

# DOCTOR AMBULANCE SERVICE APP

Sumit Kshirsagar, Vishal Kamble, Samarth Salgar, Pranav Pathare, Prof. Suman Puri

<sup>1</sup> Student, Computer Engineering, JSPM's R.S.C.O.E, Maharashtra, India

<sup>2</sup> Student, Computer Engineering, JSPM's R.S.C.O.E, Maharashtra, India

<sup>3</sup> Student, Computer Engineering, JSPM's R.S.C.O.E, Maharashtra, India

<sup>4</sup> Student, Computer Engineering, JSPM's R.S.C.O.E, Maharashtra, India

<sup>5</sup> Professor, Co-Ordinator , Computer Engineering, JSPM's R.S.C.O.E, Maharashtra, India

## ABSTRACT

*Operating an ambulance involves significant challenges, including managing biomedical equipment, nurses, and doctors, making automation difficult. Due to the limited daily use of ambulances compared to regular vehicles, a single driver may handle multiple ambulances, each with unique equipment needs. Creating a driver app for each vehicle becomes impractical.*

*In this project, the Siren24, an Android app, has been introduced. Unlike the emergency service 102 accessed through calls, this app lets users book ambulances with their Android smartphones. When a request is made through the Boosted App, the information is relayed to the mainframe office. A 24/7 server processes the request, collecting coordinates and identifying the nearest station. The server updates the user on the ongoing request and the ambulance station. This process is efficiently managed by the mainframe on both server and user sides. The system aims to reduce response times and safeguard lives in emergencies amid a rising population and increased risks.*

**Keyword :** - Application, Google Maps, Android, Emergency Services.

## 1. Introduction

The term 'Ambulance' evokes thoughts of the critical life-saving process. In our contemporary world, marked by a burgeoning population, people often grapple with feelings of confinement and fear stemming from the constant threat of road accidents and various health crises, both known and unknown. Swift remedies are imperative, but regrettably, even a brief delay can lead to the tragic loss of lives. To safeguard humanity and counteract fatalities resulting from delays in relief efforts, it is crucial to establish and diligently train robust rescue systems in every country.

Our primary objective is to enhance the efficiency of the ambulance service system through the development of a specialized Android application designed for emergency response. This application aims to unite all rescue centers under a single, streamlined platform, facilitating the swift summoning of assistance in the aftermath of an accident. While several organizations offer ambulance services in India, the existing systems often suffer from disorganization and lack of coordination. Consequently, individuals tend to rely on specific ambulance services such as potentially leading to delays if the requested ambulance is not readily available near the accident site.

To address these challenges, our proposed solution is the development of an Android app named the Siren24. Users must register on the app with their mobile and CNIC numbers to ensure responsible usage. In emergency situations, users can request an ambulance through the app, and the information is promptly relayed to a centralized main office equipped with a 24/7 server. The server autonomously evaluates the request, calculates coordinates, checks ambulance availability at the nearest station, and provides the user with real-time updates on the progress of their request, including the estimated time of arrival and the station dispatching the ambulance.

This comprehensive process, guided by a well-defined algorithm, ensures ethical handling of requests, with the entire history maintained on the server. Upon completion of the task, the status and ambulance details are promptly updated on the server for reference.

## 2. Requirement Gathering

The administration and the developer bear the responsibility for overseeing the system. The administrator is empowered to handle tasks such as modifications, cancellations, and other issues that may impact the system. Additionally, the administrator has the authority to make decisions regarding alterations to the app's design and can collaborate with the developer to enhance internal features for user-friendly usage.

### 2.1 Business Problem:

This app aims to offer user-friendly access to essential services. In the contemporary technological landscape, there are few applications tailored for mobile users in India that facilitates the process of requesting an ambulance.

### 2.2 Solution Approach:

Proposing an Android-driven ambulance system to refine and streamline existing emergency services. The concept entails bolstering team capabilities by integrating an Android app with a web platform. This platform empowers users to monitor the progress of their ambulance requests, while administrators can adeptly oversee and manage user-related activities. Crucially, this application is crafted to be accessible to users without incurring any costs.

### 2.3 Project Description:

We propose the development of an Android-based ambulance system to enhance the efficiency of existing ambulance services. Our approach involves elevating the functionality of a team system by integrating an Android app with a web-based platform. This platform enables users to monitor the status of their ambulance requests, while administrators maintain and review user histories. The app is designed to be cost-free.

