



LIFE EXPRESS: AMBULANCE SERVICE APP

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Abstract: In emergency situations like accidents, a quick and effective response is crucial. This abstract discusses the creation of a complete system to handle different accident scenarios promptly and save lives. The solution uses advanced technologies to monitor and communicate in real-time, making the emergency response process more efficient. The goal is to simplify and enhance how we deal with accidents, ensuring that help arrives swiftly and effectively through the integration of cutting-edge technologies.

Index Terms - Intelligent Route Optimization, emergency response, real-time tracking, user request, hospital list selection.

I. INTRODUCTION

In the fast-paced world, getting help quickly during an emergency is super important. That's where the Ambulance Management System comes in. It's like a smart system that makes sure ambulances get to people who need help as fast as possible. Imagine you or someone you know needs urgent help. The Ambulance Management System makes sure that when you call for an ambulance, it comes racing to you as soon as possible. It uses smart technology to keep track of where all the ambulances are in real-time and helps them find the fastest way to get to the person who needs help. So, it's like a superhero for emergencies, making sure that ambulances get there fast and everything goes smoothly. It's all about using clever tools to help people when they really need it.

II. LITERATURE REVIEW

The research introduces a mobile application for ambulance services [1][2], emphasizing live tracking through Google Maps and navigator geolocation methods. This innovation addresses the challenge of ambulance delays caused by heavy traffic. The application enables ambulance drivers to register availability and location, streamlining the dispatch process. Additionally, the paper highlights the unique feature allowing ambulance drivers to control traffic signals, contributing to faster emergency responses.

his study focuses on a mobile-based system for scheduling medical emergency ambulance services.[2] The authors stress the importance of leveraging mobile technology for optimized scheduling, ensuring swift responses to critical situations. The research highlights the significance of efficient coordination in enhancing overall emergency medical services.

The research delves into the development of a Smart Ambulance Service System, emphasizing the integration of smart technologies to enhance ambulance services. The paper discusses various functionalities and benefits, showcasing the potential for improved efficiency and responsiveness in emergency situations.[3][5]

Introducing an Ambulance Booking Mobile Application, [4][1][2] the paper emphasizes efficient booking processes. The study underscores the importance of a userfriendly mobile application for booking ambulances, streamlining interactions between users, administrators, and ambulance drivers.

This study discusses a Mobile-Based Medical Emergency Ambulance Scheduling System,[2][1][5] elaborating on challenges addressed by the system. It emphasizes the role of mobile technology in optimizing ambulance scheduling for timely responses to medical emergencies.

Exploring the development of an Intelligent Ambulance Management System in smart cities, the research emphasizes the incorporation of intelligent technologies to enhance ambulance services, contributing to more efficient emergency responses.[6]

Presenting Ambrites, an Ambulance Booking Application for emergency health response and blood inventory management,[7][1] the study highlights the multifaceted functionality of the application, addressing both ambulance services and blood inventory needs.

III. PROBLEM IDENTIFICATION

In the examination of the ambulance management system, a critical issue has been identified. It has been observed that ambulances often fail to reach the emergency site in a timely manner. A significant challenge arises when users or patients, especially those in distress or injured, encounter difficulties in promptly contacting the ambulance services. Tragically, this delay in communication has resulted in instances where patients succumb to injuries due to a lack of timely medical intervention. Another noteworthy problem is the inability of ambulances to accurately locate the patient or the accident area, further impeding the swift response required in emergency situations. These challenges underscore the pressing need for improvements in the ambulance management system to ensure more effective and timely emergency medical services.

IV. PROBLEM SOLUTION

In response to identified challenges in our ambulance management system, we have implemented robust solutions to ensure timely and efficient emergency services. To address delays in ambulance arrival, our application incorporates an intuitive user interface, enabling individuals to quickly request assistance with minimal effort, even in high-stress situations. Real-time GPS tracking technology has been integrated, allowing both users and ambulances to track each other's locations simultaneously. This feature not only expedites response times but also addresses issues where users may be unable to initiate a call manually. In critical situations, automated alerts can be triggered by sensors or devices, ensuring that emergency services are promptly notified.

