

Health care : All in one app

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Abstract- Our Hospital Management Application not only integrates an AI-driven chat bot for patient engagement and support but also facilitates medical supplies shopping. This comprehensive solution caters to diverse needs within healthcare management. Patients can seamlessly access vital medical information while also conveniently purchasing medications and supplies through the application. This innovative addition further enhances patient empowerment by offering a one-stop platform for both information and procurement. With user-centric design and cutting-edge technology, our application sets new standards for patient-centered care and proactive healthcare management. Join us in embracing this pioneering AI-backed medical assistance, which combines convenience, accessibility and empowerment for patients worldwide.

Keywords – Healthcare, AI Chat bot, User- Centric Design, Proactive Healthcare Management, Medical Supplies online Shopping.

I. INTRODUCTION

Health Sphere stands as a beacon of innovation in the realm of healthcare technology, representing a comprehensive and user-centric approach to addressing contemporary healthcare challenges. This mobile application redefines the boundaries of healthcare accessibility and management, offering a holistic platform that amalgamates essential functionalities within a single interface. By integrating features such as hospital and doctor discovery, AI-driven consultations, real-time blood availability tracking, and streamlined data management, Health Sphere aims to bridge the gap between healthcare stakeholders, empowering users with informed decision-making and enhancing overall healthcare experiences. In an era marked by the convergence of technology and healthcare emerges as a testament to the transformative power of mobile applications. Its user-centric design, coupled with an array of cutting-edge features, positions it at the vanguard of the mobile health (mHealth) revolution, promising to revolutionize healthcare delivery, improve accessibility, and elevate the quality of care for users across diverse demographics

II. PROPOSED ALGORITHM

The contemporary healthcare landscape grapples with multifaceted challenges that impede the seamless delivery of efficient, accessible, and patient-centric care. Traditional healthcare management systems face inherent inefficiencies, leading to fragmented patient-doctor interactions, scheduling complexities,

administrative burdens, and inadequate emergency response protocols, thereby compromising the overall quality of healthcare services.

Key issues identified within existing healthcare infrastructures include:

1. **Fragmented Patient-Doctor Interactions:** Patients often encounter barriers in accessing and connecting with healthcare providers, leading to disjointed healthcare experiences and delayed treatments.
2. **Complex Appointment Scheduling:** Cumbersome appointment booking systems result in inefficiencies, leading to scheduling conflicts, longer waiting times, and decreased patient satisfaction.
3. **Administrative Overheads:** Healthcare administrators grapple with intricate operational tasks, such as managing doctor schedules, patient records, and resource allocation, contributing to administrative inefficiencies and increased workloads.
4. **Lack of Real-time Information:** The absence of real-time updates on critical resources, notably blood availability during emergencies, hampers prompt and effective responses, potentially endangering patient lives. The prevailing healthcare management systems fall short in addressing these crucial pain points, failing to provide a cohesive, user- friendly platform that caters to the diverse needs of patients, doctors, and administrators. The overarching problem at hand is the absence of an integrated, user- centric healthcare management solution that harmonizes interactions between patients, doctors, and administrators, while also optimizing operational workflows and facilitating swift emergency responses. This lacuna underscores the imperative need for a comprehensive Hospital Management Application (HMA) that revolutionizes the healthcare ecosystem, prioritizing accessibility, efficiency, and patient-centered care.

III . USER-CENTRIC DESIGN AND TECHNOLOGY

Maintain a user-centric design approach, focusing on intuitive navigation and seamless interaction to enhance the overall user experience.

Utilize cutting-edge technology, including AI algorithms and machine learning, to personalize recommendations and anticipate patient needs.

Continuously iterate and improve the application based on user feedback and emerging technological advancements, ensuring it remains at the forefront of patient- centered care.

