

# A Study on Improving the Effectiveness of Medical Emergency Service by Utilizing IoT

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**Abstract** - Today's era internet of things (IoT) is expeditiously stretching and utilizing in enormous filed. IoT also use in medical sector to interlink the medical wealth and provide smart, reliable and effectual healthcare solution to the patients. In this proposed application we are going to employ IoT based design to enhance the healthcare system further. In medical urgency the victim or a patient isn't able to speak about anything concerning about themselves. During that time medical statistics of patients is not accessible due to unavailability. In addition when a victim met an accident his belongings such as wallet, purse, cell phone so on set apart by victim due to theft or accident. A device is an IoT base for affording a proper identification and perfect medical data of every emergency patients or victims. The proposed method which assembles the data and forward it on cloud centric to where it is examine and exercise in future. The application is efficient to send necessary data for emergency service to the nearby hospital by means of ambulance system. Immediate after marking desired availability hospital management grants the request.

**Index Terms:** Sensors, wireless communication, mobile application, hospital management, nearest search, tracking.

## 1. INTRODUCTION

IoT abbreviated as Internet of things is a system constituent with electronic sensor devices, internet connectivity and different kind of hardware, altogether can communicate each other over the internet. These constituent of IoT are monitored and controlled remotely. In short of IoT where T stands for things that could be object which aid victim to communicate properly through inside out of its environment. Eventually this would help us to mitigate our problem statement thoroughly. IoT basically assist to connect and communicate with anyone anywhere and anything over the internet connection. IoT has been evolving gradually in the field of medical healthcare sector through its numerous physical components and sensor devices. For example in this medical emergency regard, a victim or a person could not able to expound his situation when he/she met an accident. In such cases IoT plays an important role to gather personal data of that victim through its sensor devices. Here we use an optical sensor device to get information of victim. We are absolutely unaware when medical emergency takes place said another way it can occur anytime anywhere. To confront such situation we come up with a method which drags any horrible situation into a right solution. When a victim meet an accident all his belongings are kept aside such as his purse or wallet, electronic cards and similar stuffs which are important to him. This is just to ensure that all his assets are safe and they should still be available to him when he/she recovers. Now victim is fainted or go unconscious when he got with an accident in such circumstances, he is unable to speak regarding his situation he met with. So our proposed approach is to help such situation by taking initial steps like obtaining his personal information through IoT sensor device. All his data are then routed to the nearest hospital based on victim location and if there is an availability of the doctor, it displays victim details to the doctor and doctor gets to take his initial treatment for that victim. In one word it helps the doctor to see the victim information without any negotiation or consultation.

Today's time human life altering drastically and no one is much care about their health condition. In today's world people running after daily life ignoring their health along the side. Consequently he faces major health problems in future and at that time he could get to with real time and emergency medical facility. Because no hospital will afford victim an immediate care when he got to deal with his health issues. Our proposed method will aid victim to have an immediate care based on he/she location by taking victim details and sending them to the nearest hospital.

## 2. LITERATURE SURVEY

The term IoT has stretching gradually its mode of technology in the field of medial healthcare system with its invaluable physical assets such as sensors and hardware devices. With the rapid development of IoT making it able to done or achieve connecting smart and real time objects by means of internet by affording more data interoperability for the application fulfillment.

Recently there have been many research based on IoT demonstrating potential application of IoT in industrial sector such as medical healthcare services. Since the internet of things is a composition of various objects inter working each other over the internet connectivity, nevertheless these object resulting in heterogeneity problem in IoT realm. The aid of IoT in application nurtured the real time data, which is posing problem of information accessing and storing challenging issue. IoT in healthcare sector magnetizing more researchers to work on it. Within a certain years researchers have taken a deep interest in healthcare system based on IoT. Recent survey claims that IoT optimizing the human effort to certain extent by holding it secure. Internet of things has become a trend where every real time application turning towards to it to make use of its advantages.

In this paper, IoT is being employed for the purpose of medicine dealing with children and their diseases and as well as for the fulfillment of eldercare or senior citizens requirements. Our proposed approach certainly has some disadvantages such as sustaining degree of compatible network.

### 3. PROPOSED TECHNOLOGY AND COMPONENTS USED

We proposed a real time communication and location finding system for android application by wielding IoT. Thus it affords real time communication between two ends such as ambulance and hospital. As per the victim current situation, there is nothing facility available in ambulance which suggest the care taker nearest hospital searching and doctor availability. If there is no availability of doctor, then information of the victim is route to the other available nearest hospital.