The application allows users to choose their preferred hospital, promoting patient autonomy. Alternatively, in urgent cases, the system automatically selects the nearest hospital, prioritizing swift medical attention. This dual functionality empowers users and enhances the efficiency of ambulance services, significantly reducing the risk of delayed treatment and improving overall emergency response outcomes. Through these strategic measures, our ambulance management system aims to save lives by providing timely and accessible healthcare services to those in need.

V. SCOPE AND LIMITATIONS

The scope of the Ambulance Management System encompasses revolutionizing emergency medical services by introducing real-time tracking, efficient dispatching, and smart traffic management for ambulances. It aims to significantly improve response times during emergencies, contributing to better patient outcomes. However, there are limitations to consider, including potential challenges in rural or remote areas with limited technological infrastructure. Additionally, the system's effectiveness may depend on network connectivity, and user familiarity with technology could impact its widespread adoption. Despite these limitations, the Ambulance Management System holds great promise for enhancing emergency response in various settings, particularly in urban areas with robust technological infrastructure.

VI. PROPOSED WORK

1. Real-Time User Request and Ambulance Allocation:

Users initiate the process by sending requests to the admin through a dedicated interface. The system promptly checks the availability of ambulances, considering factors such as proximity and current assignments. Upon confirming availability, the system initiates real-time tracking, allowing users to monitor the approaching ambulance on a dynamic map interface. Simultaneously, the ambulance system evaluates the most efficient route based on live traffic data, ensuring swift response times.

2. Dynamic Tracking and Hospital Selection Optimization:

As the ambulance approaches the user's location, both parties benefit from continuous real-time tracking, fostering seamless communication. In case of emergency calls, the system prioritizes the ambulance's route dynamically. Upon pickup, the ambulance system evaluates the hospital selection process. If a hospital is pre-designated, the system proceeds accordingly. Otherwise, it employs an algorithm to identify the nearest hospital, optimizing for the shortest distance and ensuring timely medical attention. This dynamic approach enhances the efficiency of the ambulance management system, prioritizing user safety and minimizing response times.

VII. SYSTEM ARCHITECTURE

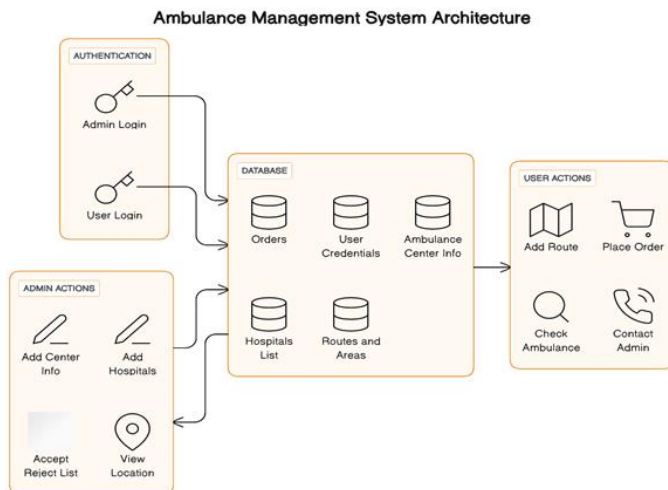


Figure: ambulance management system design

1. User Interface (UI):

User Application: The front-end application accessible to users for initiating ambulance requests, tracking ambulance location, and communicating emergency situations.

Admin Dashboard: An interface for administrators to manage ambulance requests, allocate resources, and monitor the overall system.

2. Application Layer:

User Management: Manages user accounts, authentication, and authorization.

Ambulance Allocation: Determines ambulance availability, allocates resources based on real-time requests, and optimizes routes.

Emergency Call Handling: Handles emergency calls, prioritizes ambulance dispatch, and communicates with users and emergency services.

Hospital Allocation: Decides hospital destinations, considering user preferences or optimizing for the nearest and most suitable healthcare facility.

