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THE AMBULANCE BOOKING SYSTEM

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***Abstract*: In todays traffic world, Ambulance plays a major role when an accident occurs on the road network and the need arises to save valuable human life. Transportation of a patient to an emergency hospital seems quite simple but in actuality, it is quite difficult and gets more difficult during peak hours. In our Ambulance Booking System, people can easily book an ambulance. There are three major modules namely User, Ambulance, and Hospital. Users can register and log in using credentials. Users can edit their profile and change their password in an emergency. Any Upcoming Ambulance Booking details if anyone wants to Book an Ambulance or if there is an emergency. For booking an ambulance users have to select ambulance size, pick-up point & hospital, and date & time. In an emergency will automatically book the nearest ambulance & hospital. Users will get a list of All the bookings of ambulances. The user must register and log in using a username and password. The ambulance driver and Hospital has to register and then login in using a username and password. The front-end involves Html, CSS, and JavaScript and the back-end involves Python. The framework used is Django and the database is MySQL.**

Keywords:- Ambulance, Data, User, Booking, Driver, login, Testing.

I. INTRODUCTION

Ambulances have always been at the forefront of emergency medical services. While the earlier versions of these vehicles were meagrely designed to comfortably take the patient to the nearest hospital, the modern day renditions are far better.

Today, it isn't surprising to see ambulances in various shapes and sizes, offering a wide array of facilities such as intravenous drips, oxygen, heart defibrillators, splints drugs and much more. In fact, other than various pre-medical emergency facilities, the contemporary ambulances are also installed with radios, location tracking technology and much more.

However, when it comes to ensuring that every patient's emergency medical needs are catered to, not all seems well. There are certain drawbacks that are inherent to the current infrastructure. Let us discuss the same, and see, whether if the same can be resolved using a new-age mobile application dedicated to ambulances. Ambulance plays a very crucial role when an accident occurs on the road network or in case of any medical emergency and the need arises to save a human life.

Manual booking of an ambulance at times of emergency can take away precious time as it is a time-consuming process. Furthermore, the delay caused due to the heavy traffic congestion in between the pickup spot and the hospital facility may increase the risk of death for the victim. The Ambulance Booking System is a web-based application that allows users to request ambulance services for emergencies. This system aims to improve the response time for ambulance services and optimize the allocation of ambulances based on the location and availability of the ambulances and the demand for the service

II. PROBLEM STATEMENT

In our Ambulance Booking System, people can easily book an ambulance. There are three major modules namely User, Ambulance, and Hospital. Users can register and log in using credentials. Users can edit their profile andchange their

password in an emergency. For booking an ambulance users have to select ambulance size, pick-up point & hospital, and date & time. In an emergency will automatically book the nearest ambulance & hospital. Users will get a list of All the bookings of ambulances. The user must register and log in using a username and password. The front-end involves Html, CSS, and JavaScript and the back-end involves Python. The framework used is Django and the database is MySQL.

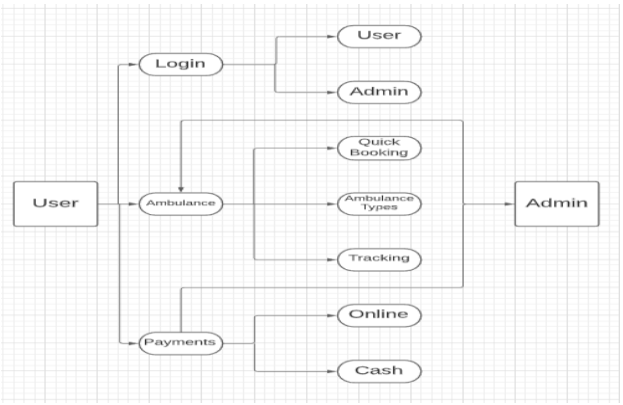

Fig: Use case Diagram

III. LITERATURE REVIEW

The Ambulance Booking System is an essential tool that enables users to efficiently book ambulances during emergencies or for scheduled medical transportation. focusing on the three major modules: User, Ambulance, and Hospital. It explores various aspects such as user registration, profile management, booking processes, emergency handling, technology stack, and framework choices.

User Registration and Profile Management:
User registration and profile management are crucial components of an ambulance booking system. Prior research emphasizes the importance of a secure and user-friendly registration process, where users can create an account using their credentials. The system should allow users to edit their profiles, change passwords easily, and maintain their personal information up-to-date. Studies suggest implementing security measures like two-factor authentication to enhance user account security.

Booking Process and Emergency Handling:
Efficient booking processes are vital in ambulance booking systems. Users should be able to select ambulance size, provide pick-up points, choose hospitals, and specify date and time for the ambulance service. In emergency situations, the system should automatically assign the nearest available ambulance and hospital to ensure prompt response and care. Research emphasizes the significance of incorporating real-time tracking features, enabling users and system administrators to monitor the ambulance's location and estimated time of arrival.

