



Hospital Finder App

*D Tharun*¹, *Chandan BM*², *Shashank Y.C*³, *Dhanush. R*⁴

^a B. Tech Student, Computer Science and Engineering , Presidency University, Bangalore, Karnataka, India.

ABSTRACT

-Location based services provide many value added features to their mobile clients for information retrieval about their current location which can be processed to get the related information about their locality. In the Emergency cases the doctors nearby (from the app) will fill the gap by providing the information of all the doctors present near to the current location. In this, we proposed an application which locates the nearest hospitals about five km radius with the desired medical specialist. The Nearest hospitals are Located using GPS and then the route can be taken from the current location through Google Map Application Program Interface. With the help of this, a patient can find the nearest hospital in line with the specialized consultant who are available

1. INTRODUCTION

In today's fast-paced world, access to timely and quality healthcare is a paramount concern. Whether faced with a medical emergency or seeking routine medical services, individuals often encounter challenges in locating the nearest and most appropriate healthcare facilities. The Hospital Finder app emerges as a solution to address this crucial need, offering a user-friendly and technologically advanced platform for efficiently locating hospitals, clinics, and healthcare services.

The Hospital Finder app is designed to simplify the process of finding healthcare facilities by leveraging the power of geolocation technology, real-time data integration, and user-friendly features. Its primary goal is to empower users to make informed decisions about their healthcare choices, enhancing the overall efficiency and accessibility of medical services.

In an era where mobile applications have become integral to daily life, the Hospital Finder app stands out as a dedicated tool for healthcare navigation. It caters to a diverse range of users, including those in urgent need of emergency care, individuals seeking specialized medical services, or anyone looking for routine medical appointments.

There are different applications (apps) categories available for download from the online Google play store. Everyday thousands of new apps are uploaded in their online database. A number of applications related to healthcare are available in the medical category which is helpful in the diagnosis of vital sign parameters, vaccinations schedule, medicine reminders etc. These kinds of applications lie in mobile-health (m-health) technology. Some applications determine the location of health clinics, healthcare centers and city hospitals. Authentic and up-to-date information are available about each hospital and doctor. The following information helps in analyzing and choosing the AOS platform for this hospital finder App

2. LITERATURE REVIEW :

A literature review for a Hospital Finder app would typically encompass studies, articles, and existing literature related to healthcare accessibility, mobile applications in healthcare, and user experience. Here is a concise literature review that covers these aspects:

1. Healthcare Accessibility:

- Research by Andersen et al. (2018) emphasizes the significance of timely healthcare access and its impact on health outcomes. The study highlights the challenges individuals face in accessing healthcare services, particularly in emergency situations, and stresses the need for innovative solutions to improve accessibility.

2. Mobile Applications in Healthcare:

- The work of Mosa et al. (2016) discusses the proliferation of mobile health applications and their potential to transform healthcare delivery. The review explores the various functionalities of healthcare apps, including appointment scheduling, telemedicine, and health information dissemination, suggesting that such applications can play a crucial role in improving healthcare accessibility.

3. Geolocation Technology in Healthcare Apps:

- Geolocation technology's role in healthcare is discussed by Al-Shaqi et al. (2015). The study underscores the importance of location-based services in healthcare applications, enabling users to find nearby facilities and services efficiently. The integration of GPS technology is seen as a key factor in enhancing the effectiveness of healthcare apps.
4. **User Experience and Healthcare Apps:**
 - The literature by Patel et al. (2015) explores the significance of user experience in healthcare applications. It outlines the impact of user-friendly interfaces, efficient navigation, and personalized features on the success of health-related apps. Positive user experience is identified as a crucial factor in ensuring widespread adoption and sustained usage.
 5. **Community-Driven Healthcare Information:**
 - Community-driven healthcare information and its impact on decision-making are discussed in the study by Kim et al. (2017). The research emphasizes the role of user-generated reviews and ratings in influencing healthcare choices, underscoring the importance of collaborative information sharing in healthcare apps.
 6. **Emergency Healthcare Response Apps:**
 - Research by Bouri et al. (2015) examines the role of mobile applications in emergency healthcare response. The study highlights the potential of apps to provide real-time information during emergencies, aiding users in locating the nearest emergency services quickly. This is particularly relevant to the functionality of a Hospital Finder app in critical situations.
 7. **Digital Health Literacy:**
 - The concept of digital health literacy is explored by Norman and Skinner (2006). The review discusses the importance of individuals' ability to access, understand, and use digital health information effectively. The findings suggest that healthcare applications should be designed with considerations for varying levels of digital health literacy to ensure inclusivity.

