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Ayush Services Availability App - HDAN

Saisrija A¹, Pragathi D², Deepak B³, Divya G⁴, Gnanendra K⁵

Department of CSE(AI&ML), Vasireddy Venkatadri Institute of Technology, Guntur, Andhrapradesh, India^{1,2,3,4}

Assistant Professor, Department of CSE(AI&ML), Vasireddy Venkatadri Institute of Technology, Guntur,
Andhrapradesh, India⁵

ABSTRACT: The Android application serves as a comprehensive healthcare management system, catering to both users and administrators. Admin privileges include the ability to add doctors and yoga masters, as well as view appointments and user profiles. Users, upon registration, can log in using their email and password, allowing them to explore nearby doctors and yoga masters, access Ayurveda hints, and schedule appointments. The app also facilitates users in uploading Ayurveda-related pictures, with an embedded image recognition feature providing insightful hints. For doctors, the application provides a secure login portal where they can access their appointments, updating appointment statuses and costs. This user-friendly platform ensures efficient management of healthcare services, fostering seamless communication between administrators, doctors, and users. Overall, the app combines user convenience with advanced features, contributing to a holistic healthcare experience.

KEYWORDS: Mobile application, Android

I. INTRODUCTION

Designed to cater to both users and administrators, this comprehensive platform redefines the way we approach healthcare services. Seamlessly integrating advanced features and user-friendly interfaces, our app empowers administrators with privileged access to add doctors and yoga masters, view appointments, and manage user profiles. This centralized control ensures efficient healthcare administration, fostering streamlined communication among administrators, doctors, and users. For users, the journey begins with a simple registration process, unlocking a world of possibilities. The app offers a personalized experience, allowing users to explore nearby doctors and yoga masters, access invaluable Ayurveda hints, and conveniently schedule appointments. What sets this application apart is its unique feature enabling users to upload Ayurveda-related pictures. The embedded image recognition technology provides insightful hints, enhancing the overall user experience and promoting a deeper understanding of holistic wellness practices. Doctors, too, benefit from a secure login portal, providing them with a dedicated space to manage appointments, update statuses, and monitor costs. This collaborative platform fosters a sense of community and connectivity, ensuring that healthcare services are not just efficient but also tailored to individual needs.

1.1 Motivation

Revolutionize healthcare with our Android app, a groundbreaking management system connecting users, administrators, doctors, and yoga masters. Admins effortlessly add healthcare professionals and oversee appointments, while users access nearby experts, Ayurveda insights, and appointment scheduling. The app's image recognition feature enhances Ayurveda experiences, and doctors' benefit from a secure portal for managing appointments. With a focus on user-friendly design, this app transforms healthcare into a seamless, holistic journey for all.

1.2 Problem Statement

The problem addressed is the lack of a streamlined healthcare management system. This Android app aims to bridge the gap by enabling admins to manage professionals, users to access nearby healthcare providers, schedule appointments, and utilize image recognition for Ayurveda hints, thereby enhancing overall healthcare efficiency.

1.3 Objective of the Project

The objective is to enhance accessibility, convenience, and communication in healthcare, ensuring users receive personalized and efficient services. The incorporation of image recognition adds an innovative dimension, furthering the app's commitment to holistic healthcare solutions.



1.4 Scope

The scope of the Android application encompasses the seamless management of healthcare services, allowing administrators to efficiently add and monitor doctors and yoga masters. Users can easily find nearby healthcare professionals, schedule appointments, and utilize image recognition for Ayurveda hints.

II. LITERATURE SURVEY

2.1. Aastha Zade, Gauri Chaudhari, Khyati Raghvani, Sakshi Bodke, Prof.G.R.Shinde, Ayurvedacharya App, 2022

In Ayurvedic Medicine is a system of traditional medicine native to Indians and is a form of alternative medicine. Ayurveda makes the use of plants-based medicine and treatments. Ayurvedic therapy is taken by controlling food habits, taking necessary foods for curing the disease and controlling daily life style. Ayurvedic Remedies are now widely accepted throughout the world. Most of the ingredients of any Ayurvedic Cures can be found at home easily. So, cures are not very costly and can be done easily.

