time it takes to report an accident. Smartphones are ubiquitous and with network connectivity are perfect devices to quickly inform authorities about the accident. We are designing an Android application which will be beneficial for peoples to help other peoples who are suffering from incident like accident. It will help us to save the accidental person. Project is design for an accident detection system. The accident detection system inform the police control room about the accident by clicking photo of accident. The application suggest nearby hospitals and police stations list in application. FIR is generate by police station and send copy to the respected hospital system. Respected hospital scan user QRCode and provide treatment according to information. Also send emergency SMS to users preregister mobile number.

Keywords: Global Positioning System (GPS), QRCode (QRCode is a machine-readable optical label that contains information)

I. INTRODUCTION

A QR code is type of barcode that can contain more information than the familiar kind scanned at checkouts around the country. The "QR" stands for "quick response," a reference to the speed at which the more amounts of information they contain can be decrypte by scanners. They were invented in Japan and initially used for tracking shipping. As the code can be easily decrypte by the camera of smartphone,this technology is increasingly accessible to the average person. Instead of tracking car parts and packages, the codes can be used to store information of user. A QR code acts as a link embedded in the real world, integrating it with the virtual computer world.

The development of a transportation system has been the generative power for human beings to have the higher civilization above creatures in the earth. Automobile has a great importance in our daily life.

We use it to go to our work place, keep in touch with our friends and family, and deliver our goods. But it can also bring disaster to our people and even can kill us through accident. An accident is a deviation from expected behavior of event that adversely affects the property, living body or persons and the environment. Travelling is primary concern for everyone.

Recent advances in Android are one of the most popular smartphone platforms at the moment, and the popularity is even rising. Additionally, it is one of the most open and flexible platforms providing software developers easy access to phone hardware and rich software API. Smartphone technologies are making it possible minimize the death rate which are happening by vehicle accidents in a more effective manner.

II. PAPER SURVEY

A. using Smartphones to Detect car Accidents And Provide Situational Awareness to Emergency Responder

This paper shows how smartphones in a wireless mobile sensor network can capture the streams of data provided by their accelerometers, compasses, and GPS sensors to provide a portable "black box" that detects traffic accidents and records data related to accident events, such as the G-forces (accelerations) experienced by the driver.

B. Providing Accident Detection in Vehicular Networks Through

OBD-II Devices and Android-based Smartphones. By combining smartphones with existing vehicles through an appropriate interface we are able to move closer to the smart vehicle paradigm, offering the user new functionalities and services when driving. In this paper we propose an Android based application that monitors the vehicle through an On Board Diagnostics (OBD-II) interface, being able to detect accidents.

Our proposed application estimates the G force experienced by the passengers in case of a frontal collision,which is used together with airbag triggers to detect accidents. The application reacts to positive detection by sending details about the accident through either e-mail or SMS to pre-defined destinations, immediately followed by an automatic phone call to the emergency services.

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C. A Mobile Medicine Adherence Application With Intake Validation Using QR Code.

In this paper, they develop an application to track medication using a smart phone and the use of QR code. Each medication transaction requires a proof of work to signify that the user have taken their medication at the correct date and time. A QR-Code reader will be used to capture medication taken printed on medication labels and each scan is considered as a proof of work . Our contribution is to create a mobile application that can help track medication intake, as well as remind, inform and warn users about the medication that they are taking.

III. EXISTING SYSTEM

Existing system is totally manual and user need to call police station and hospital individually. Then police station register FIR. Unless and until police station finish its process hospital can't proceed further. After finishing FIR process, hospital admit the injured person. There isn't any automation system for accident.

A. Disadvantages of Existing System

1) Existing system is lengthy and time consuming.
2) Lengthy paper work process.
3) Need collaborative working of police station and hospital.

IV. PROPOSED SYSTEM

Propose system collect user information at beginning and generate QR code for individually. After accident, user take a photo and send to nearest police station recommended by system along with location information also inform to the nearest hospital. After police station permission, system automatically generate FIR along with accident image and send to the hospital. Hospital send feedback to user and after reaching to accident location nurse scan the user QR code to get user information instantly. And provide treatment to the user.

A. Advantages Of Proposed System:

1) Instant recommendation of nearest police station and hospital.
2) Required time is reduced
3) Reduction of paper work

V. SYSTEM ARCHITECTURE OVERVIEV AND IMPLEMENTATION

QRCode generated at the time of registration. All information stored at database. User capture photo and search nearest police station and hospital. After requesting nearest police station FIR is generated by police station. Police station send one copy to hospital. Hospital scan injured person and provide treatment according to information.