3. ambulance service center:

In the envisioned Ambulance Management System, the Ambulance Service Center acts as the centralized hub facilitating the deployment of ambulances to users in need. Ambulances are registered and managed on the admin side, allowing ambulance owners, which may include groups, NGOs, and even individuals such as politicians engaged in charitable initiatives, to contribute their resources to the community. The system provides a platform for these compassionate contributors to register their ambulances, making them available for emergency services. This collaborative effort ensures a more extensive and diversified fleet of ambulances, maximizing coverage and improving the overall efficiency of emergency medical services. Through this unified system, the community benefits from a network of ambulance resources, ultimately contributing to enhanced healthcare accessibility and timely emergency response.

4. Database Management:

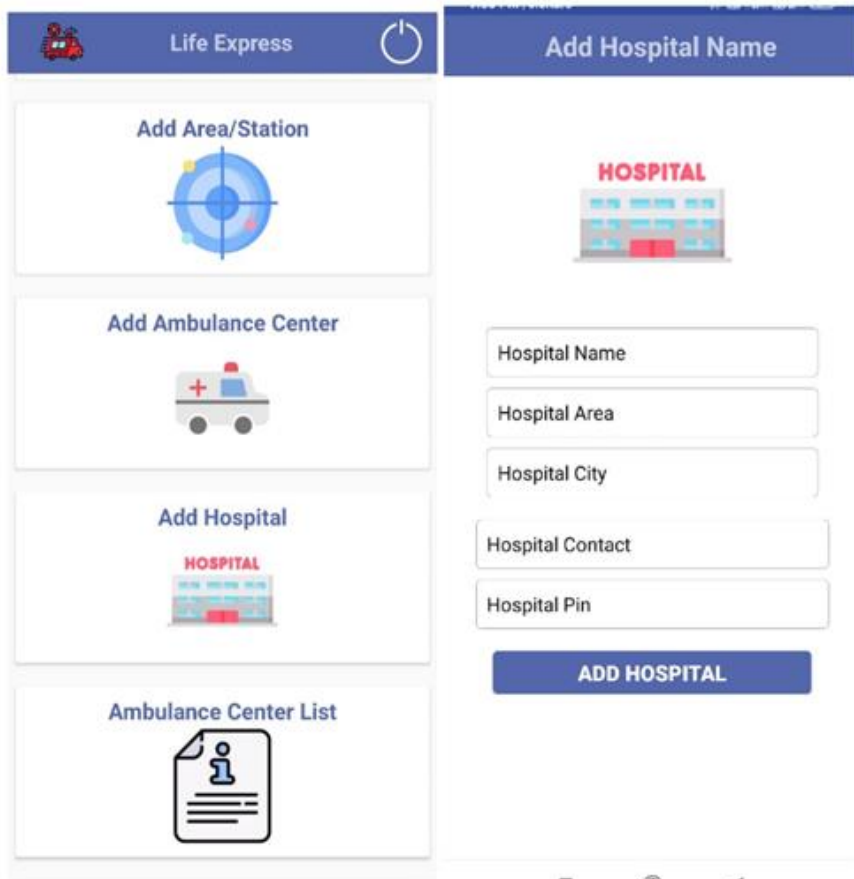
User Database: Stores user information, preferences, and historical data.

Ambulance Fleet Database: Manages ambulance details, realtime location, and availability status.