#### SYSTEM OUTLOOK

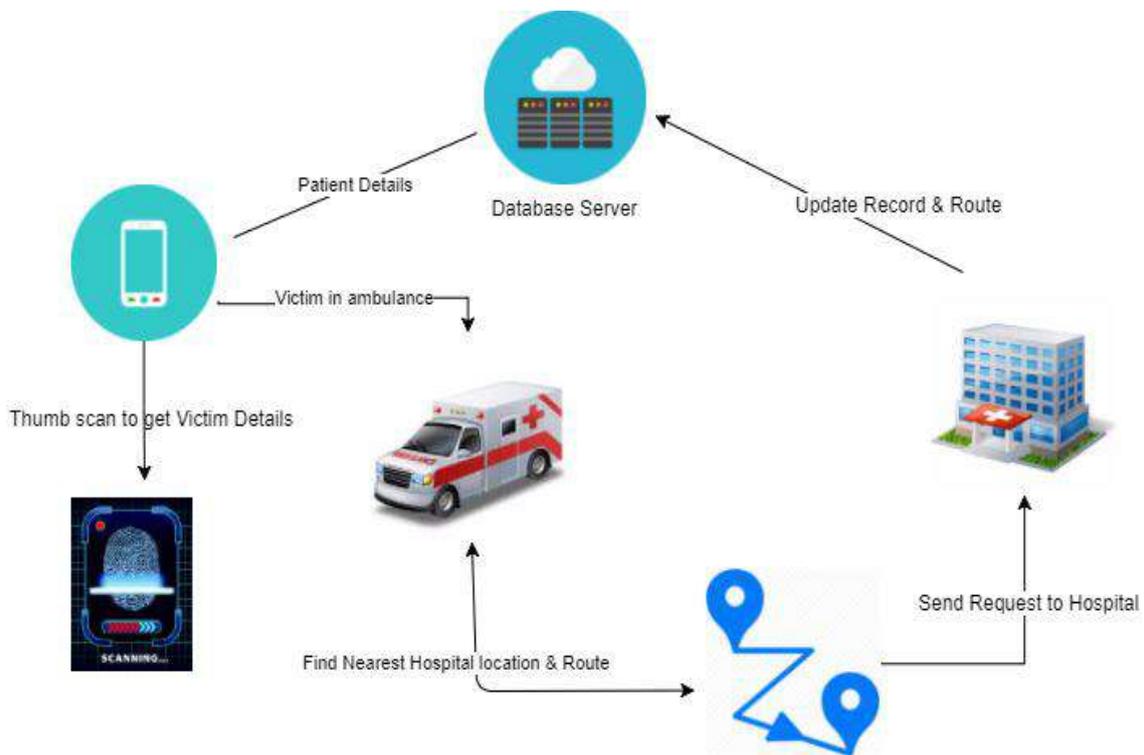


Fig -1: System Framework

The above figure depicts the system architectures where every module in the system interconnected to each other. The sensor device shown in the figure is an optical sensor device used to access the victim details. Firstly the device admin take the preliminary steps such as obtaining victim details and then routed it to the database server through which the doctor access the victim information on the other end. Once the detail is fetched it starts looking nearest hospital based on victim current location. If there is an availability of hospital data victim sent to that hospital and taken care by the doctors upon admitting.

**COMPONENT USED:**



**Fig -2:** Optical Sensor device

Principle of processing fingerprint is two parts: Fingerprint rolling and Fingerprint matching. With rolling a user has to enter finger twice and meanwhile with matching user enter the finger through optical sensor. These sensor are used to obtain the data of a victim for e.g. if a person meet an accident in such certain situation we utilize these cases which helps admin to grab the preliminary details of a victim and eventually help the doctor to identify the victim situation. Basically these sensors could be smart objects like smart devices which fits on the body of a human to fetch the initial details of a victim.

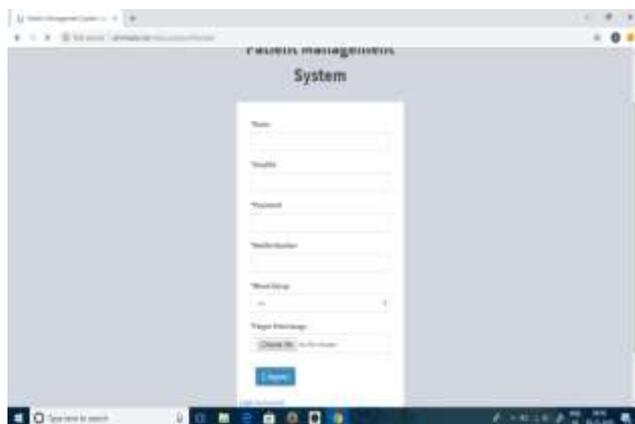
**ADVANTAGES:**

- 1. Virtually non-paper work.
- 2. Stand in need of less time compared to manual process.
- 3. Well advanced hospital accomplishment.
- 5. Result in percentage of saving victim life.

