Real Time Ambulance Service Application

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Abstract:

As the technology is getting advanced the Medical devices, Sensors, Wireless Communication devices and Software applications are becoming more advantageous to the healthcare facilities. As due to some situations the ambulance might get late or might not be available because of heavy traffic, poor communication and poor road network by this it may lead to losses of lives.

An Android application i.e. Med Rescue provides the efficient (24x7) services to people who are in emergency situations. GPS facility is embedded in the application so that the driver location can be tracked by patient and in same way patient location can be tracked by ambulance driver by choosing shortest path .

Introduction:

Ambulance Services are said to be as mobile-hospital and it plays an important role of saving patient lives. As there is increase in population and traffic congestion the ambulance might get late or might not be available to peoples who are need.

Our project is on Real Time Ambulance Service Application which helps the people to request an ambulance and can be taken to hospital on time.

About Application:

Med Rescue
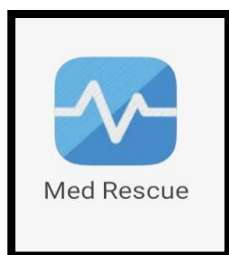
This application is basically designed for the people who are emergency situations. For example, In present situation if there is an accident or some heart attack the person should contact the ambulance driver only via call and he has to explain the current location sometimes it might not be possible. In this application GPS is used to find out shortest path to reach patient. While using this application the patient and driver location should be ON. This kind of Ambulance service system aims at providing a better ambulance facilities to the patients and help to save their lives.

Keywords: Google Maps, Android studio, Dijkstra Algorithm, Firebase, JAVA, XML.

Existing System:

In Emergency Cases the driver will face difficulty to reach accident spot in minimum amount of time because of heavy traffic due to this many people may lose their lives and in this the people can contact the ambulance driver only via phone call and explain current situation and place. By this System it

would not help the ambulance reach the hospital on time.

Disadvantages:

1. Information sharing between the patient/passenger and driver is week.

2. Punctuality will not be maintained by ambulance driver.

3. Assigning the responsibility to ambulance driver by service provider will become difficult in long run.

Proposed System:

In this application it consist of two java based application:

1. User based application where user can request an ambulance in emergency.

2. Driver based application, where driver will receive a notification when user request for an ambulance.

GPS is used to track both patient location and also the driver location. Ambulance reaches the patient location in minimum amount of time, by using Google API. By this system there is more advantages for people who are emergency situations because when user request an ambulance it directly shares the location of patient to ambulance driver there is no need of explanation of current location to driver.

Implementation Details:

1. Android studio

This application is implemented by using the Android studio. Android studio is an official IDE for android application development. Android studio is based on powerful code editor and developer tools provided by IntelliJ IDEA, Android studio also consists of other features that enhance the productivity for building Android applications,

1. Flexible Gradle based build system.
2. Fast and feature rich emulator.

2. Firebase

In this application Firebase is used to store the information about patient and driver. Firebase is a set of backend cloud computing services and application development platforms provided by Google. Firebase is used for storing the data as it is type of NoSQL it as limitless Storage and for security purpose as it provide authentication.

3. XML

It is a Extensible Mark-up Language (XML) that is used to design user interface. It is markup language and file format for storing, transmitting and reconstructing arbitrary data. It defines a set of rules for encoding documents in both Human readable and Machine readable.

4. JAVA

This application is developed by using JAVA Language as it is used in major scale for development of mobile application. Mostly it is used because it is platform independent where it can be run on any platform i.e. Windows , Mac , Linux and for security purpose as it uses class and object and it does not support to pointers and manage memory manually so that there will be no interference in application.

5. Google Map

GPS facility is used to track the location of patient as GPS returns accurate location. Google API is as API that Google provides allows to developers to hook on to services. API is a shortcut way to access powerful tools such as Google maps, Google translators and other web applications.

6. Dijkstra Algorithm

Dijkstra algorithm is used to find out the shortest way to reach the patient . It uses the greedy approach for finding the shortest path.