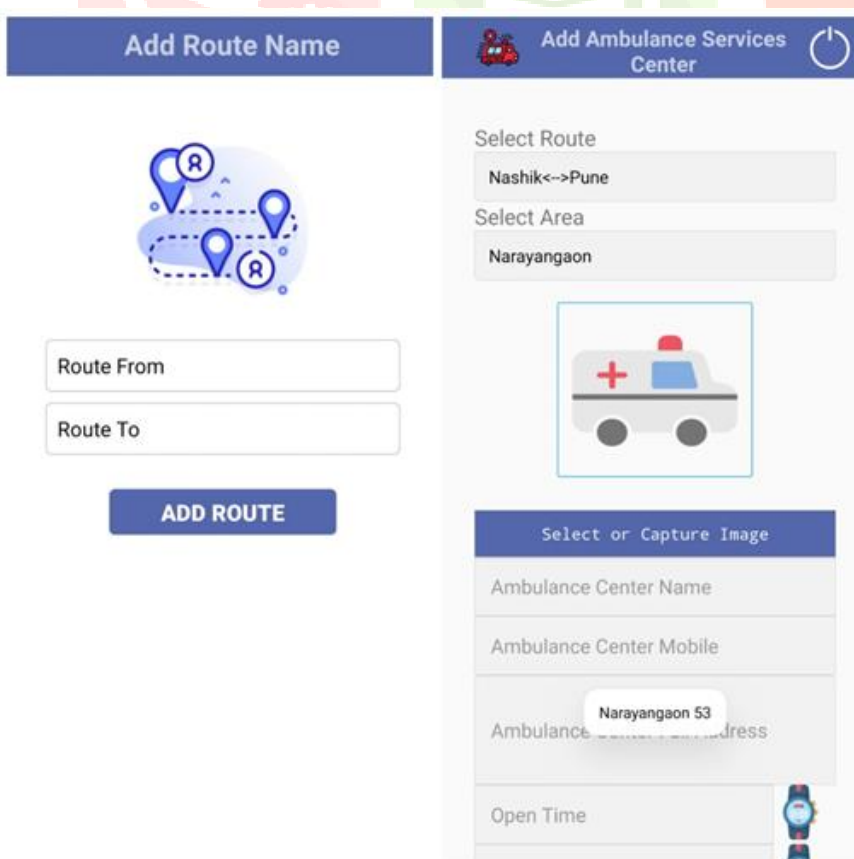
Hospital Database: Stores information about hospitals, including locations and services

VIII. RESULT

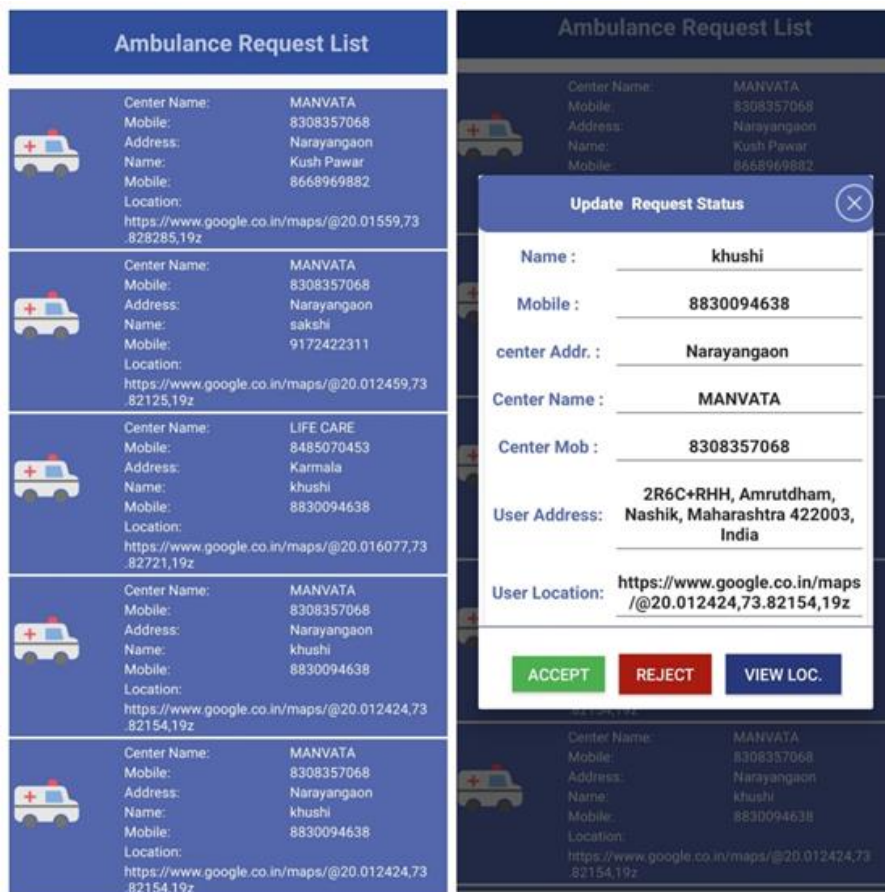
1.It is admin application page for updating the hospital list which are available on user page. (admin)