**4. CONCLUSION**

The most considerable column of the proposed approach is when an ambulance reaches out to the victim, it first rushes to get the initial details of that victim by means of IoT device. Here we use an optical sensor device to get the personal data of victim (registered user). Earlier there were no such real time method or facility for victims unless the care takers or medical authorized meets the victim personally. So we come up with an idea of providing real time communication between doctor and patient. This will mitigate the quandary of doctor to get the information of patient or victim. Consequently it will help to boost saving human life with the help of our proposed approach.

**RESULTS**



**Fig -3:** Registration Form



**Fig-** User Log-in Page

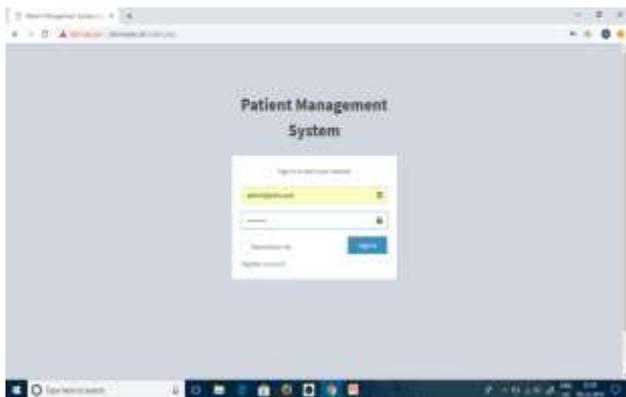


Fig -3: Registration Form

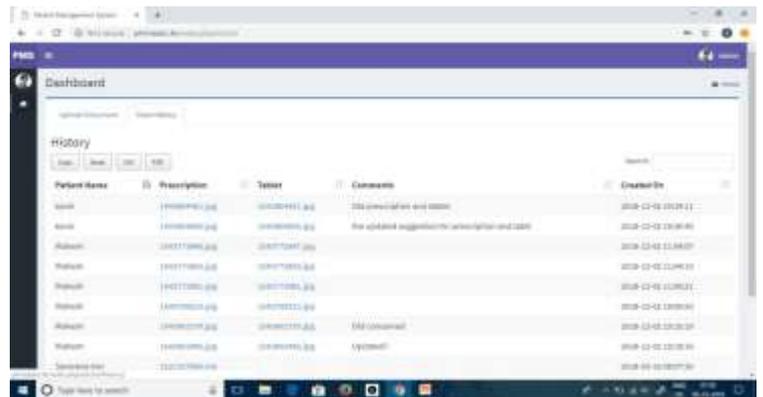


Fig -4: Patients requests Dashboard

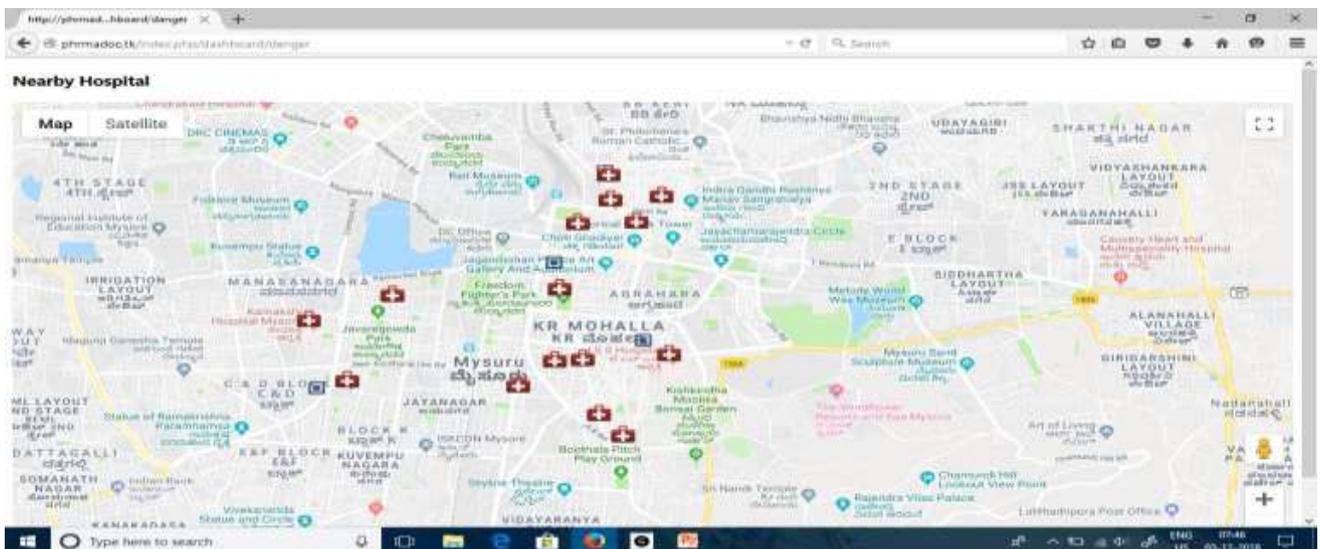


Fig -4: Near By Hospital Location

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