

Android Application for Accidental Management System Using QR Code

Nilesh Ingle, Gangadhar Bhise, Sahil Handoo, Vyankatesh Javalge,
Miss. Rachana Mudholkar

Department Of Computer Engineering, DYPIEMR, Akurdi, Pune, India.

Abstract:

An accident is an event which is not deliberately caused, and which is unexpected. It causes severe injuries to the people, damage to property and also loss of life in extreme situations. Various surveys show that deaths occurring due to road accidents in India varies according to age, gender and time. People between the age 25-40 are the most affected population group, though males face higher number of fatalities and injuries than their female counterparts. Moreover, road accidents usually occur in weather and during working hours. If proper and immediate initiatives are not taken, the total number of road traffic deaths in India is likely to cross the mark of 250,000 by the year 2025. Long response time taken by emergency services to arrive is a main reason behind increased fatalities in road accidents. The only way to reduce this response time is to reduce the amount of time it takes to report an accident. Smartphones are devices which can be used to immediately inform relevant authorities and the emergency services about the occurrence of an accident. Our objective is to design an android application that will help the people to help the victim of an accident. It will help us to provide immediate and quick help to the person.

Keywords — Mobile network, GPS, Scanner, QR code.

I. INTRODUCTION

An accident is an event or scenario which is different from the expected behavior that adversely affects the property, people and the environment. All the people need to travel in their daily life. Android is one of the most popular smartphone platforms at the moment, and the popularity is still rising at a very high rate. Smartphones are making it possible to minimize the death rate which is increasing rapidly by vehicle accidents in our country. Road accidents kill more people than some epidemics, natural disasters but the government refuse to pay attention to this serious issue. The traffic management is not systematic and transportation system is still lacking modern technologies. Road accidents resulted in 1,50,000 deaths and left more than half a million-injured last year marking the country's status as among the deadliest in the world for road users. Moreover, the counts for deaths and injuries in accidents are not accurately stated. This is a serious health emergency that requires immediate response and action. The discovery of the transportation system

has been the greatest achievement of human civilization. Automobile has a great importance in our daily life. We use it every day to go to our work place, meet our friends and family, and deliver our goods. But it can also kill us through accidents. This paper shows the module and the concept of an accident detection system. The accident detection system will inform the police control room about the accident by clicking photo of the accident and sending it. It will also inform the nearest hospital about the accident. Process can be done by the victim himself or by any passerby. The application suggests nearby hospitals and police stations list on the application's main screen. Using this application, the police station and hospital could detect the exact location of the victim. Respective hospital will scan victim's QR Code and provide treatment according to the corresponding information and will also send emergency SMS to users preregistered mobile number. A QR code is a type of barcode that can hold more information than the familiar kind scanned at checkouts around the country. The "QR" means "quick response," large amounts of information they contain can be

decoded by scanners at a high speed. They were invented in 1994 in Japan and initially used for tracking shipping. As the code can be easily decoded 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.

II. LITERATURE SURVEY

With accidents on the road affecting a large number of people every year, the current measures and initiatives for reducing the accidents is not enough. One of the initiatives is the implementation of eSafety Forum, which is an initiative for improving road safety by using new Information and Communications Technologies. The overall objective is to accelerate the research and development, deployment and use of Intelligent Integrated Safety Systems for increasing road safety and preventing the accidents. [5]

Android is one of the most popular smartphone platforms currently and the popularity is still rising. Additionally, it is one of the most open and flexible platforms providing software developers easy access to phone hardware and software. We evaluated a set of pothole detection algorithms on Android phones with a sensing application while driving a car. The results provide first insight into hardware differences between various smartphone models and suggestions for further investigation and optimization. [6]

By combining smartphones with existing vehicles through an appropriate interface we are able to move closer to the smart vehicle concept, offering the user new functionalities and services when driving. The application reacts by positively detecting and sending details about the accident through either e-mail or SMS to selected destinations, immediately followed by an automatic phone call to the emergency services. Using a real

car, experiments show that that the application reacts in just less than 3 seconds. [7]

This paper shows how smartphones in a wireless mobile sensor network can capture the streams of data provided by the accelerometers, compasses, and GPS sensors that detects traffic accidents and records the data related to accidents. Communication can be point-to-point, point-to-multipoint or broadcast, between the mobile nodes. [8]

III. PROBLEM STATEMENT

Whenever an accident takes place, the victim doesn't get immediate and quick medical help. The people nearby don't help the person who has met an accident because of fear of getting in some kind of trouble. So, they usually ignore and neglect the accident. This is the flaw in the existing system. As a result of this, the person faces serious injuries and in most of the cases, the victim dies.

IV. PROPOSED IDEA

Looking at the existing system, there are a number of faults and issues which usually affect not only the property of people but also their life. To solve this issue, this proposed model of accidental management application will help the victim in getting immediate medical help and attention. The proposed application design will inform the police control room or any other emergency responder about the accident. The application will also inform the hospital also. The proposed application will react and send details about the accident through e-mail or SMS to selected destinations followed by showing nearby hospitals and police stations on the main window of application. If the victim is conscious enough, he or she can directly press a button and the location of accident will be send to corresponding emergency responders who are nearest to the accident location. Moreover, the personal information of the people like health issues,

diseases will be stored using QR code which will help in getting the information about the victim and providing instant help.

V. GOALS AND OBJECTIVES

1. Reducing the chances of death and fatal injuries.
2. Providing quick help and medical service to victim.
3. Providing immediate information to nearest police station and hospital.
4. Reduced the paperwork like police FIR and hospital document work.
5. To provide the hospital with pre-acquired information of victim regarding personal health information and diseases.
6. Reducing the number of tests and medical procedures.

VI. ARCHITECTURAL MODEL

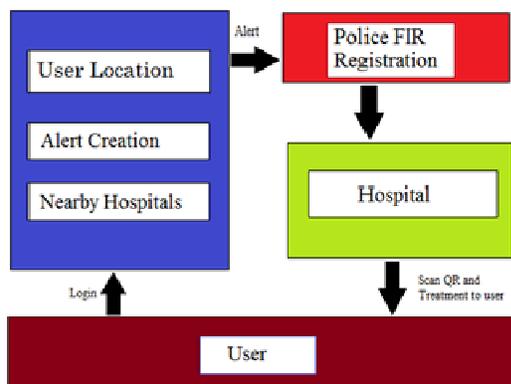


Fig: System Architecture

QR code is generated at the time of registration. All information is stored in database. User captures photo and searches nearest police station and hospital. After requesting nearest police station FIR is generated by police station. Police station sends one copy of FIR to hospital. Hospital will scan injured person's QR code and provide treatment according to the health information.

VII. CONCLUSIONS

The proposed application will be able to correctly fulfill its purpose within a short time period. It will show that the total time required to perform all the tasks, including the delivery of an SMS with the accident details will take a short period of time. The nearby police station and hospital details and sending them an alert message will take short time period.

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