Both the administrator and developer will actively contribute to the design and testing phases of the new Ambulance Team System. Their participation includes integration testing, system testing, and end-user testing for modules such as Authentication, Authorization, and additional services. These participants will also provide support for end-user training classes.

The technical team assumes responsibility for app development, testing, error identification, and the elimination of unnecessary elements.



**Fig -1:** Implementation approach

**2.4 Technology survey:**

Android is a Linux-based software stack that functions as an open-source application, designed to accommodate various devices and form factors. The diagram below illustrates the key components of the Android platform.



**Fig -2:** Android Platform

**2.5 Android Studio:**

Android Studio serves as the official Integrated Development Environment (IDE) for Android app development, encompassing all the essential tools for creating diverse Android applications.

The innovative app publishing format introduced in Android Studio offers a more streamlined approach to constructing and launching your app. With the Android App Bundle, delivering an exceptional user experience in a compact app size becomes notably simpler, catering to the extensive range of Android devices prevalent in today's market. The transition is seamless, requiring no code refactoring to immediately enjoy the advantages of a compact application.

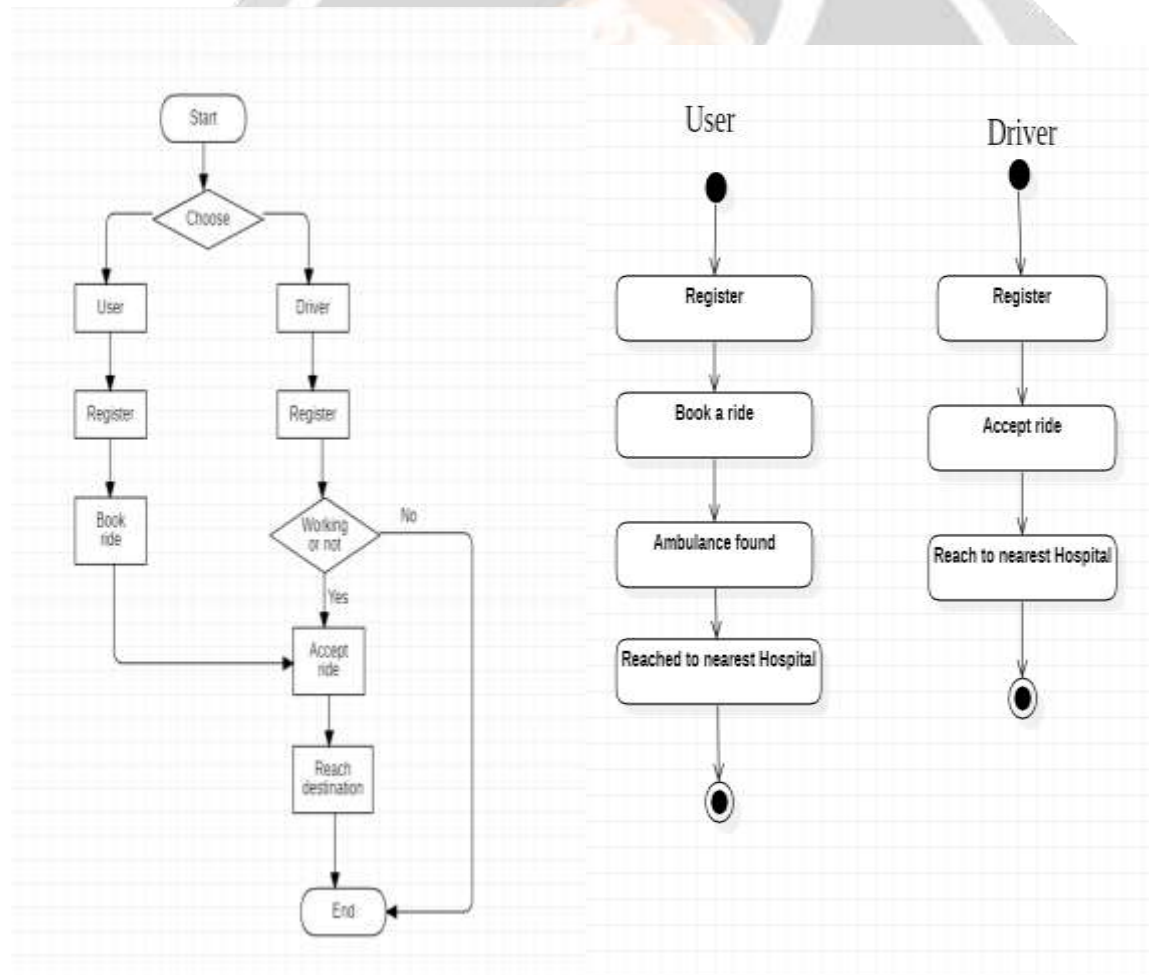


Fig -3: Android Studio

**2.6 Flow chart:**

**Process Flow diagram**

**Activity Diagram**



**3. Result**

User can register on the app and book ambulance nearest to them and it is mandatory for ambulance driver to accept User's request and drop the user to the nearest Hospital.

**3.1 Roles and Responsibility**

Ambulance Driver Roles:- To Register their vehicle. Accept ride.

Users Roles:- Registration with valid phone number, booking a ride when necessary.



Fig 4. Siren 24 App logo

**3.2 Application Interface:**

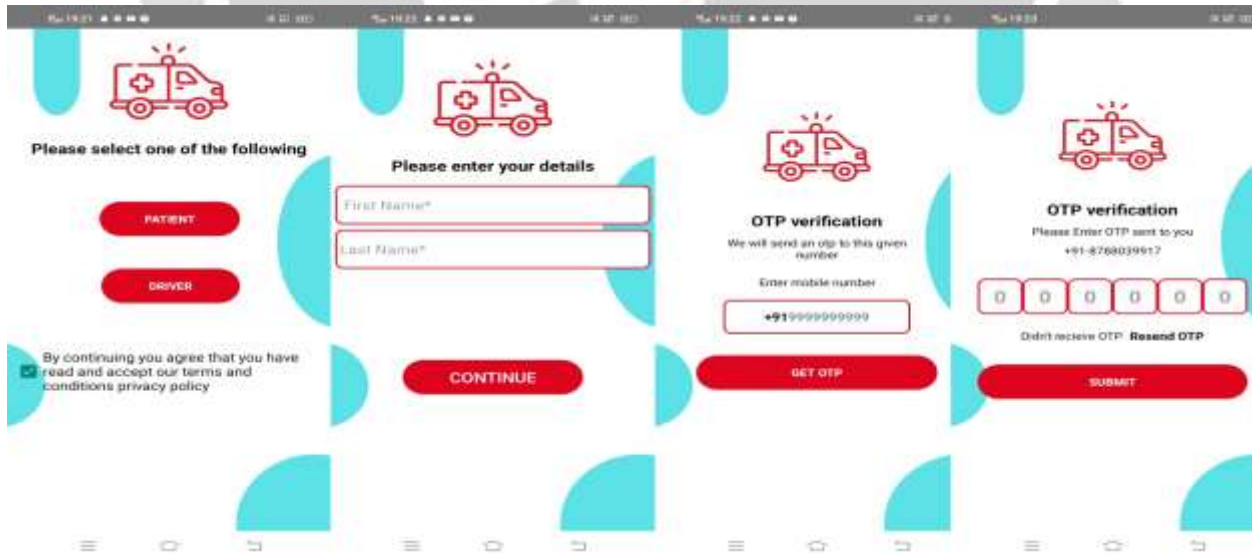
**a) User side:**

**1. Registration activity:-**

Registration is signing up for using this application. User can register via his credentials.