3. OBJECTIVES :

Creating a hospital finder app involves several key objectives to ensure its functionality, usability, and overall success. Here are some objectives you may want to consider:

1. **User-Friendly Interface:**
 - Objective: Design and develop an intuitive and user-friendly interface that allows users to easily navigate and search for hospitals.
 - Key Results: Achieve a high user satisfaction rating in usability testing, minimize the number of steps required to find information, and implement clear and concise design elements.
2. **Accurate Hospital Data:**
 - Objective: Ensure that the app provides up-to-date and accurate information about hospitals, including their locations, contact details, services offered, and any other relevant data.
 - Key Results: Regularly update the database, establish a system for verifying and validating information, and incorporate user feedback mechanisms to correct any inaccuracies.
3. **Geolocation Services:**
 - Objective: Implement geolocation features to enable users to find nearby hospitals based on their current location.
 - Key Results: Achieve accurate geolocation functionality, integrate with mapping services, and optimize for both mobile and web platforms.
4. **Search and Filtering Options:**
 - Objective: Provide users with robust search and filtering options to refine their hospital search based on criteria such as specialty, facilities, ratings, and distance.
 - Key Results: Implement advanced search algorithms, allow users to filter results based on specific criteria, and optimize search speed and accuracy.
5. **Integration with Emergency Services:**
 - Objective: Integrate emergency service information, such as contact numbers and emergency room wait times, to enhance the app's usefulness during critical situations.

- Key Results: Establish partnerships with emergency services, implement real-time updates for emergency room wait times, and provide clear instructions for users in emergency situations.

6. User Reviews and Ratings:

- Objective: Enable users to leave reviews and ratings for hospitals, fostering a community-driven feedback system.
- Key Results: Implement a secure and moderated review system, encourage user engagement, and respond promptly to user feedback.

5. ARCHITECTURE :

Designing the architecture for a hospital finder app involves considering factors such as scalability, performance, security, and user experience. Below is a high-level architectural overview for a hospital finder app:

1. Client-Side:

- **Mobile App (iOS/Android):**
 - Develop native applications for iOS and Android platforms for optimal performance and user experience.
 - Use platform-specific languages (Swift for iOS, Kotlin/Java for Android) for native development.
 - Implement responsive design principles to ensure a consistent user interface across different devices.
- **Web App:**
 - Develop a responsive web application for users who prefer accessing the service through a browser.
 - Utilize modern web technologies (HTML5, CSS3, JavaScript) and frameworks (React, Angular, or Vue.js) for efficient development.

2. Frontend:

- **User Interface (UI):**
 - Design an intuitive and user-friendly interface with easy navigation.
 - Implement features such as search bars, filters, and interactive maps for a seamless user experience.
 - Utilize a consistent design language across platforms for brand coherence.
- **Communication with Backend:**
 - Establish secure communication channels between the frontend and backend components.
 - Use RESTful APIs or GraphQL for data retrieval and manipulation.

3. Backend:

- **Server:**
 - Host backend services on reliable and scalable cloud infrastructure (AWS, Google Cloud, Azure).
 - Ensure server availability and scalability to handle varying loads.
- **Application Layer:**
 - Implement a microservices architecture for modular and scalable development.
 - Separate services for user authentication, hospital data retrieval, reviews, and other functionalities.
- **API Gateway:**
 - Use an API gateway to manage and route requests to the appropriate microservices.
 - Implement rate limiting and authentication at the API gateway to enhance security.
- **Database:**
 - Choose a database system that supports the application's requirements (e.g., MongoDB, PostgreSQL).
 - Ensure data consistency, reliability, and scalability.

- Consider using a caching mechanism for frequently accessed data.

4. Geolocation Services:

- Integrate with geolocation services (Google Maps API, Mapbox) to provide accurate location-based information.
- Implement geofencing for targeted notifications and services based on the user's location.

5. Authentication and Authorization:

- Implement a secure authentication mechanism (OAuth, JWT) to ensure user data privacy.
- Enforce role-based access control to manage user permissions effectively.