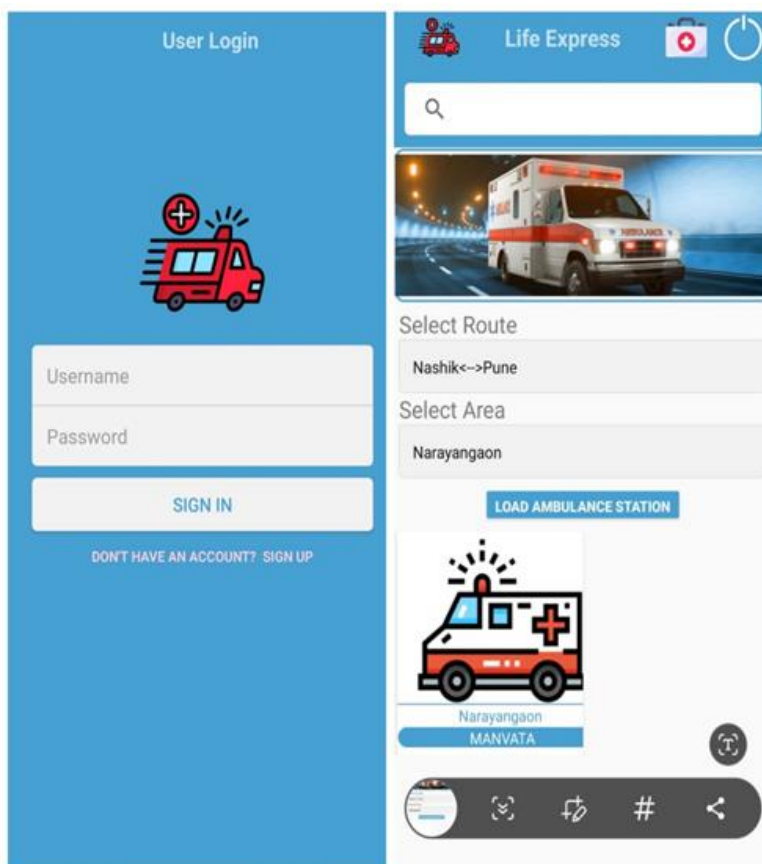
2. It is the route which is updated by the admin so user can find the available ambulance within route. (admin)



3. Here admin accept or reject the users request or at the same time admin can view the location(admin).



4. Once user have opened the application, login is done, user will select the route. (user)



5. User have selected the ambulance center then check for details and procced with order.

Ambulance Center Details	
Call	View On Map
Service Center Name	Service Center Name
MANV	MANV
Service Center Address	Service Center Address
Narayangaon	Narayangaon
Service Center MOBILE	Service Center MOBILE
8308357068	8308357068
Service Center Open Time	Service Center Open Time
8:19	8:19
Service Center Close Time	Service Center Close Time
	20:30
	Service Center Off Day
	sunday
	Place Order

IX. CONCLUSION

The Ambulance Management System represents a transformative solution leveraging modern technology to enhance emergency medical services. By providing a seamless interface for users, efficient allocation of ambulance resources through real-time tracking, and collaborative efforts with ambulance owners, the system significantly improves the accessibility and responsiveness of ambulance services. The integration of features such as dynamic route optimization, live ambulance tracking, and communication between users, administrators, and ambulance drivers ensures a swift and coordinated response during critical situations. Ultimately, the Ambulance Management System stands as a vital tool in saving lives, reducing response times, and fostering a more connected and responsive healthcare ecosystem.

X. REFERENCE

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