Credentials include-

- Full Name
- Valid Phone number



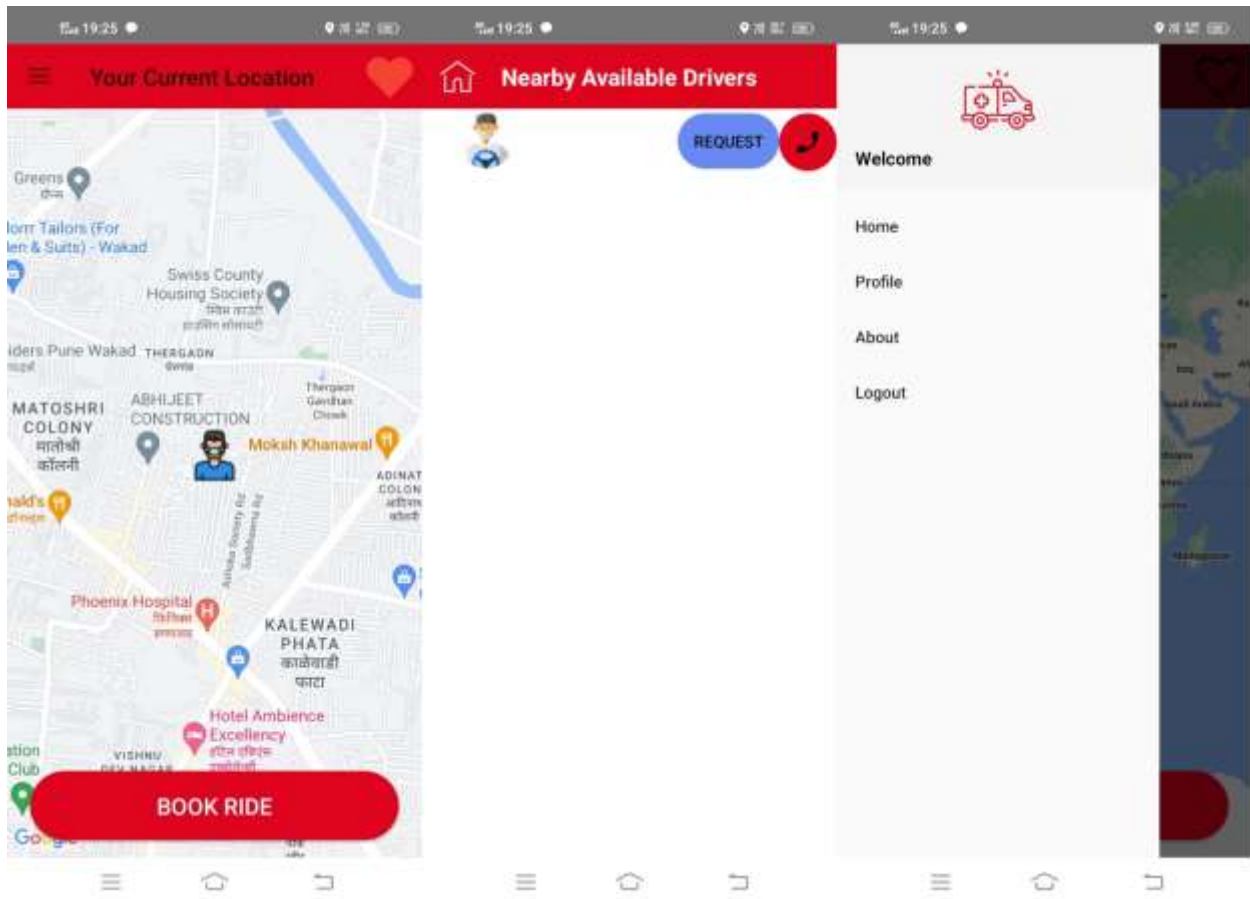


Fig -5 : User's Interface

**b) Driver side:**

**1. Registration activity:-**

Registration is signing up for using this application. Driver can register via his credentials. Credentials include-