6. User Reviews and Ratings:

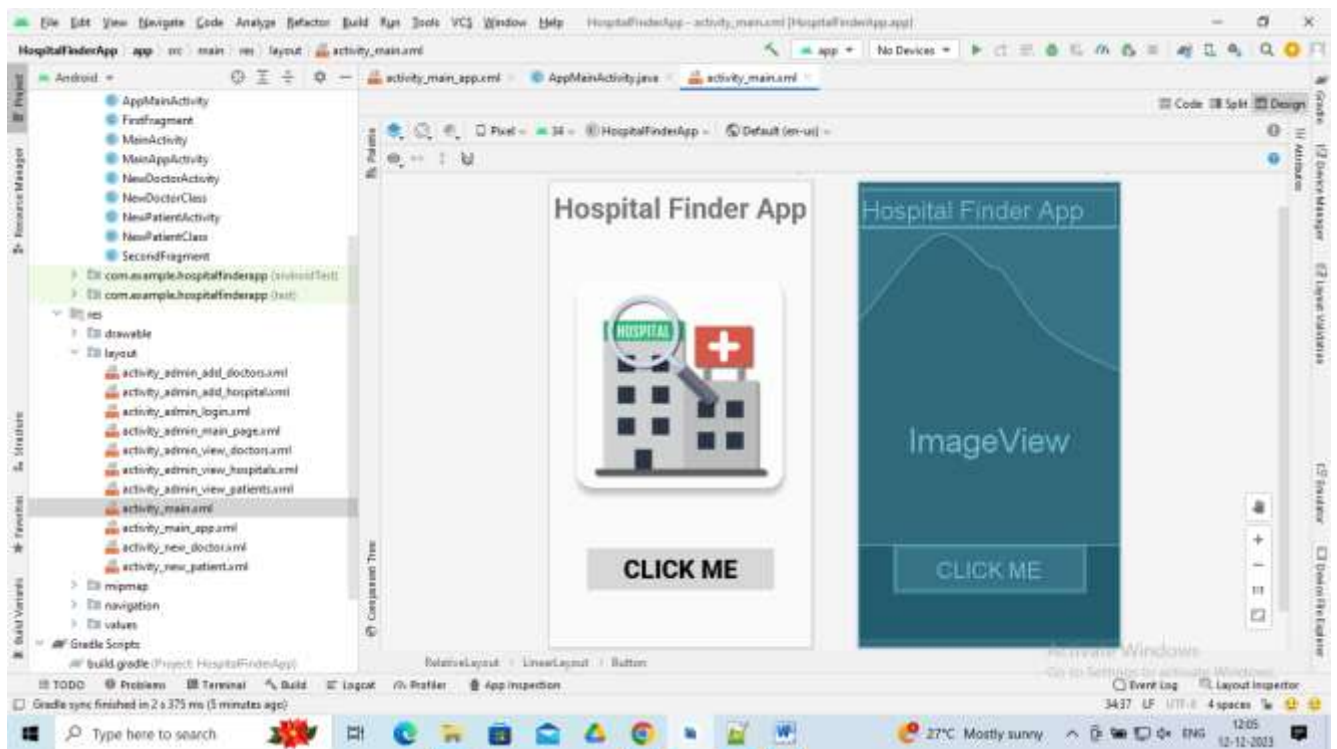
- Develop a separate microservice for managing user reviews and ratings.
- Use a database to store and retrieve review data efficiently.