A. Methodology And Algorithm Used

1) Methodology: Methodologies to implement the system modules:
a) User Request
b) Nearest Location List.
c) Alert Notifications.
d) Module Description

2) Generation of Query: In this module there is user which has to register first into the After registration unique QRCode is generated for every user.

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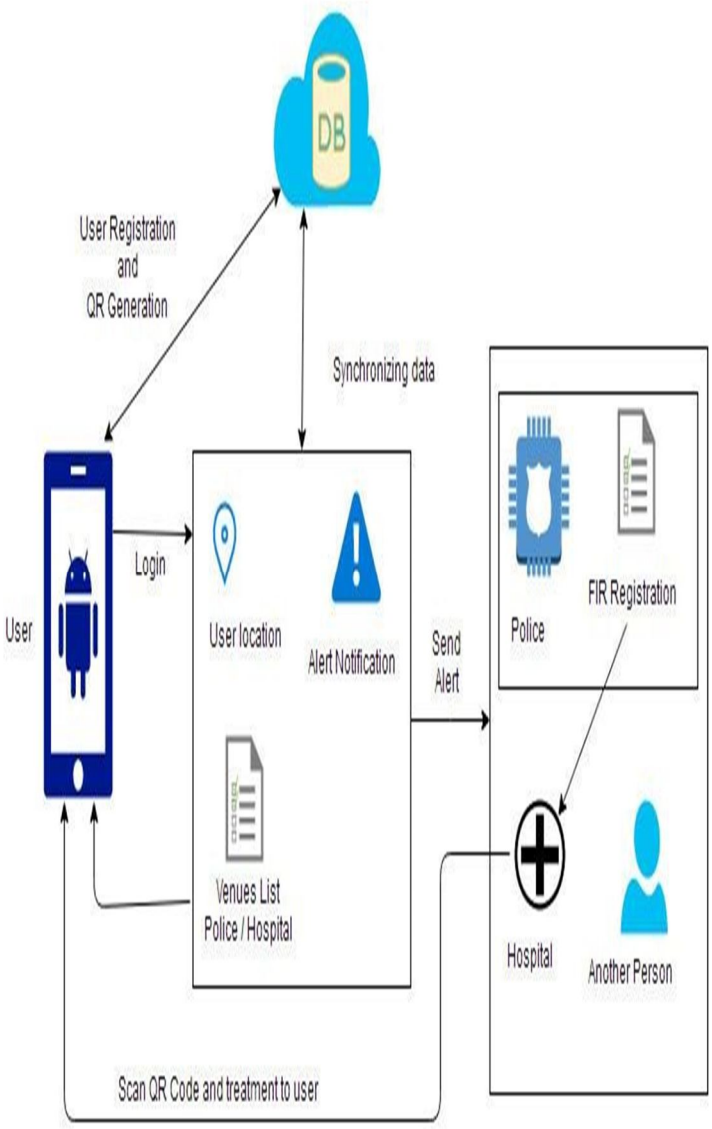

Fig.V.1 System Architecture

User simply take a picture of accident and send request. This request will goes to the nearest location of police and hospital
When the request is generated by the user, at the background searching the nearest location of police and hospital after searching done that request successfully send to that locations. In this user current location also used. On the basis of the current location of user get the recommendation list of nearest police station and user request goes to nearest hospital and police.
After the request successfully sent to the hospital and police the alert to the user in the form of massage. In that the successful response is present and FIR registration alert also including Alert notification will generate to police and hospital also in the form of the user request. Hospital can also see the alert related to FIR which is registered related to the accidental persons Hospital scan injured user QRCode and provide treatment basis on information stored in QRCode.
Algorithm Used
LatO = latitude of origin point, LongO = longitude
LatT= latitude of target point, LongT= longitude of target point.
Difference in latitude = LatO-LatT
Difference in longitude = LongO -LongT
Difference in latitude in radians =Difference in longitude in radians
O= LatO in radians.

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T= LatT in radians.

A=sin(/2)*sin(/2)+cos(O) *cos(T)*sin(/2)*sin(/2)

B= min(1,sqrt(A))

Distance = 2*R*B

KNNAlgorithm Algorithm:

The training examples are vectors in a multidimensional feature space, each with a class label.

The training phase of the algorithm consists only of storing the feature vectors and class labels of the training samples.

In the classification phase, k is a user-defined constant.

It is an unlabeled vector (a query or test point) is classified by assigning the label which is most frequent among the k training samples nearest to that query point.

B. Implementation of Modules

1) User : The person who met with the accident can access this application by simply pressing the button. Further he/she are provided with the details of nearby police station and hospital.