2.2.Nagashree m annigeri, pramod sunagar,"ayurveda upachara-an android app",2018

Ayurvedic Medicine is a system of traditional medicine native to Indians and is a form of alternative medicine. Ayurveda makes the use of plants-based medicine and treatments. Ayurvedic therapy is taken by controlling food habits, taking necessary foods for curing the disease and controlling daily life style. Ayurvedic Remedies are now widely accepted throughout the world. Most of the ingredients of any Ayurvedic Cure can be found in home easily.

2.3.D.B. Anantha Narayana and Sharanbasappa Durg,"Ayurveda: (W)here is the evidence",2021

Ayurveda lacks scientific evidence. By scientific evidence, it is commonly referred to results of human clinical trials undertaken adoring those applied to pharmaceuticals, involving randomized controlled trials (RCT), either a placebo or active controlled. This paper explores the actual situation related to practice of Ayurveda, use of medicines, application of therapies, and the individual dravyas (ingredients). It gives few examples and availability of large body of scientific data in this area. The study, however, does not discuss the reasons and problems of conducting RCTs.

2.4.A.D.A.D.S. Jayalath; P.V.D. Nadeeshan; T.G.A.G.D Amarawansh; H.P Jayasuriya; D. P. 2.5.Nawinna, Ayurvedic Knowledge Sharing Platform with Sinhala Virtual Assistant,2019

In this Ayurveda methods identification of indigenous plants to predict the medicines is very important and must do very carefully. Generally main components that we use to identify a plant are leaf, flower, trunk and root etc. Among these features, we use images of leaves and flowers. To do this we are using deep learning-based CNN approaches. Another useful feature of this system is it provides relevant information of Ayurveda doctors. So, users can find doctors according to their needs and they are able to rate and give recommendations for the doctors. That will be help others to find doctors more easily and efficiently without any doubt.

2.6.Ayan Banerjee,Sandeep K. S. Gupta,"Analysis of Smart Mobile Applications for Healthcareunder Dynamic Context Changes",2014

This paper proposes a novel technique to analyze SMDCS taking into account the dynamic changes in the context and the constant interaction of the computing systems with the physical environment. To show the usage of the technique, Ayushman pervasive health monitoring system is considered as an example SMDCS. Analytical results show that practices considered healthy for a person such as mobility may not be beneficial when an SMDCS is controlling health.

III. SYSTEM ANALYSIS

3.1 Existing System:

The current healthcare system lacks a centralized platform, resulting in inefficiencies such as cumbersome appointment scheduling, limited accessibility to healthcare providers, and a lack of integration between administrators, doctors, and users. User experiences are hindered by the absence of a streamlined process for finding nearby professionals and managing appointments.

Disadvantages of Existing System

1. Lack of integration between administrators, doctors, and users.
2. Inefficient user experiences.
3. Absence of features like image recognition for Ayurveda hints.
4. Disjointed healthcare processes.

3.2. Proposed System:

The proposed Android application revolutionizes healthcare management by offering a centralized platform. Admins can effortlessly add and oversee doctors and yoga masters. Users benefit from streamlined appointment scheduling, proximity-based searches for healthcare providers, and an innovative image recognition feature providing Ayurveda insights. The app ensures a user-friendly experience, allowing patients to easily find nearby professionals, schedule appointments, and upload images for personalized hints. For doctors, it provides a secure platform to manage appointments efficiently. The proposed system aims to create a cohesive healthcare ecosystem, enhancing accessibility, communication, and overall user satisfaction in the healthcare journey.

Advantages of Proposed System

1. Effortless addition and oversight of doctors and yoga masters by administrators.
2. Streamlined appointment scheduling for users.
3. Proximity-based searches for healthcare providers.
4. Innovative image recognition for Ayurveda insights.
5. User-friendly experience with easy appointment scheduling and personalized hints.
6. Secure platform for doctors to efficiently manage appointments.