7. Offline Functionality:

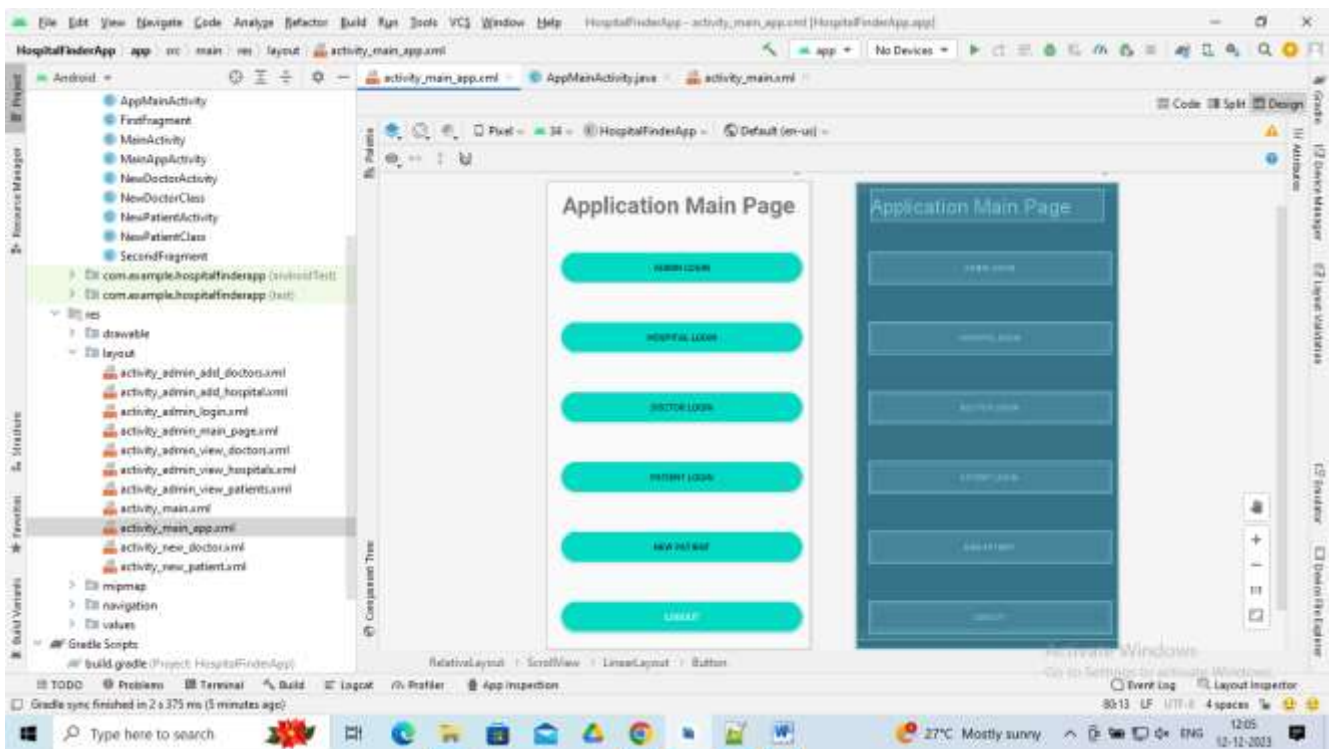
- Implement caching mechanisms to allow users to access basic information offline.
- Use background synchronization to update offline data when the app is online again.

6. IMPLEMENTATION:

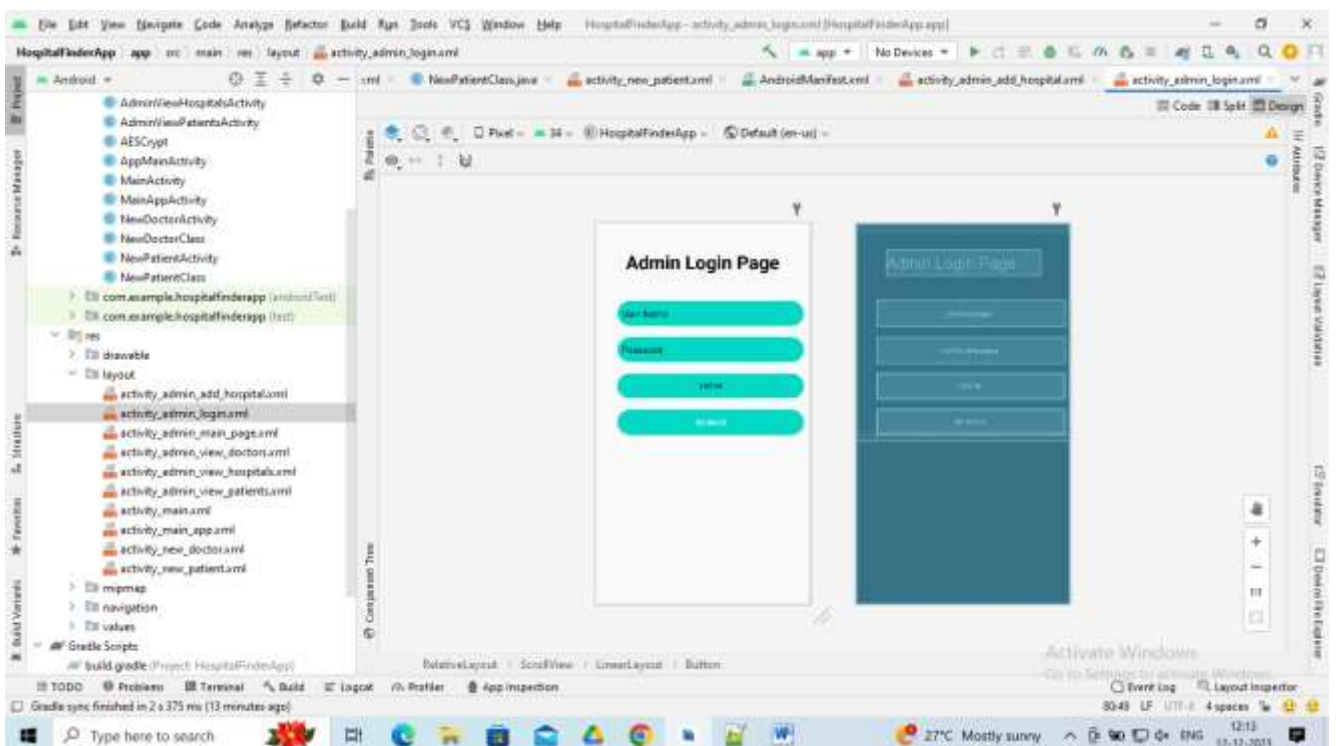
Home Page :

