Uber for Ambulances, Emergency Health Response, and Blood Inventory

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Abstract

In today's society having an effective and efficient healthcare service is of at most importance. Ambulances are important part of medical services. Ambulance helps patience's reach hospitals and avail medical services faster but due to the shortage of ambulances, its becomes difficult for the patients to reach the hospital, so a small step has been taken towards filling this gap by developing an application that would enable the user to book an ambulance to reach the hospital quickly. The user can upload their current location and destination through the map in the application. The application would then show the available ambulances near the patient's location and the user can choose the appropriate ambulance. Once a particular ambulance is booked by the user the ambulance driver would receive a message. Once the booking is confirmed by the ambulance driver, they will be provided the location of the user.

Keywords. Ambulance, Health, Blood Inventory, Patient.

1. INTRODUCTION

In today's society having an effective and efficient healthcare service is of at most importance. The ambulance has proved to be very helpful as it helps the patient to reach the hospital faster. Italso to helps avail the medical services quickly, but due to the shortage of ambulances, it becomes difficult for the patients to reach the hospital. Existing System - Effective Ambulance Service Advantages - Helps the ambulance driver find the patient's location.Disadvantages - Less feature available. A small step has been taken towards filling this gap by developing an application that would enable a person to book an ambulance for a patient so that they reach the hospital faster. The patient can upload their current location and destination through the map in the application. The application would then show the available ambulances nearthe patient's location and the user can choose the appropriate rides.

Functional Requirements

- Administrator should have access to all details of Users, Ambulances, and ` hospitals.
- End devices must be in network to get details.

- No user could access any details without being a register.

2. LITERATURE SURVEY

A survey done on the various Users and taking their Opinions on the Online Cab Services on the two of the most popular cab rental applications Ola and Uber and the data collected from their customers is presented in [1]. The data is collected from professionals in this field. It is found that customers favor Uber over Olawhen it comes to billing. Whereas when safety is the concern ola is preferred more than uber [2]. A general thesis on the ambulance Service has developed a way for saving lives more efficiently. With the help of this application, the ambulance can reach the patient quickly,the user's location is traced or delivered by the application. This can also accommodate important equipment and services that will ensure the well-being of thepatient [3] It can be done by collecting the surveillance of the streets in real-time by using IGA. Ambulances interact with each other using IGA. Ambulance gets information on othercars with the help of IGA [4]. Global positioning system GPS Based Shortest Path for Ambulances makes sense of GPSas a lattice of the shuttle, that sends case. Data about the fluctuating area of the gadget to andfrom the satellite the back to the planet. GPS handsets, for example, exploring objects are used to gauge the area, speed, and length at the position of the transporter [5]. Location-based push service with clustering method. It is a position-based push administration structure. This applies the grouping technique works on the transmission intricacy of crisis information with the assistance of Push and Pull LBS. Traditionally, where crisis reactions were finished physically with call focuses, dormancy inside reaction was upward keeping human existence in question. Later all manual reactions framework was supplanted with a computerized framework with calculations on independent gadgets either in rescue vehicle or handsets. Crisis Medical System Services is a calculation that diminishes the delay to dispatch emergency vehicle administrations within 10 to 15 minutes in urban communities and 20 to 30 minutes in local regions. EMSSguarantees clear data from the patient, whether it be the area, infection, or charging. Consequently, with EMSS the patient can get early development care [6]. RIS for Ambulance Services given GPS and GIS innovation gives a Route Construction Algorithm. The rescue vehicle appraises the street information gathered by IGA and characterizes the briefest way by RCA. RCA utilizes the Dijkstra technique where an intersection implies one vertex, a road inside a junction implies an edge, a way involves the heading, an unremarkable passageway of each intersection turns into the force of the edge,and a guide is a marked outline. For intersections where there is traffic and vehicle are amazed, information isn't gathered, henceforth further boundaries are not identified. Subsequently, street information was dissected before traffic is finished and shippedoff to the rescue vehicle. On the off chance that the current way needs a more drawn-out length than the new course, the rescue vehicle assesses the new course.[7] It is an application made by the Delhi police. Client requirements to enlist at the Delhi Police site. After fruitful enlistment, the client gets an enrollment key (OTP) which should be placed to finish the application design. When the client of the Himmat application raises the SOS alert fromthe Himmat App, the area data and sound video is sent to the Delhi Police control room. DelhiPolice can then quickly send the closest Police help to the person in question [8]. It is an application that is made by the Mumbai police which gives fundamental tips onprivate security and digital dangers and the utilization GPS for finding an individual in trouble. Some of the related systems are presented in Table 1, along with

their limitations.

