Hospital Finder App - An Android based Application for Determining a Specialized Hospital Nearest to patient's location

C Akshaya Deepthi[1], G Penusha[1], Lakshmi Nandana[1], Noor Afsha N[1], Vineetha B[2]

[1]BTech, Presidency University, Bangalore, Karnataka, India
[5]Assistant Professor, Presidency University, Bangalore, Karnataka, India

A R T I C L E I N F O

A B S T R A C T

Healthcare associations worldwide constantly grounded on specific medical requirements, from cardiology to pediatrics. Real-time data operating systems(AOS) bias like smartphones and tablet PCs. These bias are used for colorful tasks similar as word processing, gaming, instant messaging, and downloading web operations. The adding relinquishment of Android phones has enabled the relief of certified software development technologies and PC operations. multitudinous healthcare operations have been developed for Android smartphones, aiding cases and their caregivers in saving time and plutocrat. One similar operation finds the closest sanitarium within a five- kilometer compass of a medical specialty. The Global Positioning System(GPS) also plays a part in this exploration design. In times of medical extremities, seeking the right healthcare can be inviting and time-critical. With a multitude of hospitals and technical installations available, navigating the healthcare geography can be confusing and stressful. This is where the Hospital Finder web app comes in as a lamp of stopgap, furnishing immediate access to pivotal healthcare information and simplifying the process of chancing the optimal medical installations for your requirements. Value Proposition position- grounded hunt influence geolocation or homemade address input to pinpoint near hospitals and conventions. Sludge by specialty Narrow down options opening hours, and service immolations. stoner reviews and conditions Gain precious perceptivity from once cases to make informed opinions about your healthcare. Navigation backing Get directions to the chosen healthcare installation through integrated chart functionality.

Keywords : Information and Communication Technology (ICT), Global Positioning System (GPS), Android operating system (AOS), Android Software Development Kit (ASDK), Application Program Interfaces (API).

I. INTRODUCTION

The most recent smartphones have dramatically bettered processing power, RAM, and fresh storehouse. They also have a tonne of added features like internet access, which has allowed inventors to produce a wide range of operations. Because Android AOS) is an open source operating system erected on the Linux kernel and intended primarily for touch screen mobile bias like smartphones and tablet computers, it is constantly espoused by smartphone manufacturers. Certain operations exploit the underpinning tackle of smartphones, particularly detectors like the gyroscope, accelerometer, and propinquity detectors, to reply to redundant stoner conditioning. The medical order offers several health care- related operations that are useful for scheduling immunisations, diagnosing vital sign parameters, and reminding druggies to take their specifics, among other effects. These operations fall under the order of mobile health(m- health) technologies.

II. LITERATURE SURVEY

'Hospital preparedness assessment against COVID-19 pandemic: a case study in Turkish tertiary healthcare services, M. Gul and M. Yucesan" It presents a case study evaluating the preparedness of Turkish tertiary healthcare services in the face of the COVID-19 pandemic:

The study employs mathematical modelling and engineering methodologies to assess the readiness of hospitals to deal with the challenges posed by the pandemic. Understanding these advantages and limitations is important for interpreting the study's findings and considering the potential implications for hospital preparedness assessments in different contexts. It also highlights areas where future research and interventions may be needed to enhance healthcare system resilience in the face of pandemics.

'Analytic hierarchy process for hospital site selection, T. S¸ahin, S. Ocak, and M. Top, journal: Elsevier, 2019" It presents an application of the Analytic Hierarchy Process (AHP) in the context of hospital site selection:

The study focuses on employing AHP as a decision-making tool to systematically evaluate and prioritize various factors influencing the selection of optimal sites for establishing healthcare facilities. Understanding these advantages and limitations is crucial for practitioners and decision-makers considering the application of AHP in hospital site selection.