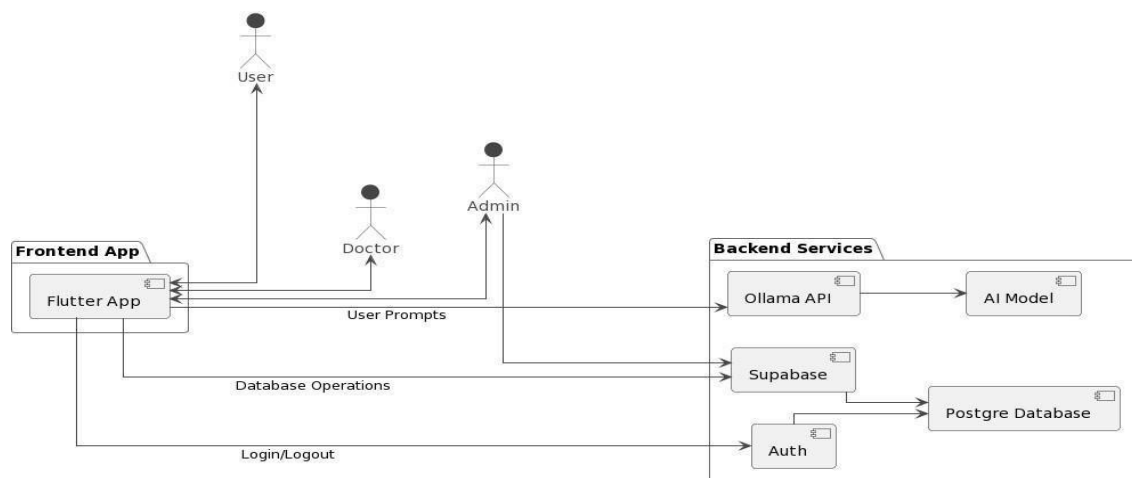


Figure 1. User-Centric Design and Technology block diagram

IV. EXPERIMENT AND RESULT

In addition to its core functionalities, Health care also integrates an online medical shopping feature, further enhancing its comprehensive healthcare offerings. Users can conveniently access this feature through the application, allowing them to procure medical supplies and products with ease.

Through a streamlined search function, users can quickly locate desired medical items based on specific categories, brands, or requirements. The integration of geo location services enables users to find nearby medical stores or pharmacies, ensuring convenience and accessibility in acquiring necessary supplies.

Furthermore, Health care employs a secure and user-friendly checkout process, incorporating encryption protocols to safeguard sensitive information during transactions. Users can confidently purchase medical supplies within the application, enjoying a seamless and secure shopping experience.

Overall, the integration of online medical shopping within Health Sphere complements its existing functionalities, providing users with a comprehensive platform for all their healthcare needs, from accessing medical information to procuring essential supplies.