Table 1. Summary of Related Systems

Work	Method	Features	Limitations
Collection Of Data From Uber And OlaConsumers [1]	Data collection	Determine which cab rental is preferred bycustomers	Low availability in Rural areas. High charges in peak hours
Effective Ambulance Service [2]	Location detection	Helps the ambulance driver findthe patient's location.	Less features available.
Dynamic Routing For Emergency Vehicle [3]	Dynamic Routing	The cars in the ambulancepath get notified about the ambulance behind them.	The notification can be distracting and dangerous for the driver especially if they are on a busy road

3. PROPOSED SYSTEM

In the proposed system, Administrator will be provided with the Web application for managing users, maintaining their details. Also admin can add the ambulance and manage their details, and can track the ambulances as shown in Figure 1.

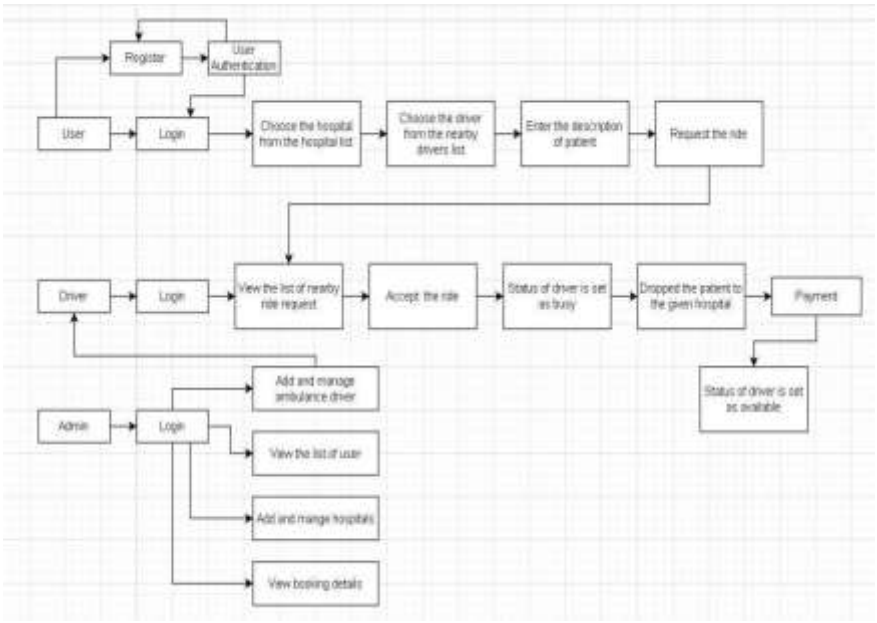

Figure 1. System Architecture

The proposed system is divided into two parts. First is the user's side which is basically a smart phone owned by the person/user. Internet connection is required by the user to request for an ambulance. Thus, it is essential for the user to have telephone and internet services enabled for the system to function. The second is the ambulance side. The ambulance ride

is an android application used by the driver. It uses internet and maps. Google Maps will be used to locate the user. When the request for an ambulance made by the user, the request will be sent to the server first. The server then will look for available ambulances around the user's location. Then a request is sent to the nearest available ambulance. Once the request is accepted the driver is provided with the person's location, name and phone number At the same time user will be able to see the driver's location. If the driver rejects the request, the server will look for another nearby ambulance and the request is sent.

4. RESULTS

Various results obtained during the development of the prototype are presented in this section. The initial screen and the user authentication process in the proposed framework is presented in Figure 2, where if a user can register as a new member and then can successfully use the application.

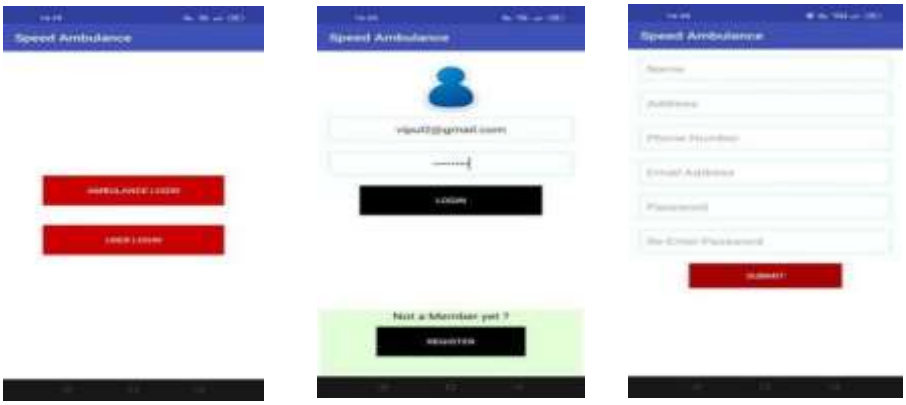

Figure 2. Home page and User Authentication in Proposed System

Furthermore, the list of hospitals will be populated in the application ad the user can select a hospital from the list, which will then ask for the confirmation from the user to book an ambulance and to add the details of the medical emergency as presented in Figure 3.