ARCHITECTURE

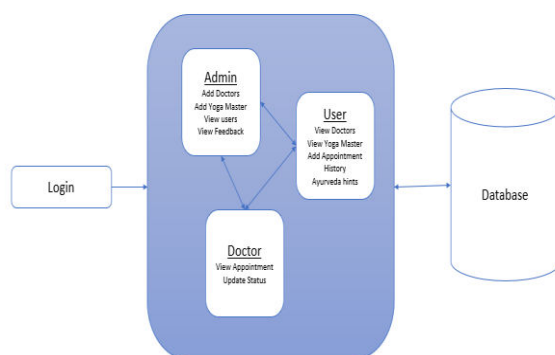


Fig: 3.2.1 Architecture

IV. METHODOLOGY

4.1. Front-end Technology :

Modern terminology has made the novel system development a very important component. As it outlines both designing and coding methodologies, we are applying both traditional methods and cutting-edge new ones. Since all technologies are moving in the direction of APIs, their significance is anticipated to increase quickly. Java is utilized in this instance to run the project dynamically and for finding the best route from the patient's location, we have used the KNN algorithm.

4.2. K- Nearest Neighbour Algorithm:

An introduction to the classifier is the K-nearest neighbour classifier. This algorithm is dependent on the customer's location. It uses neurons as its node to identify the output node, and it uses the shortest path approach. Each node indicates the driver's position, whereas the output node reflects the client's location. Locations of hospitals are indicated by latitude, longitude, or point (x, y) coordinates. The function searches for the nearest neighbour(s) using an array of these places. The closest hospital's index is returned, and the Pythagorean theorem can be used to determine its distance. First we have to find the k nearest neighbours of points and return the indexes of nearest neighbour k. Utilizing the coordinates of these ordered pairs and the formula below, determine the distance between two points (x1, y1) and (x2, y2) by using their coordinates .

$$\text{Distance} = \sqrt{[(x_2 - x_1)^2 + (y_2 - y_1)^2]} \dots\dots\dots(1)$$

Additionally, if we had access to the API that returned the longitude and latitude of the hospital's location, we could determine the precise distance in miles or kilometres to the hospital.

4.3. Google APIs for Location:

A powerful mapping platform service developed by Google is called Google Maps API. This mapping service can be incorporated by the developers into any program or website. Additionally, developer data may be connected with this service. This service provides information on detailed street maps and imagery. Data on distance and anticipated trip times are also available. To embed Google Maps in a particular website or application, an API key is needed. To use this service and create an API key, we need a Google account. The following form is provided by the Google Maps library: com. google. Android. gms. Map View and Map Fragment classes both display the map component.

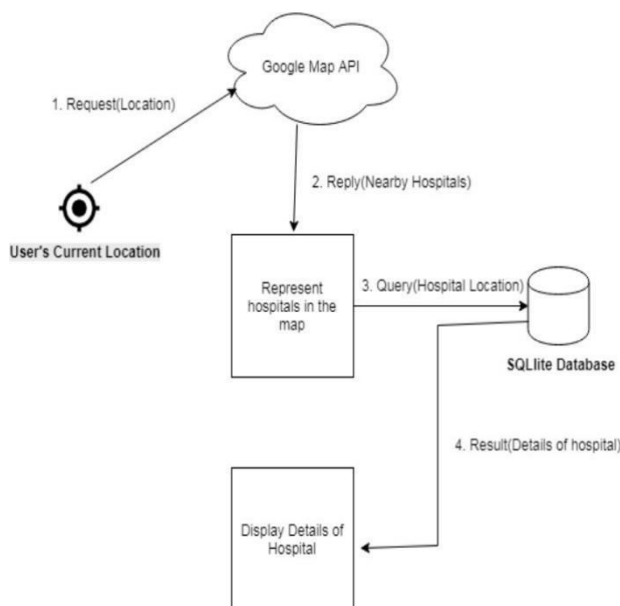


Fig 4.3.1

4.4. Firebase:

With the help of Firebase, we can create web applications without using server-side programming, making the development process simpler and faster. In its free edition, a single Firebase node provides up to 100 connections per second. For more than 3000 INR, the paid edition enables hosting and bespoke domains. Developers can use Firebase to complete all necessary tasks, including authenticating users, storing data, and putting in place access controls. Firebase uses NoSQL to store data, which is organised into pairs of keys. Developers can use the Firebase Cloud Messaging capability as well. Firebase offers an additional 1 Gigabyte of storage space and up to 10 Gigabytes of data transport for your database.

V. SYSTEM DESIGN

INPUT DESIGN

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processing can be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things:

- What data should be given as input?
- How the data should be arranged or coded?
- The dialog to guide the operating personnel in providing input.
- Methods for preparing input validations and steps to follow when error occur.