'An Android-based Application for Deter mining a Specializ ed Hospital Ne rest to the Patient's Location, Syed Muhammad Omair, M. Zeeshan Ul Haque and Muhammad Wasim Munir"

They is developed with the primary objective of efficiently determining the nearest specialized hospital to a patient's location. This innovative application harnesses the power of Android technology to enhance the accessibility and responsiveness of healthcare services. By utilizing location-based services and providing real-time information, the app aims to streamline the process of connecting patients with the most suitable specialized medical facilities in their vicinity. In conclusion, while the Android application offers significant advantages in terms of efficient location-based services and enhanced accessibility to specialized healthcare, addressing limitations such as data accuracy, internet connectivity, privacy concerns, limited coverage, and device compatibility are crucial for its successful implementation and widespread user .

'IoT-Based Smart Health Monitoring System for Diabetes Patients using Neural Network, Md. Iftekharul Alam Efat, Shoaib Rahman and Tasnim Rahman, Publisher: Springer, Cham, 2022"

It presents a cutting-edge solution to address the health monitoring needs of diabetes patients. This system integrates Internet of Things (IoT) technology with advanced neural network algorithms to provide real-time health monitoring, ensuring proactive management of diabetes- related parameters. By leveraging neural networks, the application offers intelligent and personalized insights, contributing to more effective diabetes management and improved overall patient well-being. In summary, the IoT-based Smart Health Monitoring System for Diabetes Patients using Neural Network offers significant advantages in real-time monitoring and personalized health insights.

However, addressing limitations related to data security, technological accessibility, initial costs, user training, and neural network complexity is crucial for the successful deployment and adoption of the system.

2.1 Google Map API's

A common way to find the destination place, calculate the distance, and estimate the time to go there from your current location is to utilise Google Maps. Basically, you can include Google Maps' fantastic functionality and efficacy into your smartphone applications thanks to its wide range of application programme interfaces (APIs). Google provides a library for integrating Google Maps into smartphone applications through Google Play. The Google Maps Android API V2 is currently available and offers enhancements over the To display the map component, a Maps API key is required for smartphone applications to contact Google Maps servers. This free key supports a large number of users and can be obtained from the Google APIs Console by providing the package name and application of the signing certificate. The key is added to the AndroidManifest.xml file for program inclusion.

III. METHODOLOGY

Define requirements and conditions :
Target followership :Identify the primary druggies(e.g., cases, caregivers, excursionists) and their specific requirements crucial functionalities :Determine the features essential for the app, similar as position-grounded hunt, sludge by specialties, real- time data, reviews and conditions, and navigation backing stoner interface :Design a stoner-friendly interface that's intuitive and accessible for all druggies.

Data gathering and integration:

Acquire accurate and over- to- date information on hospitals and conventions, including contact details, position, services offered, specialties, and operating hours. This may involve partnering with healthcare institutions, scraping dependable online directories, or exercising available APIs. reviews and conditions :

Integrate platforms like Google My Business or Yelp to allow druggies to partake their gests with different healthcare installations. Real- time data :

Consider incorporating live delay times, exigency room residency situations, and insurance acceptance information for added functionality.

Technology mound and development

Front- end :
Choose a stoner-friendly JavaScript frame like ReactJS,Vue.js, or Angular for a dynamic and responsive web app.
Back- end :
use a garçon- side technology like NodeJS for effective data operation and API integration. Database: apply a secure and scalable database like Google Cloud SQL or Amazon RDS to store and manage app data.

Mapping API :

Integrate Google Charts, Mapbox, or another mapping service for position visualization and route generation.

Testing and deployment :

Thorough testing:

Conduct rigorous testing across colorful bias and cybersurfers to insure optimal performance and usability.

Deployment :

Choose a dependable hosting platform like Google Cloud Platform, Amazon Web Services, or Heroku to make the app accessible to druggies.

Maintenance and updates:

Establish a plan for ongoing conservation, bug fixes, and point updates to keep the app running easily and applicable.

Security:

Security and sequestration utensil robust security measures to cover stoner data and insure biddable data handling practices. Availability insure the app is accessible to druggies with disabilities, following WCAG guidelines. Monetization strategy Define a sustainable profit model, similar as advertising, decoration features, or hookups with healthcare providers.