Front-end and Back-end Technologies:
The front-end of the ambulance booking system typically involves technologies such as HTML, CSS, and JavaScript. These technologies are used to develop a user-friendly and responsive user interface. The back-end of the system is developed using Python, with the Django framework being a popular choice for its robustness and scalability. Integration with a MySQL database allows efficient storage and retrieval of data

IV. REQUIRED TOOLS

- Visual Studio Code
- Sqlite3
- Python
- Django
- Html, css, javascript

V. METHODOLOGY

1. Requirement Analysis:
•Conduct interviews and discussions with stakeholders, including users, ambulance drivers, and hospital staff, to understand their requirements and expectations..
•Identify the key features and functionalities needed in the system, such as user registration, profile management, booking processes, emergency handling, and tracking capabilities and Document the requirements.
2. System Design:
•Design the system architecture, including the three major modules: User, Ambulance, and Hospital and define the database structure, considering the entities and relationships between them.
•Design the user interface, ensuring it is intuitive, user-friendly, and responsive,create wireframes or mockups to visualize the system's layout and flow.
3. Technology Selection:
• Select the appropriate technologies for front-end development, such as HTML, CSS, and JavaScript,choose the Django framework for the back-end development, leveraging the advantages of its robustness, scalability, and built-in security features.
4. Development:
• Set up the development environment, including the installation of necessary software and frameworks.Implement the user registration and login functionality, allowing users, ambulance drivers, and hospital staff to create accounts and authenticate themselves,develop the profile management feature, enabling users to edit their profiles, change passwords, and update their personal information.
5.Testing :

•Perform comprehensive testing to ensure the system functions as intended and conduct unit testing, integration testing, and system testing to identify and fix any bugs or issues.
•Validate the system against the initial requirements, ensuring all features are implemented correctly and perform usability testing to evaluate the user experience and make necessary improvements.