- Full Name
- Valid Phone number
- Ambulance type

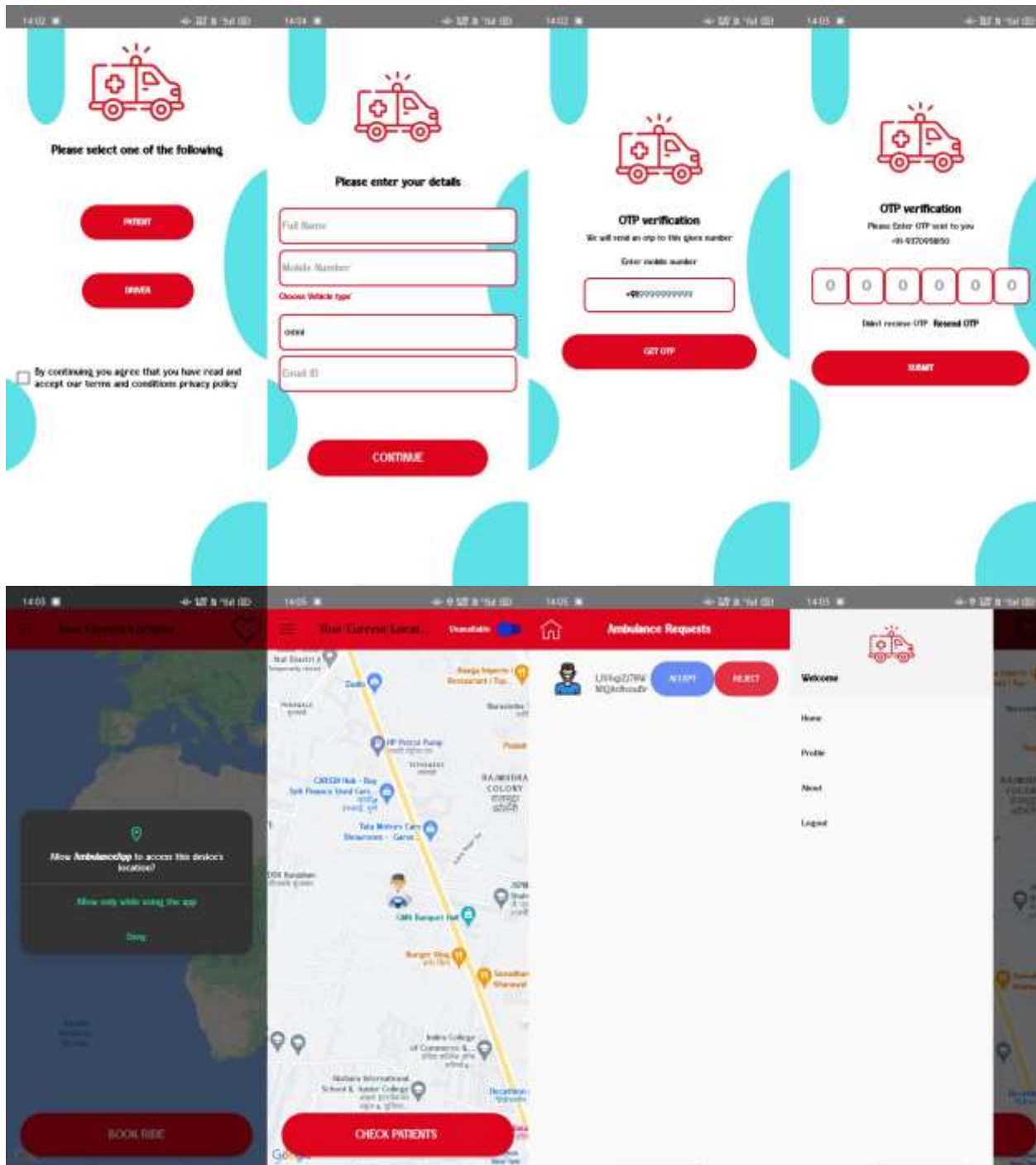


Fig -6 : Driver’s Interface

4. CONCLUSIONS

In the event of emergencies, this application proves advantageous for users by saving valuable time that would otherwise be spent searching for an ambulance through alternative means. The comprehensive hospital information provided assists in identifying the most suitable medical facility for the patient's treatment. Transmitting health details about the patient to the hospitals enables the medical staff to prepare all necessary resources for prompt treatment, eliminating the need for the patient to wait. The app directly supplies information on all hospitals through maps, eliminating the need to visit individual hospital websites for information. Real-time information enhances

medical procedures, contributing significantly to saving patients' lives. The future development of this Ambulance Service app project can incorporate similar concepts for further enhancements. Addressing additional factors, such as traffic congestion, is crucial for saving lives. Traffic poses a serious obstacle in daily life, potentially causing delays for ambulances enroute to hospitals. To mitigate this, the app extends its functionality to traffic police, allowing them to track the ambulance's current location through GPS. This information empowers traffic police to proactively clear the way for the ambulance, ensuring a timely arrival at the hospital.

## 5. REFERENCES

- [1]. <https://en.wikipedia.org/wiki/Android>
- [2]. <http://www.vogella.com/tutorials/AndroidServices/article>
- [3]. <https://developer.android.com/guide/components/services>
- [4]. <https://developers.google.com/maps/documentation/android-api>
- [5]. <https://firebase.google.com/docs/functions>
- [6]. <https://www.tutorialspoint.com/android>
- [7]. <https://developer.android.com/training/basics>
- [8]. <https://www.udemy.com/course/learn-android-application-development>