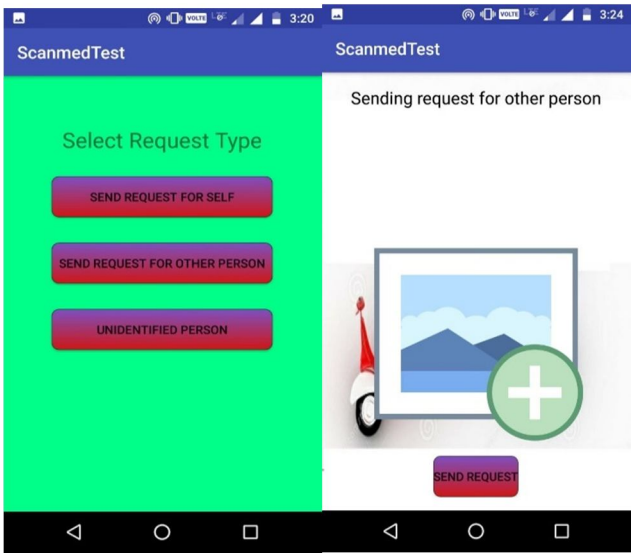

Fig V.B.1 User Application GUI

*2) Police Station :*After user pressing the button provided in the application then the GPS will be automatically made on and based on the current location we will fetch the details of nearby police station and further user can choose the police station and register the complaint. Police station generate FIR and send copy to the hospital.

Fig V.B.2 Police Station Login Page

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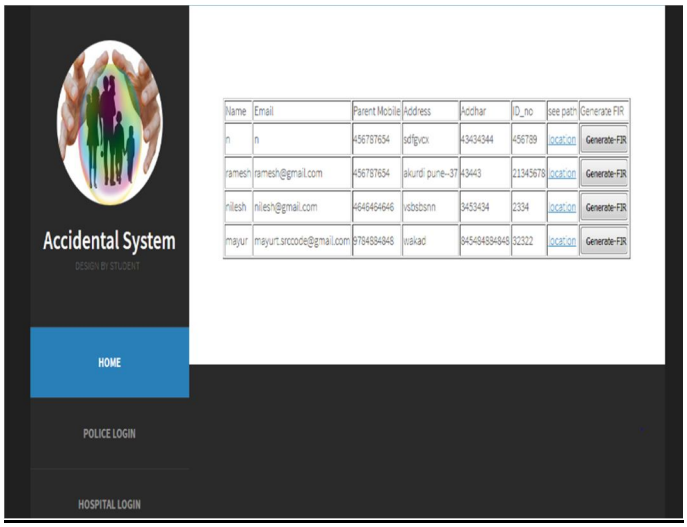

FigV.B.3 Request Receive For FIR Generation

3) Hospital: After user pressing the button provided in the application then the GPS (Global Positioning System) will be automatically made on and based on the current location we will fetch the details of nearby hospital and the user can choose the hospital and send the alert message within the budget he/she can afford.

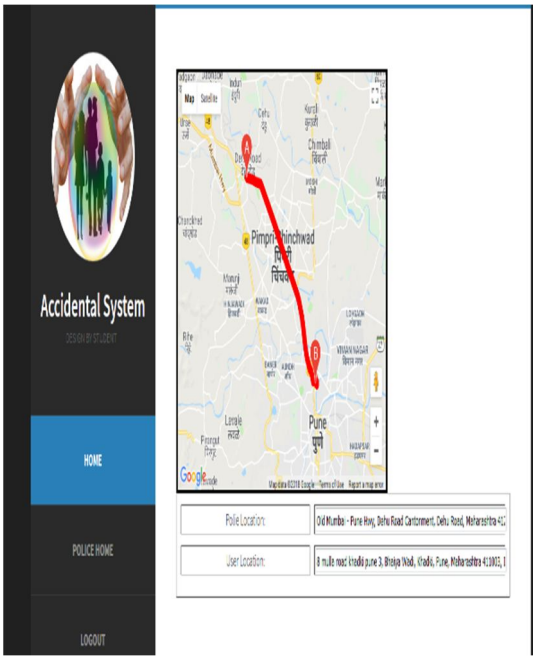

Fig V.B.4 Path From Hospital to User Location

4) QRCode : QRcode contain all the information of user. It get generated at the time of user registration. Hospital scan the qrcode to get the user information. After scanning QRCode the alert message which contains the current location of the user is sent to the emergency contact which the user is registered during registration process.