IV. SYSTEM DESIGN AND IMPLEMENTATION

The initial stage involved gathering reliable data about physicians and medical facilities to be utilised in the application database.A survey was conducted at eighteen Bengaluru hospitals, identifying ten categories of physicians based on their specialization, including general practitioners, cardiologists, dermatologists, gynaecologists, pediatric child specialists, ENT specialists, neurologists, ophthalmologists, diabetologists, and dentists. at order to get accurate data, including the name of the hospital,

a list of doctors with specific expertise, contact information for the institution, and website addresses,
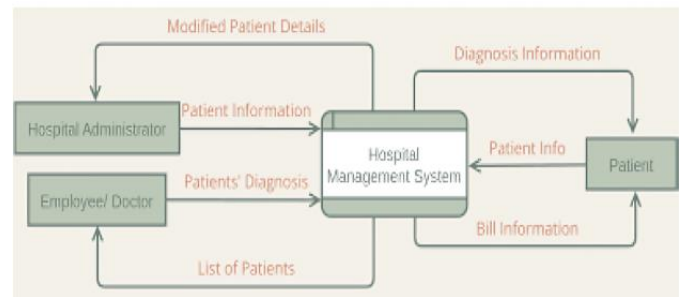

Fig 4.1 Flow of the project

4.1 Development Tool Kit

The application's user interface has been kept clear and basic. The functionality of this programme is easily understandable by the average user. The icons have been chosen with ease of understanding and accessibility to the needed information in mind for the user. Java was used to write the fundamental logic, while XML was used to construct the screens. The Google Libraries in PHP are connected to the Android device using the web service. The user can easily find the closest hospitals based on specialisation by using the Google Maps API.
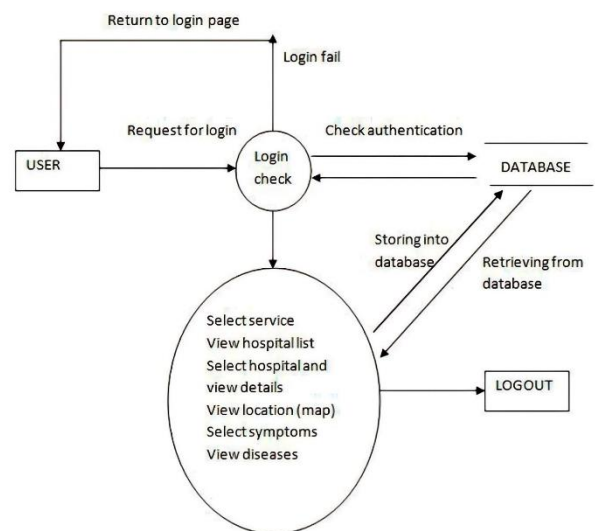

Fig 4.2 Architecture of the project

V. RESULTS

5.1 Unit Testing

A vital component of software development, including the construction of a hospital search app, is unit testing. Unit testing in the context of a hospital finder app concentrates on testing specific code units or components to make sure they function as planned.

5.2 Location Testing

When developing a hospital finding app, location testing is an essential step that entails confirming and guaranteeing the precision and dependability of location-based features.Verify that the geocoding process successfully translates addresses or place names into geographic coordinates (latitude and longitude).Verify the accuracy of the geocoding for the hospital locations included in the app's databases.
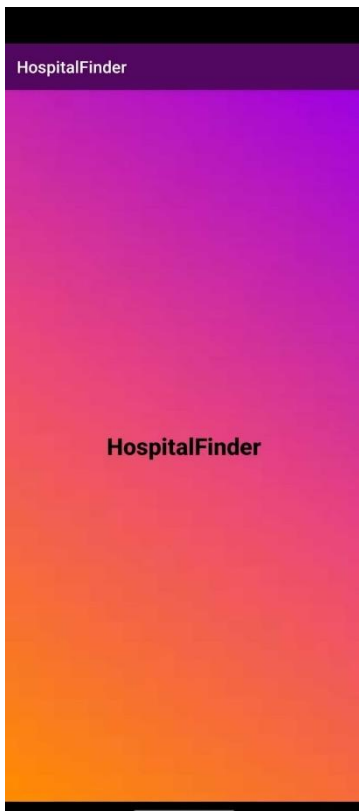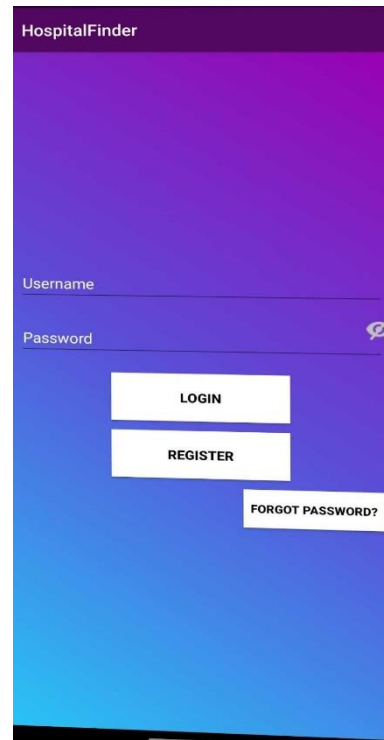