OBJECTIVES

1. Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system.
2. It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.
3. When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow

OUTPUT DESIGN

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

1. Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should Identify the specific output that is needed to meet the requirements.
2. Select methods for presenting information.
3. Create document, report, or other formats that contain information produced by the system.

The output form of an information system should accomplish one or more of the following objectives.

- ❖ Convey information about past activities, current status or projections of the
- ❖ Future.
- ❖ Signal important events, opportunities, problems, or warnings.
- ❖ Trigger an action.
- ❖ Confirm an action.

VI. IMPLEMENTATION

6.1 Modules

Admin: The admin will login into the app. to add new doctors. the addition of yoga masters. Enables administrators to monitor and manage appointment details.

Doctors: The doctor will login with in email and passwords. He can view Appointment and Update the status and cost of the Appointment.

User: The user will register with his details, he can login with his email and password. He can view nearby yoga master and doctors. He can view the Ayurveda Hint and add the appointment with doctors and view history of the appointment. The users to upload images related to Ayurveda. image recognition to analyse pictures and offer relevant hints.

VII. RESULTS

Building a “AYUSH” hospitals finder application that displays the location and nearby AYUSH hospitals with opening and closing times while integrating various biomedical data sources with information on the hospital's demographics, inpatient procedure rates, and outpatient department is the project's proposed work, Etc. This study demonstrates that when three elements are taken into account—the radius value, journey distance, and travel time—better decisions are made than when simply the radius value is taken into account. The researchers' suggested approach also shares 95% of its characteristics with human decision-making.

7.1.Test cases:

Test strategy and approach

Field testing will be performed manually and functional tests will be written in detail.

Test objectives

- All field entries must work properly.

- Pages must be activated from the identified link.
- The entry screen, messages and responses must not be delayed.

Features to be tested

- Verify that the entries are of the correct format
- No duplicate entries should be allowed
- All links should take the user to the correct page.

INTEGRATION TESTINGS

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g., components in a software system or – one step up – software applications at the company level – interact without error.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

ACCEPTANCE TESTING

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

Functionality	Result
Check to see whether spinning the device works on all app stages and displays.	Passed
Check sure the application is operating as required when it begins or finishes.	Passed
Check to see if the application follows the specifications while switching between modules.	Passed
Make sure you can return from any screen to the previous one.	Passed

Table 7.1.1 Testcase - 1

Compatibility	Result
Make sure that the program is running while making sure the device can still receive calls and texts.	Passed
Whether a device allows the removal of an application.	Passed
Check the application's installation after uninstalling.	Passed

Table 7.1.2 Testcase – 2

Action	Expected Result	Actual Result	Remark
App start-up time	2000ms	2000ms	Passed
Memory consumption for Application	120-190 Mb	134Mb	Passed
Network Speed Per Read/write.	12 kbps-1 Mbps	134Mb	Passed
Response time for read	134Mb	134Mb	Passed

Table 7.1.3 Testcase - 3

VIII. CONCLUSION

In conclusion, our Android application emerges as a transformative force in healthcare, bridging the gap between users, administrators, and healthcare professionals. With an emphasis on user convenience and advanced functionalities, the app redefines how we approach holistic well-being. The seamless integration of features like appointment scheduling, image recognition for Ayurveda insights, and secure portals for doctors ensures a comprehensive and user-centric healthcare experience by fostering efficient communication between administrators, doctors, and users, the application creates a connected ecosystem that prioritizes personalized care. As we navigate the evolving landscape of healthcare, this platform stands out as a beacon of innovation, empowering individuals to take charge of their well-being. In the realms of both traditional and modern healthcare practices, our Android app not only streamlines processes but also enriches the overall healthcare journey, contributing to a healthier and more interconnected society. Embrace the future of healthcare with our app, where user-centric design meets cutting-edge technology for a holistic and transformative healthcare experience.

IX. FUTURE ENHANCEMENT

Future enhancements for our Android application include integrating telemedicine capabilities for virtual consultations, expanding the database of healthcare professionals, and incorporating personalized health tracking features. We aim to implement AI-driven health recommendations based on user data, enhancing preventive care. Additionally, a community forum for users to share experiences and insights will be introduced, fostering a collaborative healthcare ecosystem. These updates will elevate the app's functionality, ensuring it continues to evolve as a pioneering force in the realm of comprehensive healthcare management.

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