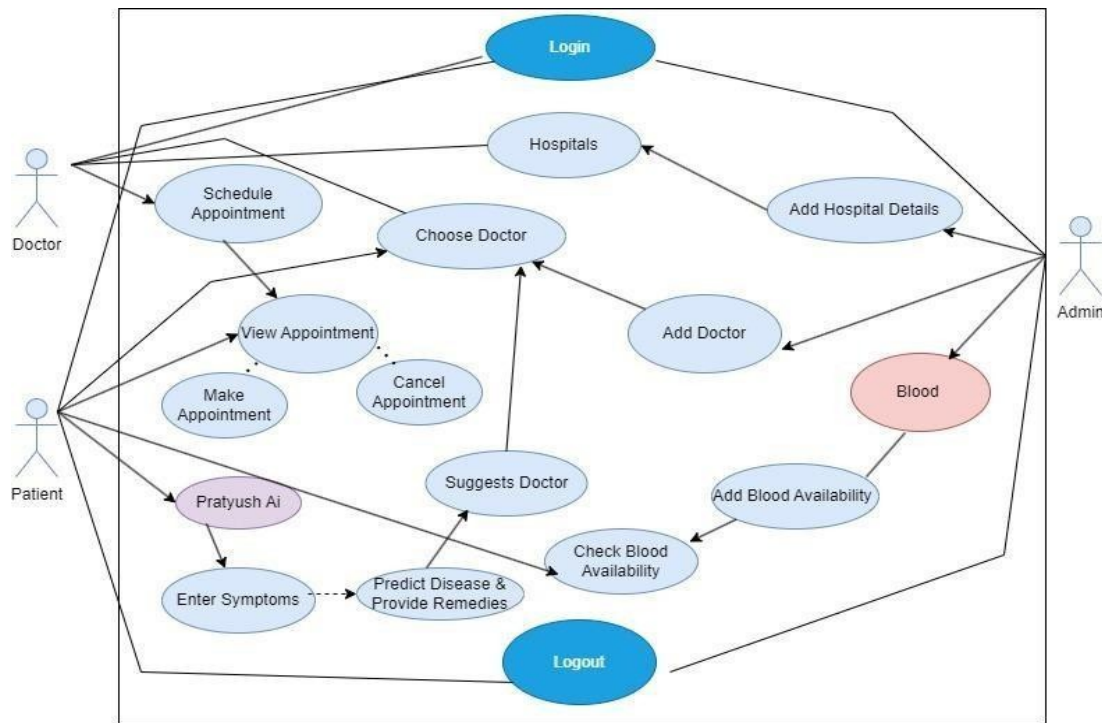


Figure 1. System Design & Implementation block diagram

V. PROPOSED SYSTEM:

Expanding upon our existing Hospital Management Application, we aim to further enrich the patient experience and streamline healthcare management. Our proposed system builds upon the foundation of our AI-driven chat bot and medical supplies shopping feature, extending its functionality to include online medical shopping, appointment scheduling with specialists, laboratories, and hospitals, as well as geo location services for easily locating healthcare facilities.

2. ONLINE MEDICAL SHOPPING INTEGRATION:

Enhance the medical supplies shopping feature to encompass a wide range of medical products, including medications, equipment, and healthcare accessories.

Collaborate with trusted suppliers to ensure the availability of quality products, offering patients a diverse selection to meet their needs.

Implement secure payment gateways and a seamless checkout process to provide a convenient and secure shopping experience.

3. APPOINTMENT SCHEDULING FOR SPECIALISTS, LABORATORIES, AND HOSPITALS:

Introduce a comprehensive appointment scheduling system within the application, enabling patients to book appointments with specialized healthcare providers, diagnostic laboratories, and hospitals.

Utilize a user-friendly interface to display available appointment slots based on patient preferences and provider availability. Incorporate automated appointment reminders to minimize no-shows and optimize scheduling efficiency.

4. GEO LOCATION SERVICES FOR HOSPITAL LOCATION:

Integrate geo location functionality into the application to assist patients in locating nearby hospitals, clinics, pharmacies, and other healthcare facilities.

Utilize mapping APIs to provide accurate directions and real-time traffic updates, ensuring patients can easily navigate to their desired destinations.

Enhance the user experience by displaying additional information about each facility, such as contact details, services offered, and user ratings.

VI. KEY FEATURES:

Hospital & Doctor Listings: Comprehensive listings of nearby hospitals and doctors with detailed profiles, specialties, and timings for user convenience.

Online shopping medicans: Health Sphere's online medical shopping feature revolutionizes the way users procure medications, offering convenience, accessibility, and reliability within the healthcare app.

Postgre SQL Database: Integration with a Postgre SQL database to store and manage user information, hospital details, doctor profiles, and appointment data.

Fine-Tuned AI Model (LLM, Mistral): Implementation of a fine-tuned AI model specifically tailored to health-related queries, enhancing user engagement and support.

Flutter-Based Application: Development of a user-friendly, cross-platform application using the Flutter framework, ensuring compatibility across multiple devices.

User Interaction Analytics: Collection and analysis of user engagement metrics to understand user behavior, preferences, and usage patterns within the app.

Appointment Scheduling: Capability for users to view available doctor timings and schedule appointments conveniently within the app.

VII. CONCLUSION

In conclusion, the HealthSphere project has made significant contributions to enhancing emergency medical services through the development of a user-friendly mobile application. By successfully integrating various essential services such as blood availability, doctor information, and Artificial Intelligence medical chatbot services, the project has demonstrated the potential of technology to improve healthcare accessibility and positively impact the industry. The project serves as a valuable model for similar applications in the healthcare sector, showcasing the benefits of collaboration among multiple stakeholders including hospitals, blood banks, and other service providers. This collaboration ensures that users receive accurate and reliable information when they require emergency medical assistance. It emphasizes the importance of effective emergency medical services in society and highlights the need for efficient systems that enable prompt access during critical situations. Moreover, the HealthSphere project has paved the way for future advancements and opportunities in the field of emergency medical services. The continuous development and refinement of the mobile application, coupled with feedback from users and stakeholders, will enable further improvements and enhancements in the future. By leveraging digital technology and harnessing the power of web applications, the project has opened up possibilities for innovative solutions that can revolutionize emergency healthcare delivery.

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