VI. EXPERIMENT RESULTS

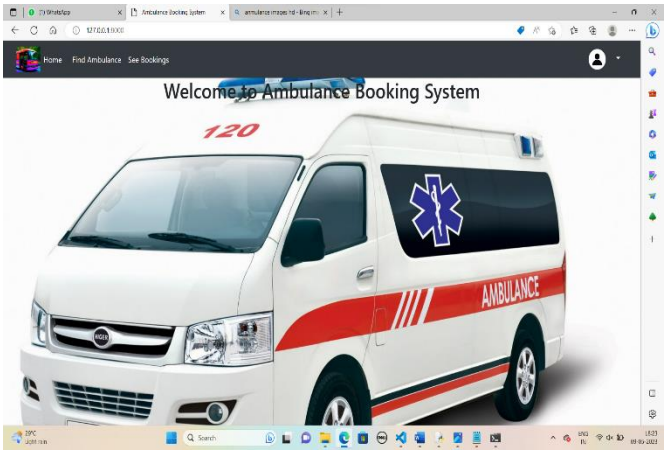

Fig: Home page

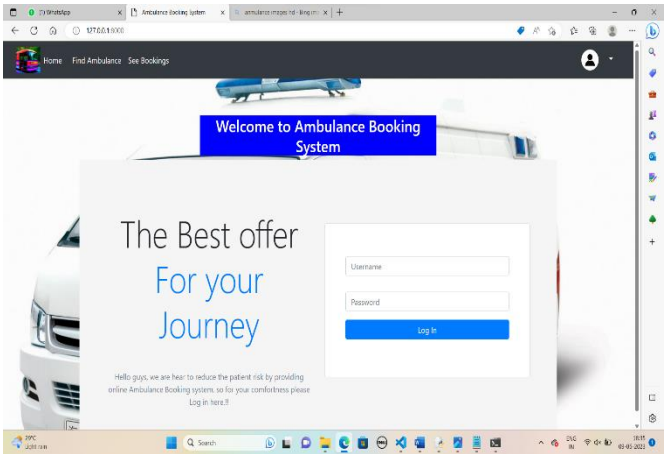

Fig: Login Page

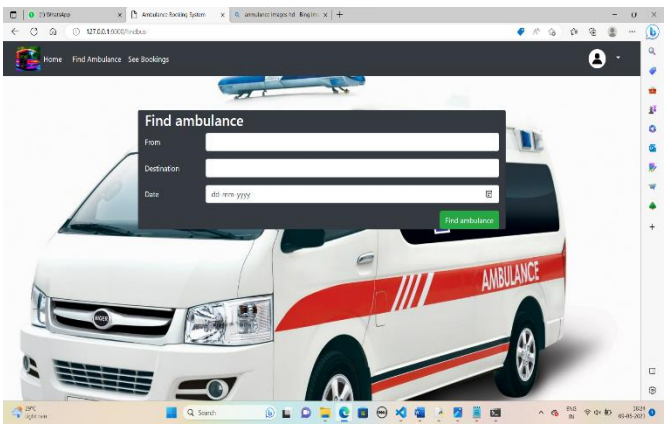

Fig: Find Ambulance page

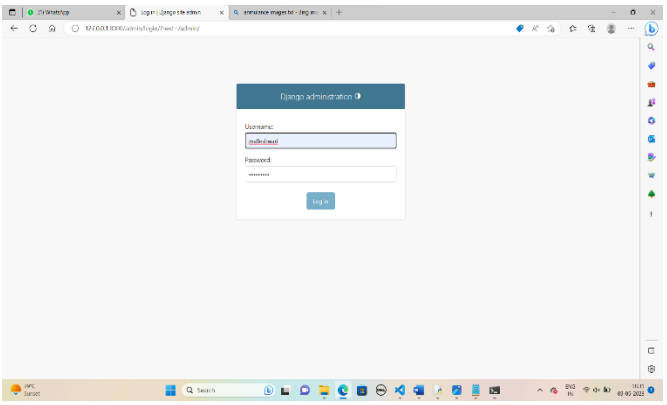

Fig: User login dayabase demonstration

VII. MERITS OF PROPOSED SYSTEM

Overall, the proposed Ambulance Booking System offers several merits such as ease of use, automated emergency handling, real-time tracking, enhanced security, comprehensive booking history, and a reliable system architecture. These features contribute to an efficient and user-friendly experience for both users and stakeholders involved in ambulance services...

Easy and Convenient Booking Process: The proposed system provides a user-friendly interface that allows users to easily book ambulances.Users can select ambulance size, pick-up points, hospitals, and specify date and time preferences.The system streamlines the booking process, eliminating the need for manual coordination and reducing response time.

User Profile Management:The system allows users to register, create profiles, and manage their personal information.Users can easily edit their profiles, change passwords, and update their details as needed.This feature provides a personalized experience and ensures that user information is up-to-date

Enhanced Security:The system incorporates secure user authentication mechanisms, such as username and password combinations.Additional security measures like two-factor authentication can be implemented to further protect user accounts.User data is stored securely in the MySQL database, ensuring confidentiality and integrity.

Efficient System Architecture:The system is developed using the Django framework, known for its robustness and scalability.The choice of technologies, including HTML, CSS, JavaScript, Python, Django, and MySQL, ensures a solid foundation for development.The system architecture can handle a large volume of users and data, ensuring smooth performance even during peak periods.

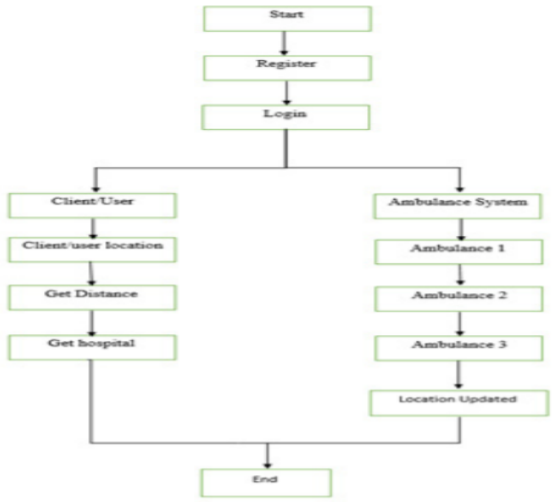

Fig:Flowchart of proposed system

VIII. ARCHITECTURE DIAGRAM FOR PROPOSED METHOD

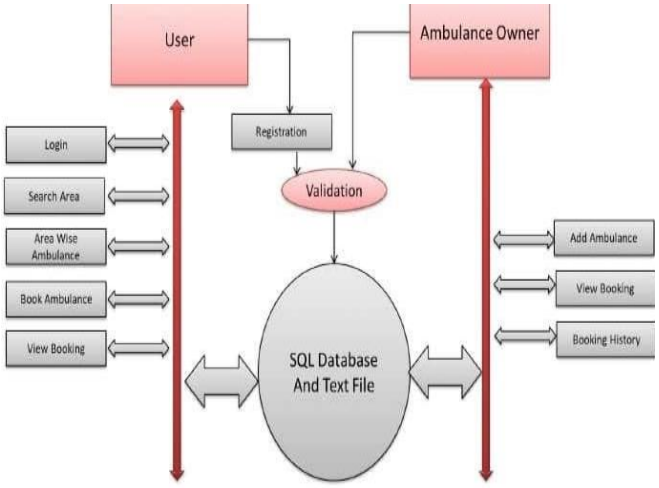

Fig: Architecture

IX. CONCLUSION:

Ambulance company scheme can also have different functions etc and does provide as much economic advantages complete subscribers. of significant increase showcases such as trying to track after all emergency vehicle energetic . it should aid that whole account manager to trace a emergency responder. the said helps the customer but instead emergency responder complete start making extra convenience. humans future employment would be to reform the productivity through to include techniques yeah iiot (iot) of between make it bigger as well as interconnect it on all close health facilities and so that whenever a customer support is just not accessible through one, some other health centre that provide that kind of support can just be recommended instantaneously together with it's own spacing, start date as well as the accessibility yeah ambulance crews, practitioners so on and so forth to take care of that whole extraordinary circumstance.

X. Future Enhancement:

In the future, an ambulance booking system can be further enhanced with several features and advancements. Here are some potential future enhancements for an ambulance booking system are Real-Time Tracking,Smart Routing,Data Analytics,Notifications and Alerts,Reporting and Analytics Dashboard These enhancements aim to improve the efficiency, transparency, and user experience of the ambulance booking system using Python.

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