Methodology:
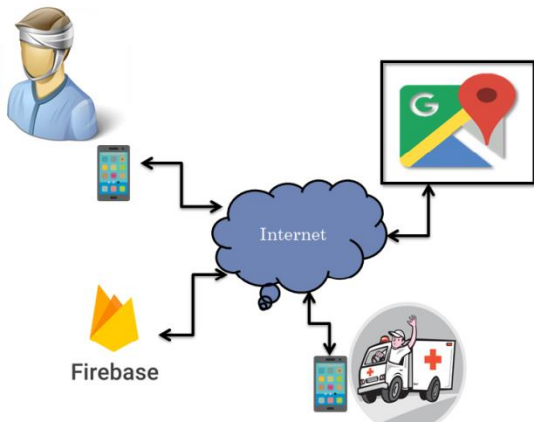
Steps:

1. When user is in emergency situation, user will request an ambulance through the application.
2. The request notification will be sent to driver.
3. By the Dijkstra algorithm the application will find the nearest driver to the patient location.
4. The request will be sent to that driver who is nearest.
5. If driver accepts the request then the driver's location and driver details will sent to patient. If the driver will not accept or if he is not available then it again calculates which driver is nearest to the patient.
6. As GPS is embedded in application the driver can track the patient and by using Google maps and by dijkstra algorithm driver can find out shortest way and fastest route to reach patient.

Firebase is used to store the details of both patient and driver. While driver using this application he has keep the location and working button ON to receive the request of patient.

Workflow:
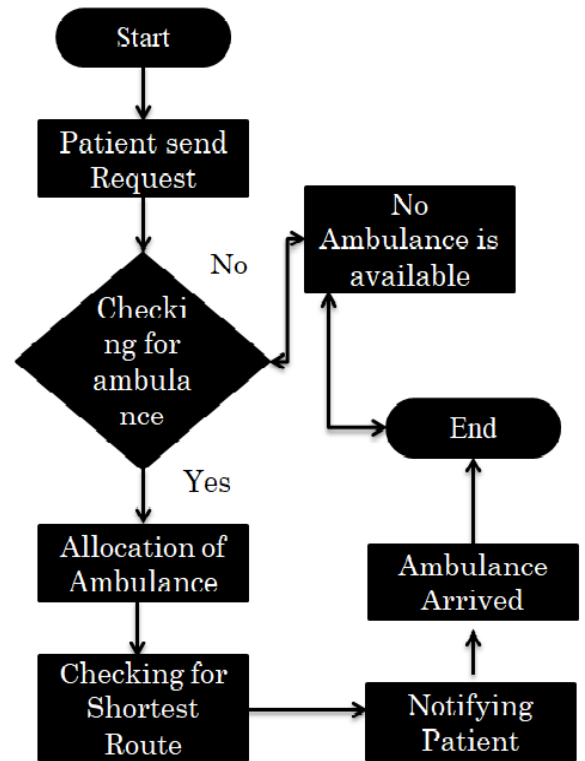
Registration of application:
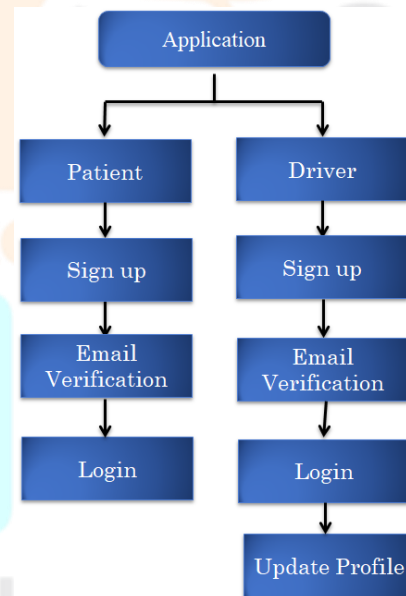
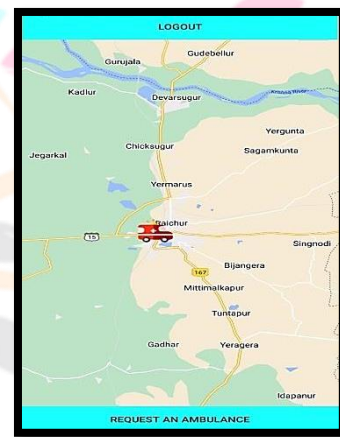**Outcomes:**