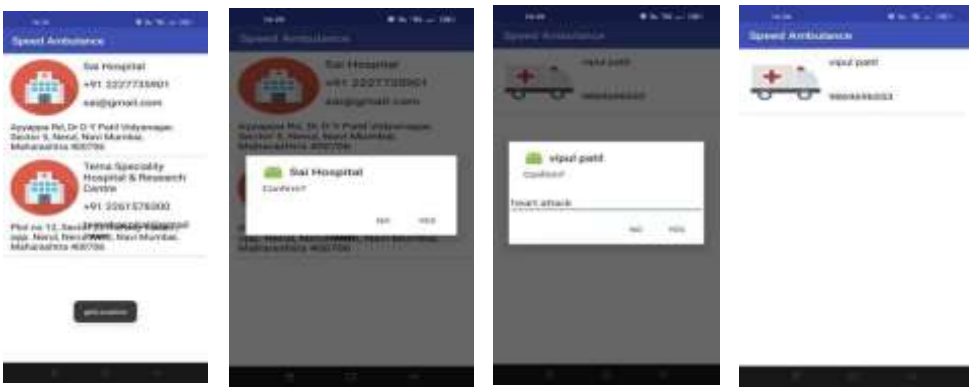

Figure 3. Display of Hospitals List and Ambulance Booking Process

The user can track the ambulance through the application and can pay the bill as presented in Figure 4.

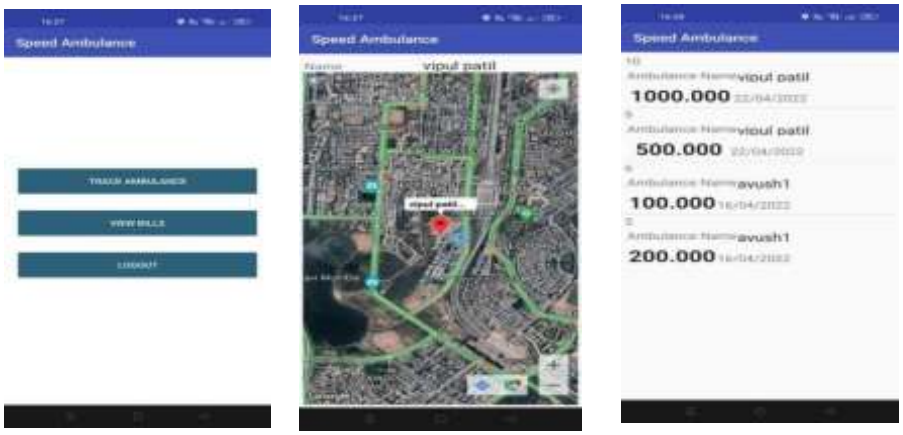

Figure 4. Ambulance Tracking and Bill Payment through App

Figure 5. Driver side interface and booking related information

The driver side interface of the proposed application is presented in Figure 5, where the driver can log in to the interface and can see the user's details to check the destination.

Figure 5. Admin side interface for Admin login and user details

The admin side interface of the proposed application will be able to check the existing ambulances and to add the new ambulance through the portal as shown in Figure 6. Existing hospitals and the addition of new hospital can also be done at the admin side as presented in Figure 7. Furthermore, all the booking details and the location of the user will also be available at the admin side as shown in Figure 8.

Figure 6. Admin side interface with ambulance details and addition of new ambulance

Figure 7. Hospital addition and checking at Admin Login

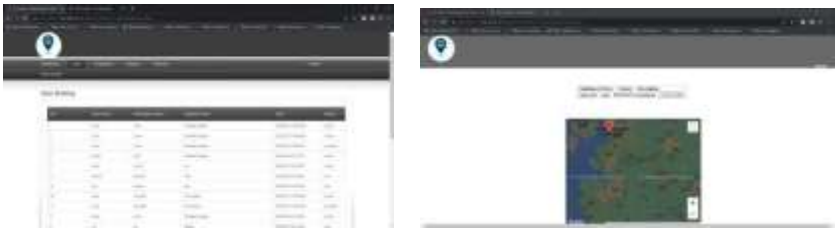

Figure 8. User Booking Details and Location Checking at Admin Side

5. CONCLUSION

This proposed project can provide a safe, secure and efficient way of ambulance tracking for users. An approach will be made towards rescuing a patients life quickly. Final demo will be an app similar to that of an online taxi service provider app , but the services we will be providing will be different , as mentioned above . We will try to incorporate all the mentioned features with proper designing making it very much user friendly and easy to use. The overhead of calling is eliminated. Even if the route is not known to the driver, still he can reach the patients location.

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