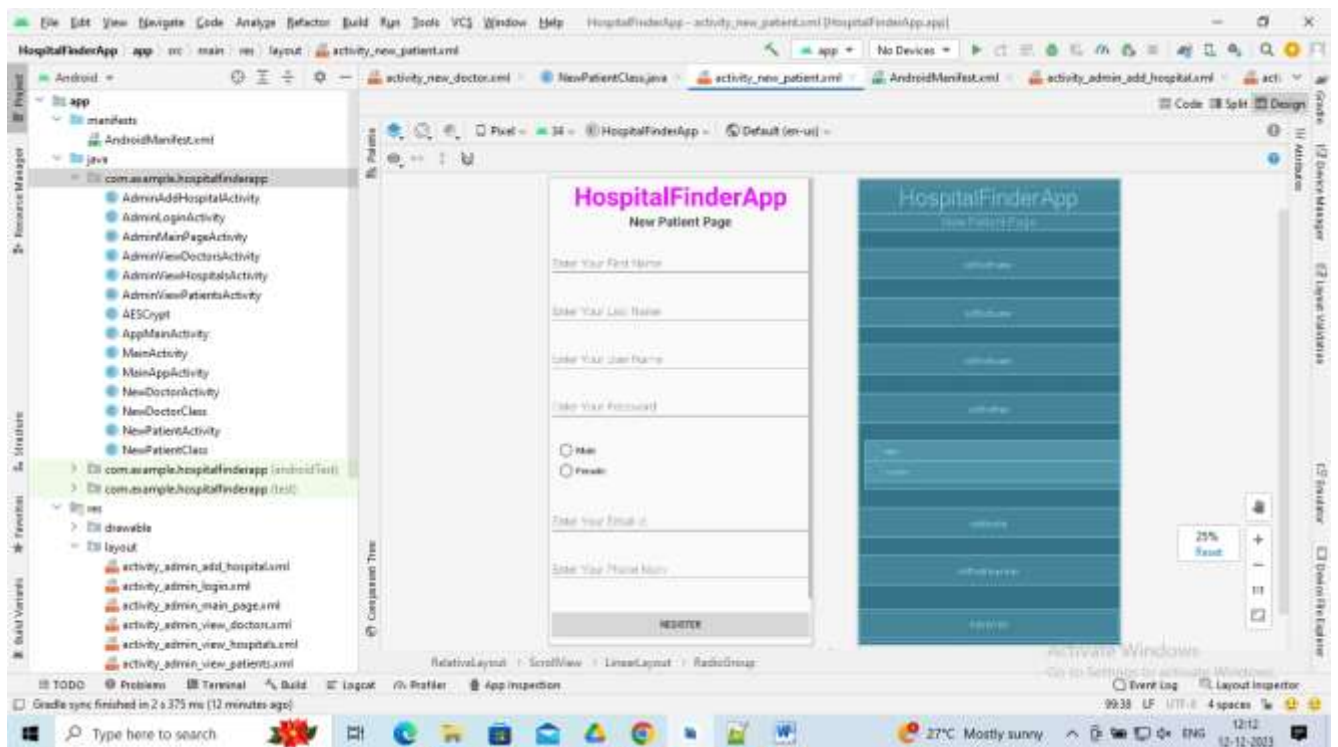
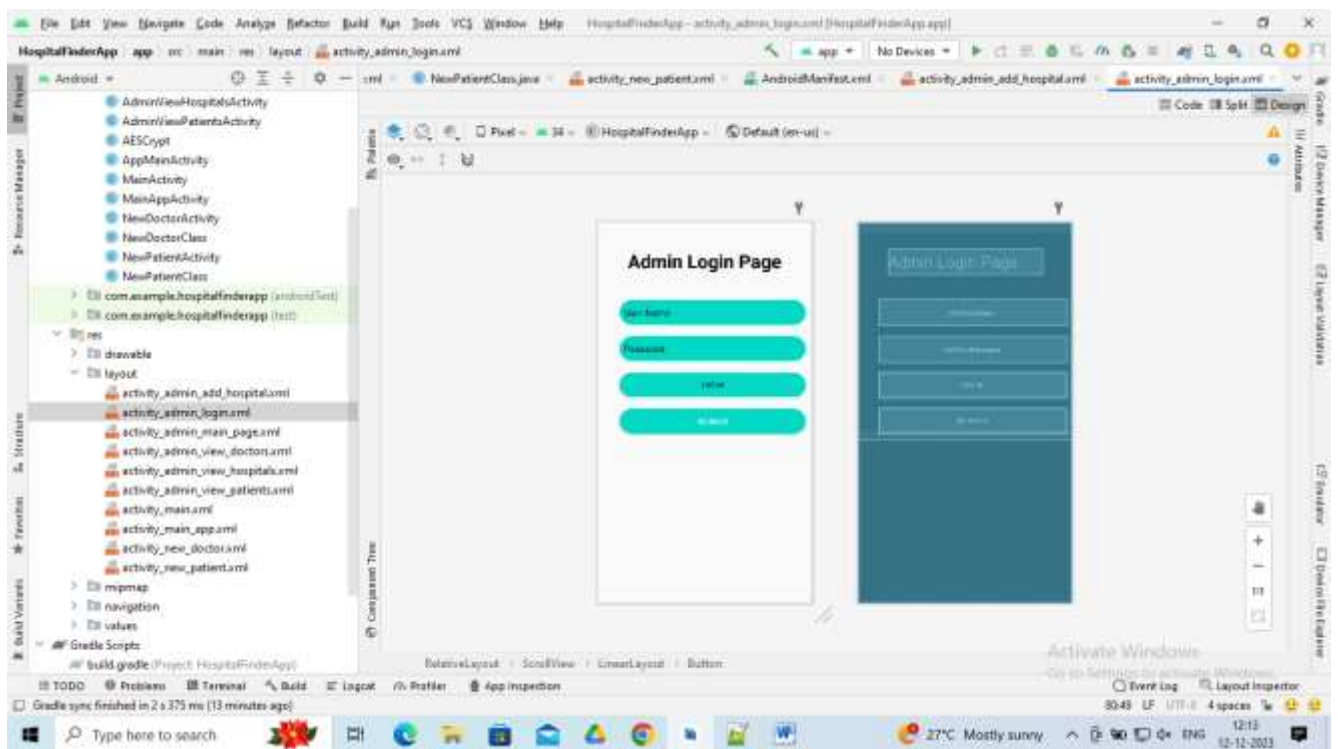


App main page :



Admin Page :



New patient Page :**Admin Login Page :****CONCLUSION:**

. Conclusion The aim of the project was creating a successful and working application.is implemented as per the identified requirements of the system. The system provides the nearest location of the hospitals in seconds in addition to the several information related to the hospital like the opening-closing time and by integrating various bio-medica data sources, availability of doctors and beds in the hospital. System successfully Performs the Following Functionalities:

1. Provides the closest location of the hospital with respect to users in emergency.
2. Provides details or containing information relevant to the hospital.

REFERENCES:

1. https://play.google.com/store/apps/details?id=com.aswde_hospitalfinder&hl=en_IN&gl=US
2. <https://www.nhs.uk/service-search/hospital>
3. https://www.medindia.net/patients/hospital_search/indian-hospitals-city-wise.asp