Login Page:

User Registration: 1.As patient

Signup Page:

Login Page:

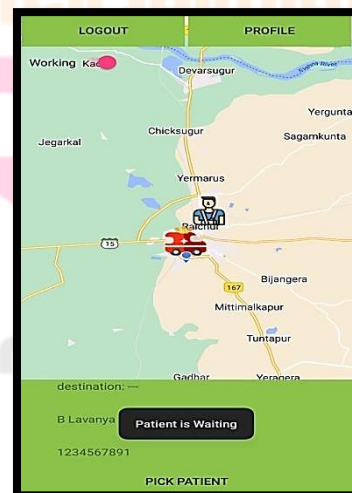**Working:**

Patient Interface: Requesting an Ambulance.

2. As Driver

Signup Page:

**Driver Interface:** Receiving the request.
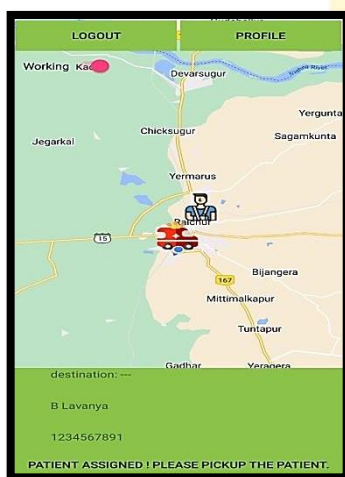

**Patient Interface:** Location of driver

Conclusion:

By summing up all the work there are few project working on real-time services. Med rescue application provides efficient facilities to the patient and it can be easy for installation. By this application the patient or others can directly contact the ambulance driver and they can track the location of driver. Patient need not to wait in any case since shortest path is given by Google Map. As some people prefer to get treatment done is some respective hospitals, hence in future the application can be modified according to user expectations.
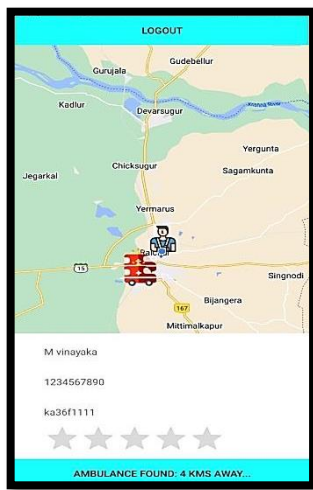
Driver Interface: When driver reaches the location of patient.

Patient Interface: Ambulance is reached to patient location
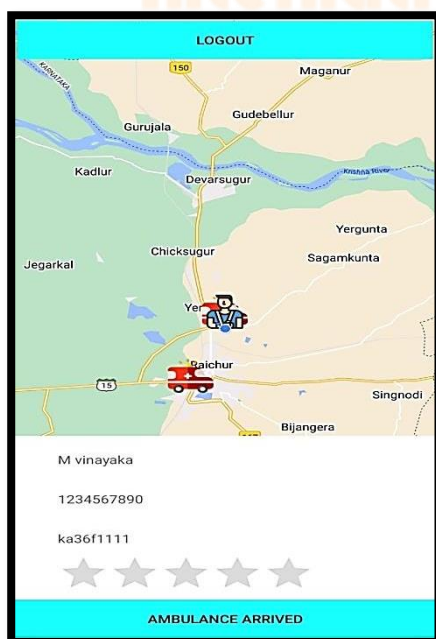
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