VI. APPLICATION

A. Can be used by drivers Car/Motor Vehicles to secure themselves.
B. Can be used by health department of government to survey the number of accidents if deployed in larger scale.
C. Can be use by police to increase speed of complaint registration.
D. With some modification we can also use this system for traffic estimation

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VII. CONCLUSIONS AND SCOPE

A. Conclusion

Results have shown that the application developed is able to correctly fulfill its purpose within a short time period. Our results show that the total time required to perform all the tasks, including the delivery of an SMS with the accident details, followed by providing the nearby police station and hospital details and sending them an alert message of the user accident with exact location of user, is taking short time period.

B. Scope

Road accidents take place frequently which causes huge loss of life and property because of the poor emergency facilities. Our project will providean optimum solution to this draw back. Propose system is used for emergency services i.e road accident. User store personal and medical information in QRCode also register complaint by taking photo. Police station used propose system for generation of FIR also send copy of FIR along with photo to hospital. Hospital fetch information of user by scanning QRCode and provide treatment according to information.

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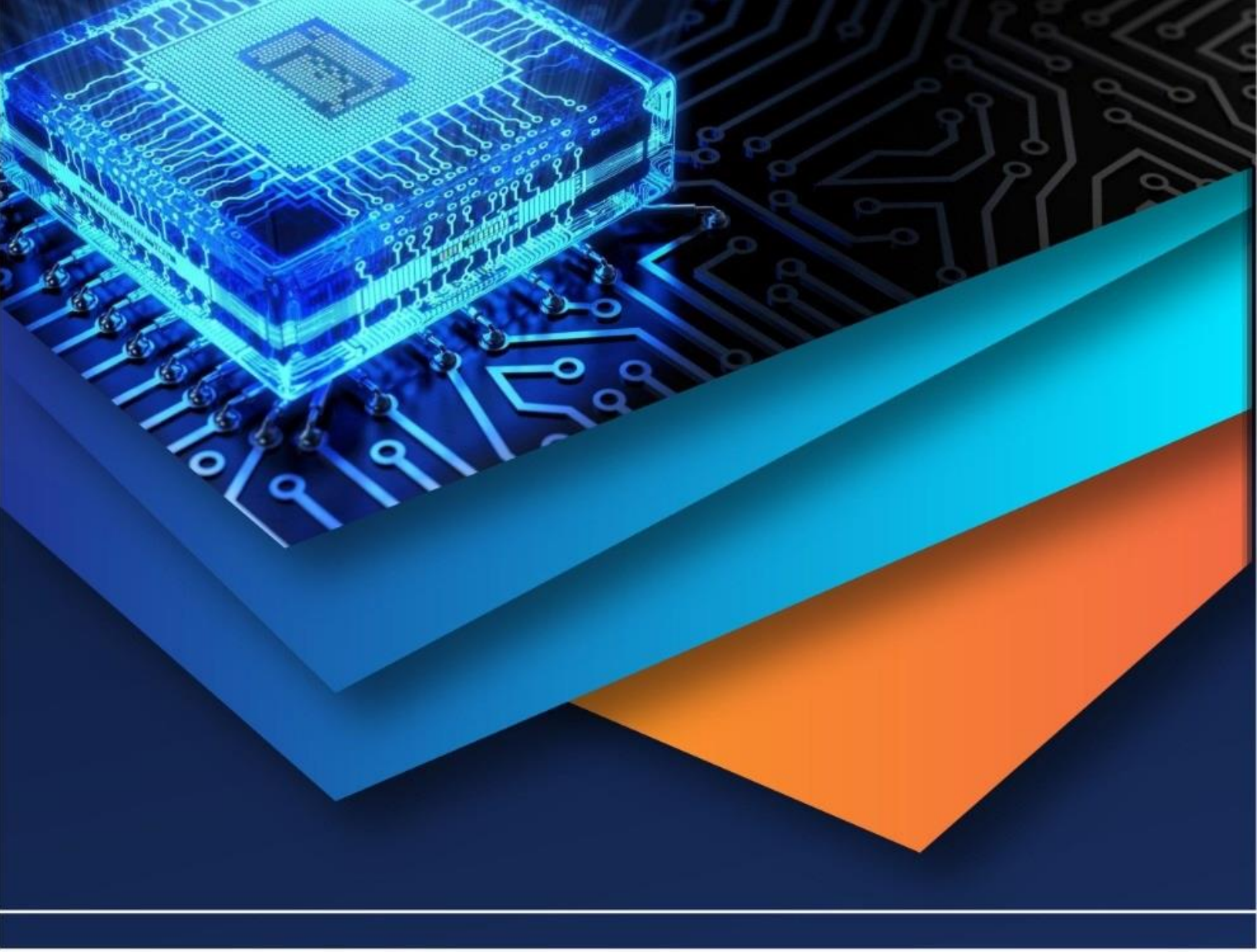

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