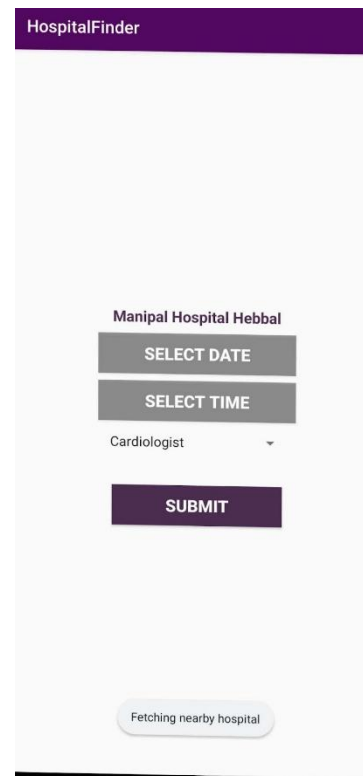Fig 5.2 Signup Page

Fig 5.1 Home Page
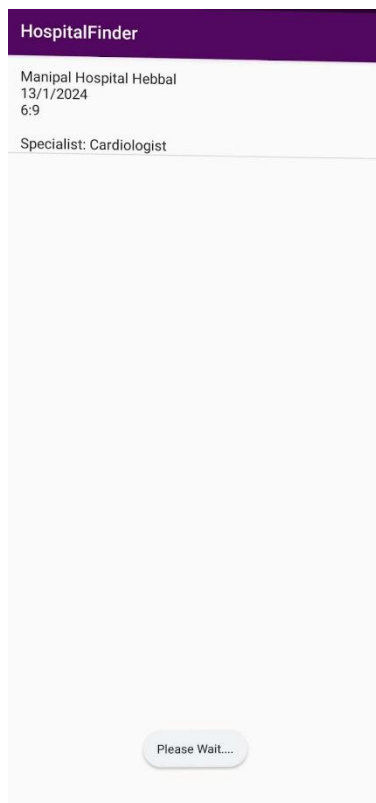

Fig 5.3 Appointment Booking Page

Fig 5.4 Appointment Booking Status

Fig 5.6 Appointments Booked list

Fig 5.5 Nearby Hospitals List

VI. CONCLUSION

In conclusion, the creation and implementation of the Hospital Finder mobile app mark a pivotal stride in mitigating the pervasive challenges that ordinary individuals encounter when confronted with medical emergencies. The distressing scenario of navigating from one hospital to another in a desperate quest for essential medical facilities, medications, and blood supply is an anxiety-inducing and time-consuming ordeal that can yield dire consequences for those in need. The significance of Hospital Finder extends beyond its functionality—it resonates with the fundamental human need for timely and appropriate healthcare, particularly in moments of urgency. By streamlining the process of seeking medical attention and empowering individuals with the knowledge necessary to make informed decisions, this app contributes not only to individual well-being but also to the overall efficiency of healthcare systems. The significance of Hospital Finder extends beyond its functionality—it resonates with the fundamental

human need for timely and appropriate healthcare, particularly in moments of urgency. By streamlining the process of seeking medical attention and empowering individuals with the knowledge necessary to make informed decisions.

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